

#### 5.2.14 Visual aspects

Structures on the site, including residue dumps and mining infrastructure are noticeable over the medium distance as horizon elements. The former are permanent structures and the latter temporary. While this is of significance in terms of the natural visual character of the region, the impact is felt by few people.

The introduction of tailings dumps and slimes dams to the predominantly flat topography provide an interruption to the natural terrain.

Activity	Aspect	Impact	Significance	Certainty	Duration	Magnitude
Mining	Infrastructure	Visual	Low	Definite	Med. term	Local
	Buildings	Land transformation	Moderate	Definite	Long term	Local
	Stockpiles					
	Spoil dumps					
	Slimes dams					
	Tailings dumps					

#### 5.2.15 Regional socio-economic structure

The mine plays a role in the regional socio-economic context, providing employment and income to the region.

Activity	Aspect	Impact	Significance	Certainty	Duration	Magnitude
Mining	Mining	Job creation	Moderate	Definite	Medium	Local

#### 5.2.16 Interested and affected parties

The adjacent farms will be contacted for comment and invited to express their concerns regarding the draft EMPR once this is available. Primary anticipated impacts include:

- Potential security and stock theft risk;
- Increased littering and incidences of damage to fences and gates;
- Vehicles travel on farm tracks causing dust pollution and damage in the form of potholes, and rutting (general disrepair).

Activity	Aspect	Impact	Significance	Certainty	Duration	Magnitude
Mining	Vehicles	Security loss	Mod. - Low	Possible	Med. term	Local
	Staff and labour	Littering	Mod. - Low	Probable	Med. term	Local
		Road degradation	Mod. - Low	Probable	Med. term	Local

### 5.3 Decommissioning phase

It is not the intention to apply for partial closure of the mine. On completion of the mining operation, infrastructure such as the hoist, headgear and all components of the plant will be dismantled and removed. The shafts will be closed and sealed.

As the farm (or parts thereof) will in all likelihood continue to be used for grazing the manager's house will be left intact.

Other structures built and / or renovated specifically for mining purposes, such as the office, workshop, explosives magazines, wash bays, vehicle maintenance yards, salvage yards and waste disposal sites will be demolished / cleared away, and final backfilling / shaping of the trenches, the storage dam, tailings dumps and slimes dams will be done. All the above areas will then be rehabilitated and re-vegetated.

As effort will be applied throughout the operational phase to implement rehabilitative measures on an ongoing basis, a minimum amount of work at minimal cost is expected to be required during the decommissioning phase. The following impacts related to decommissioning are anticipated:

#### 5.3.1 Infrastructure areas

- Soil compaction by large or heavily laden vehicles.
- Disruption of the soil profile during excavation and backfilling.
- Pollution of the soil profile with building rubble or other waste, which cannot be completely retrieved.
- Continued erosion of blast hole slopes.

- Domination by indigenous pioneer plants including weeds in disturbed sites.
- Invasion by alien plants.

### **5.3.2 Mine residue deposits**

- Permanent visual impact of tailings, slimes dams and the storage dam.
- Visual impact of areas where demolition has occurred.
- Pollution of the soil profile by waste, spillages and seepage.
- Erosion of slopes, especially those that have not yet vegetated.
- Disruption to surface drainage.

No problems are foreseen with stabilising the dumps or slimes dams during operation as new structures will be rehabilitated to have a slope angle of no greater than 18°.

### **5.4 Residual impacts after closure**

The residual impacts after closure are on the geology in terms of the actual underground mine and blast holes. The shafts will be fenced off and secured, but the underground series of shafts and tunnels will remain a concern for collapses and subsidence, as well as constituting a physical danger to humans and livestock.

The residual impacts include:

- The blast hole constitutes a physical danger to humans and livestock.
- The slopes of the blast hole will continue to erode.
- Slimes dams, which occupy land, alter topography and potentially degrade the surrounding soil and water quality.
- Tailings dumps, which occupy land, alter the topography and potentially degrade surrounding soil and water quality.
- Potential lack of stability of rehabilitated ground and residue deposits – the possibility of erosion would have to be monitored and handled.

- The potential for the appearance of invasive plants and weeds, especially in rehabilitating areas.
- Failure of the rehabilitated area, or parts of it, to vegetate.

#### **5.4.1 Acid mine drainage**

Nil.

#### **5.4.2 Ground water**

When the mine is closed the ground water levels will gradually return to their pre-mining levels. The rate at which the levels are re-established will depend on the prevailing rainfall and recharge conditions as well as the extent to which mining on adjacent properties persists.

#### **5.4.3 Stability of rehabilitated ground and residue deposits**

Tailings dumps created during operations will have an angle of 45°. These dumps will later be rehabilitated to an angle of no greater than 18°. As part of rehabilitation it is therefore anticipated that vegetation could be re-established, water run-off and erosion curtailed and the dumps stabilised.

The slimes dam walls will be secured and once the surface area of the dam has dried out sufficiently to be planted, there should be no further impact on the environment. It is planned to leave a minimum of 0,8m freeboard at the cessation of operations to cater for the occasional heavy downpour.

It is not possible to clearly define the end use of all the disturbed areas due to changing circumstances.

#### **5.4.4 Long term impacts arising from river diversions**

Not applicable.

## **PART 6: ENVIRONMENTAL MANAGEMENT PROGRAMME**

Described below are the management aspects of the impacts identified in PART 5 as being significant in nature.

### **6.1 Construction phase**

As discussed in section 5.1, the construction phase of the project is relatively limited and relevant activities will be managed in accordance with acceptable environmental practice as outlined for the operational phase.

Kophia Diamonds is committed to the rehabilitation of all areas affected by the mine and associated activities on an ongoing basis. This aims not only to minimise final rehabilitation costs during the decommissioning phase, but also to reduce the cumulative effect of impacts by addressing them sooner rather than later. Specific actions to be initiated during the construction phase, and maintained throughout the lifetime of the mine include:

- The demolition of redundant buildings and infrastructure during an initial site cleanup and the immediate rehabilitation of these areas wherever practical.
- The initiation of profiling and landscaping (and the subsequent rehabilitation) of tailings dumps as these are created.
- The introduction of fixed point photography on a six-monthly basis to monitor rehabilitation progress (refer to map 5 for the likely positions of these points).

### **6.2 Operational phase**

Significant impacts, identified in section 5.2 will be managed during the construction and operational phases until decommissioning activities begin. These are described below:

### **6.2.1 Geology**

#### **Objective:**

- To remove ore and waste rock in a legal and proper manner.
- To ensure that the removal of material from underground will not adversely affect the surface.

#### **Management Guideline(s):**

- The impact on kimberlite blast / fissure is permanent therefore no management action is identified.
- Monitor the surface for any soil subsidence on an ongoing basis.
- Fill in dangerous areas in which surface subsidence has occurred and fence these off.

### **6.2.2 Topography**

#### **Objective:**

- To ensure all slimes dams, tailings dumps and blast holes are stable and safe.
- To ensure that placement of new dumps, slimes dams infrastructure etc. takes cognisance of the position of natural drainage channels, power lines and the kimberlite fissure.
- To reduce the visual impact of the altered topography by a process of ongoing reclamation and rehabilitation.

#### **Management Guideline(s):**

- Build a berm and cut-off trench with the first of the new tailings material to an average height of 1,5m and not exceeding an 18° gradient around the perimeter of the blast holes to render them safe.
- Once the berm around the blast hole has been completed, dump new tailings and waste rock according to the design criteria and capacity of the site in areas demarcated for this purpose.

- Do not place new slimes dams, waste rock or tailings within 100m of a power line, in natural drainage channels, or over the kimberlite fissure.
- Do not, under any circumstances, use residue dumps to store surplus water.
- Monitor the stability of closed slimes dams on an ongoing basis (even though closing a slimes dam improves stability, as water is no longer being deposited artificially as slimes on the dam).
- Profile all tailings dumps to a final gradient of no greater than 18° so as to 'match' the surrounding landscape.
- Re-vegetate all profiled tailings and slimes dams on an ongoing basis as these become available.
- Re-treat waste rock dumps which are shown to have an economically extractable resource.
- Remove temporary structures such as topsoil stockpiles and kimberlite ore stockpiles on an ongoing basis wherever possible.
- Landscape and rehabilitate the surface to facilitate drainage and avoid the formation of pans.

### 6.2.3 Soils

#### Objective:

- To conserve soil.
- To curb the continued erosion of soil on denuded slopes.
- To stockpile topsoil for future use from areas to be developed.
- To prevent the compaction of soil.
- To prevent the pollution and sterilisation of soil.
- To prevent the contamination of soil.
- To prevent contaminated soil adversely affecting water courses.
- To cover mining areas with sufficient soil in order to maintain vegetation.

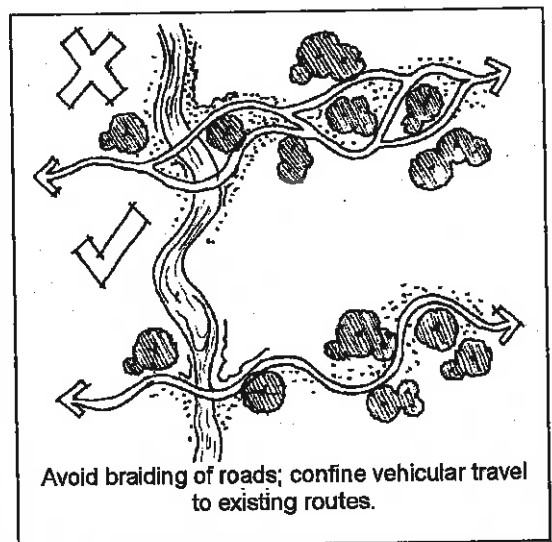
### Management Guideline(s):

#### Topsoil

- Remove topsoil to a depth of 50cm prior to the development of the approved area, wherever possible and stockpile before any construction commences.
- Store topsoil within the claims area in such a way and in such a place that it will not cause damming up of water or wash-aways, or wash away itself. Piles must not exceed a height of 2 metres.
- Topsoil stockpiles must be protected from wind erosion through mulching / wetting. These stockpiles are to be vegetated if the material is to be stored for longer than one season.
- Take care to prevent the compaction of the topsoil in any way, especially by trucks being driven over the material.

#### Erosion control

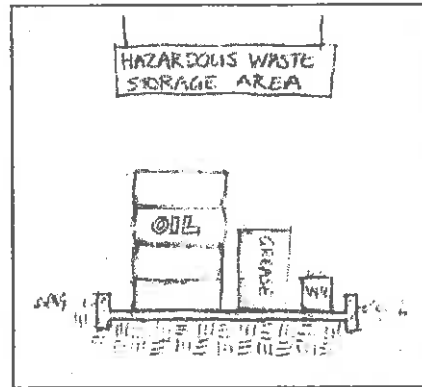
- Monitor all changes in slope (including the berm, the tailings dumps, slimes dams, storage dams and stockpiles) regularly for erosion, and timeously undertake corrective measures.
- Provide all water discharges from lined canals / channels into natural ground with energy dissipation measures.
- Confine vehicular movement on site to the established access road so as to limit unnecessary disturbance of natural vegetation and compaction of soils.
- Avoid braiding of roads; confine vehicular travel to existing routes.



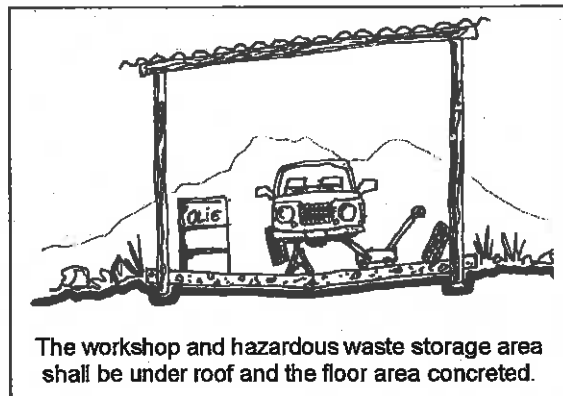


### Pollution control

- Regularly inspect the areas surrounding current slimes dams and tailings dumps to establish whether any spillage from the dams or dumps has contaminated nearby soils.
- Place all fuel tanks on bunded surfaces, the bund being capable of holding at least the volume of the tank.
- Store all chemicals and hazardous waste such as oil, grease, hydraulic fluids, batteries, neon globes etc in receptacles in secure covered stores with the necessary pollution control facilities (cement surface and bund wall).



- The maintenance of vehicles and equipment will only take place within a designated maintenance yard area.
- Install drip pans, a thin concrete slab or a PVC lining in the storage area and maintenance yard with a view to preventing soil and water pollution.
- Install a catchment pit around work areas to ensure containment of any spillages or runoff water.



- Ensure that the equipment used in the crushing process is adequately maintained so that no spills of oil, diesel, grease or hydraulic fluid occur during operation.
- Remove all polluted soil, resulting from fuel and chemical spills and dispose of at a suitable registered disposal site.

- Where necessary the area will be reshaped to ensure adequate stormwater control. If fill material is required, builders' rubble, waste rock dump material and / or subsoil will be used.
- Fires will only be allowed in facilities specifically constructed for this purpose. If required by relevant authorities, a firebreak must be burned around the perimeter of the claims area.

#### Waste management

- Collect domestic waste generated at the compound and office, as well as non-biodegradable refuse such as glass bottles, plastic bags, metal scrap etc and store in receptacles located at particular collection points for regular disposal.
- Collect biodegradable refuse generated from the office, plant, storage area, or any other area as above.
- Store all redundant and scrap steel in a defined salvage yard, to be later used or sold.
- Remove waste material of all descriptions entirely from the site and dispose of at a registered waste disposal facility on a regular basis.
- Dispose of hazardous waste at a registered site for hazardous waste / or have it removed by a hazardous waste contractor.
- All other waste, for example building rubble will be disposed of in accordance with 'The Minimum Requirements for Waste Disposal by Landfill', Department of Water Affairs and Forestry.
- No waste of any kind may be dumped, buried or burned haphazardly on the site.
- The mine operators and managers will maintain good housekeeping practices ensuring that the site is kept tidy and litter free and that waste is removed at predetermined and regular intervals.

#### **6.2.4 - 6.2.5 Land capability and use**

##### **Objective**

- To minimise the impact of land transformation.
- To minimise the alteration of land capability.

##### **Management Guideline(s):**

- Clearly demarcate and fence the claims area as prescribed by the Director of Mineral Development.
- Mining activities may only take place within the designated claims area.
- Construct new infrastructure on already disturbed areas.
- Minimise the area designated for various site infrastructure such as the wash bay, vehicle service yard etc should be the minimum area required and positioned in order to ensure the least disturbance to vegetation.
- Do not unnecessarily disturb vegetation. Confine activity to the claims area as much as is possible.
- Ensure that no trees or shrubs are felled or damaged for the purpose of obtaining firewood, unless agreed to by the landowner / tenant.

#### **6.2.6 Natural vegetation / Plant life**

##### **Objective:**

- To vegetate residue disposal sites where possible.
- To re-vegetate areas disturbed by mining where possible.
- To achieve self sustaining vegetation on residue disposal sites and all rehabilitated areas.
- To control invader or exotic species.

#### **Management Guideline(s):**

- Rip or plough compacted soil to a depth of 300mm, then level and contour the area. This will facilitate water and seed penetration.
- Wherever possible, spread topsoil evenly over the whole area to its original depth.
- Fertilise the area, specifically the denuded *Valsrivier* soils, in the following manner prior to re-vegetation (these recommendations are based on a soil analysis included as Appendix 4):
  - Work in 40 tons of organic material (such as well cured kraal manure) per hectare to a depth not exceeding 30cm;
  - Apply 2 tons of ammonium sulphate and 1 ton of super phosphate per hectare;
  - Apply 350kg 3:1:5 (38) (with K as KNO<sub>3</sub>) post emergence to address the K and NO<sub>3</sub> deficiencies.
- Seed the site with a vegetation seed mix adapted to reflect the local indigenous flora.
- Reintroduce as much of the natural vegetation as possible. Use the dry lands technique in flat areas.
- Monitor the rate of rehabilitation. If this does not manifest as a minimum of 50% cover of appropriate species, then a suitable program must be implemented to achieve the required coverage.
- This program will include the addition of fertiliser and an appropriate rate and seeding.
- Institute a programme of invasion control. This should be by mechanical and manual methods rather than chemical.

#### **6.2.7 Animal life**

##### **Objective:**

- To minimise the impact of the mine on naturally occurring vegetation and hence the habitat for wildlife.
- To reinstate vegetation wherever possible and hence reinstate habitats for wildlife.

- To limit poaching and extermination of animals perceived to be vermin.

**Management Guideline(s):**

- Fence off mining areas from remaining undisturbed natural areas and confine activity and access to the claims area as far as possible.
- Institute awareness programmes for labourers in terms of the unacceptability of wildlife poaching and stock theft.
- Remove any snares or traps set for the poaching of wildlife found on the site.
- Regularly undertake checks of the surrounding natural vegetation to ensure no traps have been set and remove traps/ snares uncovered.
- Fine employees not adhering to the above.

**6.2.8 Surface water**

**Objective:**

- To facilitate drainage.
- To conserve water.
- To maintain the efficient operation of storm and process water systems.
- To keep clean and dirty water separated.
- To prevent clean water runoff from becoming contaminated.
- To ensure that water pollution is contained on mine property and that natural water courses / bodies are not affected.
- To eliminate the contamination of runoff water thus obviating the need to treat excessive quantities of polluted water.

## **Management Guideline(s):**

### Water balancing

- Manage water usage on an ongoing basis.
- Monitor water volumes - water use is to be analysed to ensure that all possible use is accounted for and areas of waste are identified. This approach only applies to normal conditions. Storms are excluded.
- Implement a proper closed dirty water system and manage this in such a way that no water enters the natural hydrological system.
- Store / dispose of all wastewater in such a way that the pollution of natural water sources and the formation of unpleasant bacterial odours are avoided.
- Dirty runoff should be collected in a pollution control (storage) dam from where it can be reused as process water.
- Maintain the storage dam regularly and on an ongoing basis.
- Allow for a 0,8m freeboard to contain runoff.
- Employ a system of toe trenches and a penstock drainage system to collect the surface runoff and subsurface seepage water emanating from all residue deposits and the mine processing plant area.

### Stormwater

- Set a water monitoring programme in place to ensure that the stormwater from undisturbed areas will not become contaminated with slimes or return water.
- Institute civil works in all areas producing dirty or contaminated runoff (including the processing area, tailings dumps and slimes dam) to separate runoff wherever practically possible.
- Allow for proper drainage and water runoff from dumps through contouring and as soon as is possible as well as the re-vegetation of slopes.
- Ensure that stormwater does not collect in ponds.

- Investigate the stormwater drainage around each residue dump. If stormwater is shown to flow through any of the dumps, install facilities to divert this clean water away from the dump.
- Identify additional drainage facilities that will be required to control stormwater on an ongoing basis.
- Maintain drainage canals by regular removal of silt and aquatic weeds.
- Deposit silt on the slimes dams. In the case of slimes spills, monitoring will need to be done more regularly.

#### **6.2.9 Ground water**

##### **Objective:**

- To monitor the quality and quantity of groundwater.
- To minimise the contamination of groundwater.
- To ensure that dewatering does not impact too adversely on the regional or local water users.

##### **Management Guideline(s):**

- Draw up a programme of ground water monitoring which will include locating representative boreholes and sampling existing boreholes within and surrounding the area.
- Reduce the overall water withdrawal needed during mining operations through recycling of process and stormwater runoff. Refer to 6.2.8 above.
- Minimise contamination of soils and seepage from the process water system and infrastructure sites. Refer to 6.2.8 above.
- Maintain the drainage and process water system and facilitate clean run-off. Contain and re-use contaminated water. Refer to 6.2.8 above.
- Operate waste disposal sites in a proper manner in accordance with DWAF minimum requirements. Refer to 6.2.3 above.

### **6.2.10 Air quality**

#### **Objective:**

- To control the incidence of unnecessary dust on the site and eliminate associated nuisance and health problems.

#### **Management Guideline(s):**

- Monitor dust conditions and quantities by setting up a gravimetric sampling programme. A dust monitoring programme will then be submitted to the Principle Inspector of Mines (DME) on a six month basis.
- Dust control will take place by means of water sprays at the following points:
  - Bin – feeding the conveyor belt,
  - Crusher plant,
  - The chute at the end of the conveyor belt system feeding the tailings to the tailings dump, and
  - Loading and hauling - All active roads will be watered down on a regular basis.
- Ensure that the area or building where crushing takes place is adequately ventilated and the floor, surfaces and machinery is regularly cleaned to prevent the accumulation of dust.
- Install extraction systems with dust filters in the plant area if necessary.
- Rehabilitate and vegetate exposed areas such as tailings dumps and slimes dams as soon as possible during mining to further prevent any dust source. Refer to 6.2.6 above.

### **6.2.11 Noise**

#### **Objective:**

- To control the incidence of unnecessary noise on the site and eliminate associated nuisance and health problems.



**Management Guideline(s):**

- Ensure that all mechanical equipment is in good working order and that vehicles adhere to the relevant noise requirements.
- Equip every vehicle in operation with a silencer on its exhaust system.
- Apply appropriate lubricants wherever necessary to ensure that surfaces which interact during mechanical movement do not generate undesirable noise levels.
- Provide personnel with appropriate noise containing equipment as required.

**6.2.12 Resources (Archaeological and Cultural)**

- Should archaeological or cultural finds be unearthed during mining operations, then a suitably qualified specialist will be called in to assess them.

**6.2.13 Sensitive landscapes**

**Objective:**

- To protect the sensitive landscapes from potential impacts by mining and associated activities as far as is practical.

**Management Guideline(s):**

- Fence off mining areas from remaining undisturbed natural areas and confine activity and access to the claims area as far as possible.
- Rehabilitate and re-vegetate denuded areas on an ongoing basis. Refer to 6.2.3 and 6.2.6 above.

**6.2.13 Visual aspects**

**Objectives:**

- To minimise visual disturbance or aesthetically unacceptable practices as far as is practical.

#### **Management Guideline(s):**

- The headgear and plant are conspicuous due to the flat terrain, this is a characteristic feature of mining and of the region, and save for their removal on closure no management or screening is required.
- Manage permanent structures such as tailings dumps and slimes dams through an ongoing process of contour grading and re-vegetation. Refer to 6.2.2 and 6.2.6 above.
- Remove temporary structures such as topsoil stockpiles and kimberlite ore stockpiles on an ongoing basis.

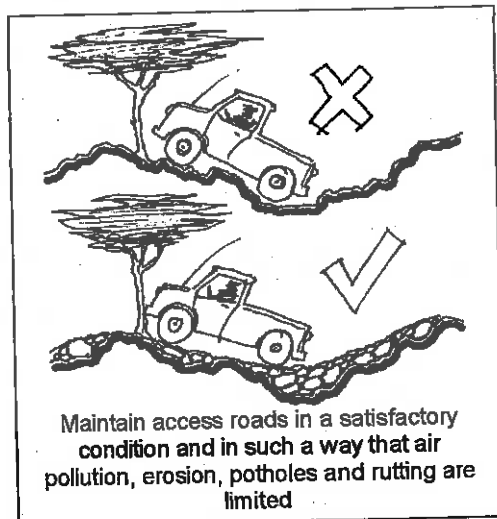
#### **6.2.14 Regional socio-economic structure**

No management required.

#### **6.2.15 Interested and affected parties**

Specific management actions have been detailed in the various sections above related to the impacts that may be felt by interested and affected parties, for example, the generation of dust and noise. In addition, the following guidelines should be followed:

- Maintain access roads in a satisfactory condition and in such a way that air pollution, erosion, potholes and rutting are limited.
- Keep travelling on access roads to reasonable working hours; where deviations are anticipated, notify the relevant landowner(s).
- Consider armouring haul roads chosen for long-term and heavy duty use.



- Maintain reasonable vehicular speeds at all times in order to prevent accidents, excessive noise and dust and injuries to livestock.
- Littering on the length of public and private access roads is not acceptable; litter removal from alongside private roads will be undertaken should littering become a concern.
- Leave gates that are encountered open or closed in the same state as they were found, subject to the requirement of the relevant landowner / lessee.
- Under no circumstances will fences be cut or disturbed without an agreement with the relevant landowner / lessee.

#### **6.2.16 Submission of information**

The following information, revisions and reports will be submitted to the relevant authority during the term of the mining operation:

- EMPR – annual revision – Department of Mineral and Energy Affairs.
- Dust monitoring programme – 6 monthly – Department of Mineral and Energy Affairs.
- Ground and surface water monitoring – 6 monthly - Department of Water Affairs and Forestry.
- Performance assessment report – annually – Department of Mineral and Energy Affairs.
- Fixed point photography of rehabilitation progress – 6 monthly - Department of Mineral and Energy Affairs.

#### **6.2.17 Maintenance**

##### **6.2.17.1 Rehabilitated land**

Any disturbed areas, which have been rehabilitated, will be monitored every 6 months to ensure that no erosion is taking place. The land must not be incorporated into grazing or conservation areas until the vegetation has had sufficient time to become established.

#### 6.2.17.2 Water pollution control

Systems to control runoff must be maintained until closure. Water control structures will be monitored every 6 months in order to check for signs of damage. After a heavy rainstorm, these structures will be checked and any damage repaired immediately. The slimes and collection dam will also be monitored and maintained every 6 months.

#### 6.2.17.3 Rehabilitated Residue Deposits

Rehabilitated residue dumps will be monitored regularly for signs of seepage, movement or erosion. Any irregularities will be repaired immediately.

Tailings maintenance includes the monitoring of the gradient and condition of the slope every 6 months. This monitoring will also include the height and the potential impact on the topography.

The potential for long-term deterioration in water quality as well as the potential for seepage and leachate from the slimes dams are less significant due to the absence of chemical pollutants.

### 6.3 Decommissioning phase and closure

See Map 6.

#### 6.3.1 *Closure objectives*

The primary objective is to obtain a closure certificate at the end of the life of the mine at minimum cost and in as short a time period as possible whilst still complying with the requirements of the Minerals Act.

To realise this, the following objectives must be achieved:

- Rehabilitate the claims area to the satisfaction of all relevant parties.
- Maintain underground water quality throughout the life of the operation.

- Rehabilitate all dangerous excavations or subsidence on surface.

### **6.3.2 Infrastructures areas**

- Dispose of all saleable assets and identify alternative uses of as much of the infrastructure as possible.
- Remove / dismantle the infrastructure in-situ and ensure that all foundations and debris are removed.
- Rip or plough the surface of the roads, vehicle maintenance yard, storage areas and infrastructure sites to a depth of 300mm, then level and contour the area.
- Wherever possible, spread topsoil which was previously stored for this purpose evenly over the whole area to its original depth.
- Fertilise the area if as required. Refer to 6.2.6.
- Seed the site with a vegetation seed mix adapted to reflect the local indigenous flora.
- Monitor the rate of rehabilitation. If this does not manifest as a minimum of 50% cover of appropriate species, then a suitable program must be implemented to achieve the required coverage.
- This program will include the addition of fertiliser and an appropriate rate and seeding.

### **6.3.3 Mine residue deposits**

- Profile the tailings dumps and the slimes dams (initially with slope gradients of 45°) to have slopes not exceeding 18° and re-vegetate. Retain all necessary drain systems to control seepage from the slimes dam.
- Doze a wall along the top edge of the tailings dump to stop rainwater running down the sides and causing erosion.
- Rehabilitate and vegetate the slimes dams to a minimum cover of 50%. If the cover is less than this, a suitable program must be implemented to achieve the required 50% coverage. This program will include the addition of fertiliser and an appropriate rate and seeding.

- Backfill / level the storage dam as well as stormwater trenches, toe trenches other excavations.
- Compact redundant French drains and cover these with a final layer of topsoil to a height of 10cm above the surrounding ground surface.
- Remove all waste material of all descriptions inclusive of receptacles, scrap, rubble and tyres entirely from the mining area and dispose of at a suitable waste disposal facility.
- Remove all contaminated soil associated with the above waste and disposal sites and dispose of at a suitable waste disposal facility.
- No waste will be burned or buried on the site.
- Reshape areas where demolition and excavation has taken place to control surface water drainage.
- Self-sustaining vegetation will result in the control of erosion and dust. Nothing further is required.

The long-term stability of any environment where underground mining activity has taken place cannot be guaranteed. In this regard no new developments will be allowed above mined areas.

#### **6.3.4 Sealing of underground workings**

- Current thinking is that all infrastructure with no future use or resale value and most of the structures will be removed / demolished.
- Once all items of value have been removed from underground, the shafts will be closed and sealed in order to prevent access. It is unlikely that they will be filled, in all probability mitigation / management will make provision for fencing off these areas. The advice of the mine safety inspectors will be sought and their requirements adhered to.
- Stormwater channels will be excavated on the surface to ensure that the shaft and plant areas remain reasonably dry in the event of heavy downpours.

- The claims area will be fenced off.

### **6.3.5 Rehabilitation of ramps, roads and voids**

- Fertilise the area as required. Refer to 6.2.6.
- Should subsidence or voids occur, these will be filled with kimberlite tailings or a suitable security fence will be erected around the opening should backfilling prove impractical (such actions will be determined in consultation with the mine safety inspectorate, and guidelines addressing such issues obtained).
- Dangerous excavations will be fenced off with appropriate danger signs displayed conspicuously on the fencing.
- Remove all non-natural material used for the construction of roads and ramps that could hamper the re-vegetation of these areas.
- All roads will be ripped or ploughed, fertilised and seeded, providing the new landowner does not want them to remain.

### **6.3.6 Submission of information**

Audit information on post decommissioning activities will be maintained and made available on request.

### **6.3.7 Maintenance**

Post decommissioning maintenance will be continued until such time that closure is approved. These activities are as follows:

- Monitoring of vegetation and progress.
- Monitoring of surface and ground water quality.
- Monitoring of erosion on rehabilitated areas (and especially the blast hole slopes).
- Monitoring of subsidence (tailings dumps, surface outcrop of dyke).
- Monitoring of slimes dam walls.

The aim of the environmental management plan is for rehabilitation to be self-sustaining, so that the least possible aftercare is required.

## 6.4 Proposed timetable, duration and sequence

The dates and schedules given below are estimates and are dependent on economic condition related to the remaining life of the operation.

### 6.4.1 *Prospecting projects*

Not applicable.

### 6.4.2 *Mining projects*

#### 6.4.2.1 Submission of EMPR

The final EMPR will be submitted in February 2002.

#### 6.4.2.2 Start and duration of construction period

The construction period is limited as little construction is envisaged. It is estimated that a period of six months after commencement of mining authorisation will be required for the construction period, upgrading of existing infrastructure and dewatering process, as these will occur concurrently.

#### 6.4.2.3 Production

It is envisioned that the recycling of tailings (Phase One) will commence during October 2002, and Phase Two will commence in January 2003, and is expected to continue until 2027.

#### 6.4.2.4 Proposed rehabilitation programme

Partial closure may be applied for in respect of underground operations prior to the final closure of the surface operations.

Ongoing rehabilitation measures will be applied whilst the mine is still operational in efforts to reduce the cost impact. The following steps will be taken:

- Equipment, structures and buildings that must be disposed of will be identified.



- Once equipment and structures have been removed, demolition and disposal of foundations, concrete works and roads will commence.
- Profiling, landscaping and rehabilitation of old slimes dams and tailings dumps will also be initiated.
- After the demolition and cleaning phase, rehabilitation of the disturbed areas will begin. The re-vegetation of these areas will commence during this phase.
- During this period, the mine management will have introduced action programmes and other schemes to cater for employees affected by the mine closure.
- Ongoing monitoring and audits will be in place to ensure that objectives have been met and that rehabilitation measures have been successful.

At this stage it is not possible to provide an accurate estimate of the duration for each of the phases mentioned above.

#### 6.4.2.5 Proposed dates for partial closure applications

Approximately 20 years from application approval, i.e. 2022.

#### 6.4.2.6 Decommissioning and aftercare programme

The aftercare programme will consist of monitoring and audits. Where adverse trends have been identified remedial action will be taken. This period is expected to last approximately 1 year or until such time as the relevant parties have agreed that no further action is required.

#### 6.4.2.7 Date for closure application

Approximately 25 years from application approval, i.e. 2027.

## 6.5 Financial provision

Specific initial rehabilitation of the Blaauwbosch Mine has been requested by the DME. This includes the 'tidying' of the site and the making safe of the blast hole. These initial costs have been estimated at R199 500,00 (a quote has been

included as Appendix 2). A guaranteed rehabilitation fund to this value has been secured for Blaauwbosch Mine through ABSA Bank to cover these initial rehabilitation costs. This has been included as Appendix 3.

As Kophia Diamonds undertakes to implement the above management plan throughout the operational phase, this fund will be upgraded / revised on an annual basis.

## **PART 7: CONCLUSION**

Mining operations have had an impact on the environment in the past and will continue to have an impact in the future. The management plan laid out in Chapter 6 is therefore very important for the operating and closure phases. If the management plan is followed and adhered to, then there should be no significant outstanding impacts Kophia Diamonds will need to address at closure. The only impacts remaining on closure will be the residual impacts.

The residual impacts include:

- Slimes dams, which occupy land, alter topography and potentially degrade the surrounding soil and water quality.
- Tailings dumps, which occupy land, alter the topography and potentially degrade surrounding soil.
- Mine waste disposal facilities (collection water dams and evaporation ponds) may pose a threat to the groundwater even after closure.
- The danger of continued erosion, specifically around the blast hole.

It is the responsibility of the mineral rights holder to ensure that the manager and workers on the mine are able to implement the EMPR.

Assuming that environmental management is practised throughout the operational period of the mine, and that the closure objectives are met, the general overall impact on the environment should be minimal.

## **PART 8 STATUTORY REQUIREMENTS**

The mine has not been granted, nor has it applied for, any permissions under statutes concerning the environment.

## **PART 9: AMENDMENTS TO EMPR**

As this is an original submission, no amendments are included.

## **PART 10: REFERENCES AND SUPPORTING DOCUMENTATION**

Back-up information and reports concerning the EMPR will be made available on request.

## **PART 11: CONFIDENTIAL MATERIAL**

Confidential information concerning the life of Mine Plan, references and certain other statistics have not been disclosed or included in this document.

Should such information be required for purposes of granting the Mining Authorisation, the need must be referred to the applicant.

## **MAPS**

- Map 1:** Orientation and Adjacent Land Use
- Map 2:** Geology, Topography and Hydrology
- Map 3:** Soils and Vegetation
- Map 4:** Pre-mining Land Capability and Land Use
- Map 5:** Mining Surface Infrastructure and Soil Utilisation Guide
- Map 6:** Expected Post Mining Topography



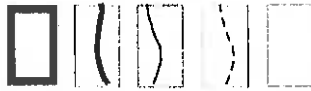
# BLAAUWBOSCH MINE EMPR

February 2002

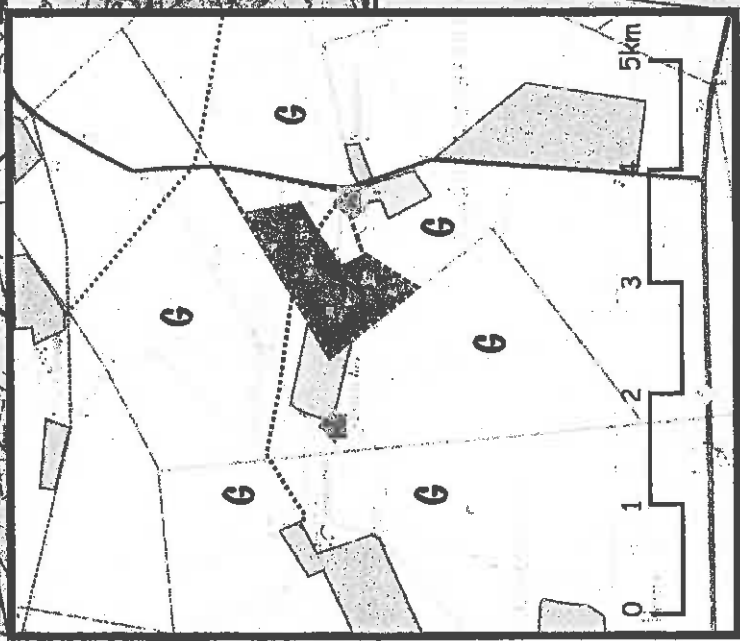
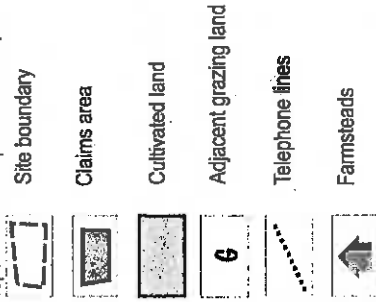
## Map 1: Orientation and adjacent land use

### land use

**Orientation** (Source: 1:500000  
Topocadastral Map No. 2824, Kimberley)






**Adjacent land use (Inset)** (Source: 1:50000  
Topocadastral Map No. 2825CB, Blaauwbosch)





**BLAAUWBOSCH MINE**  
**EMPR**  
 February 2002

**Map 2: Geology, Topography and Hydrology**





Geology (Source: 1:25000 Geological Series Sheet No. 2824, Kimberley)

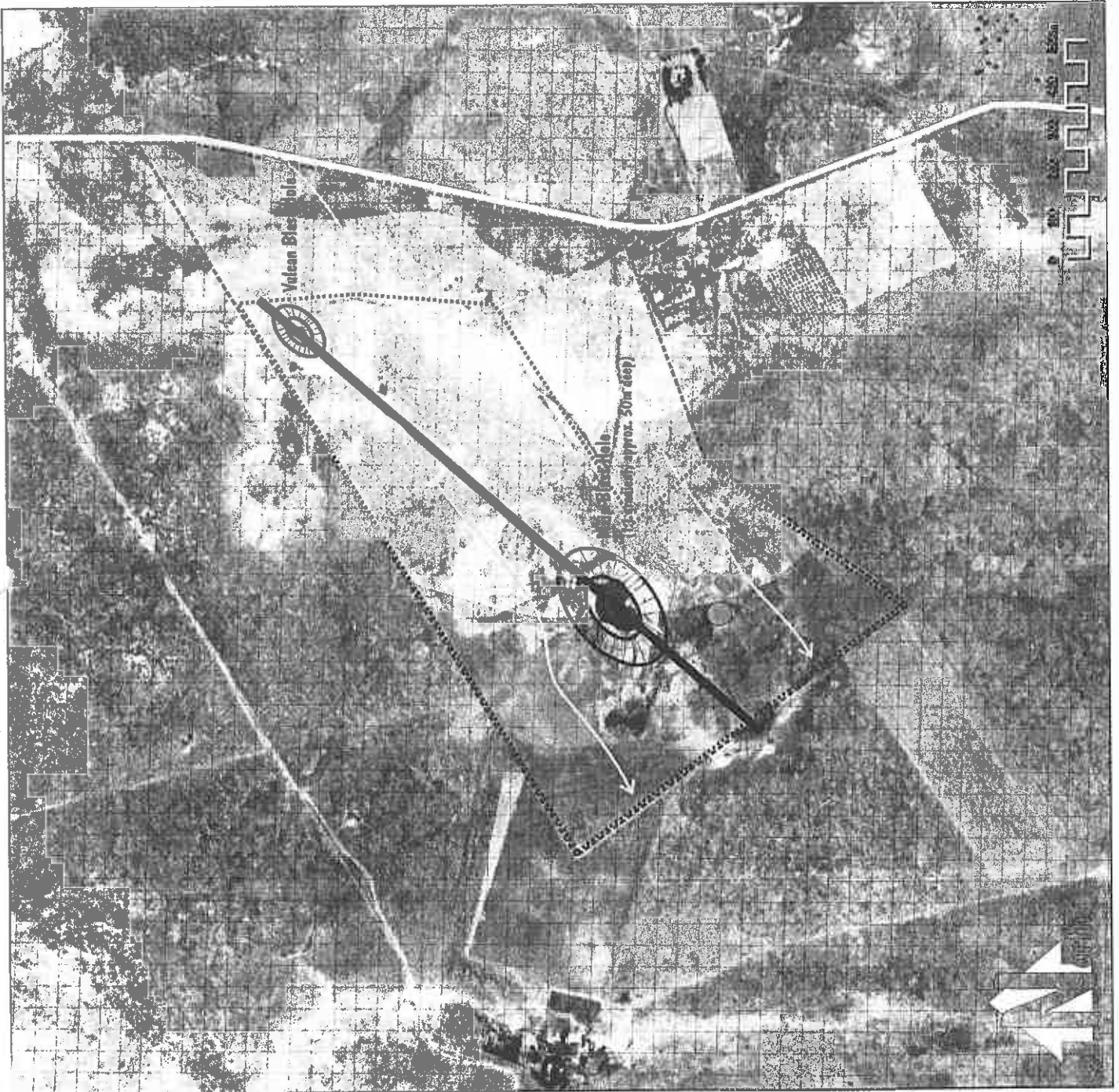
-  Tierberg shale / siltstone / sandstone
-  Dolerite
-  Kimberlite fissure

**Topography**

-  General slope of landscape with shallow gradient
-  1:1 gradient of blast hole.

**Hydrology**

-  Rain water pan - anthropological origin
-  Site boundary
-  Claims area
-  Public gravel road



# BLAAUWBOSCH MINE

EMPR

February 2002

## Map 3: Soils and vegetation

### Vegetation



Denuded land due to previous mining



Degraded Themeda veld

### Soils

Valsmivier form soils dominate the site. It is very erodible, and topsoil is bleached sandy clay.



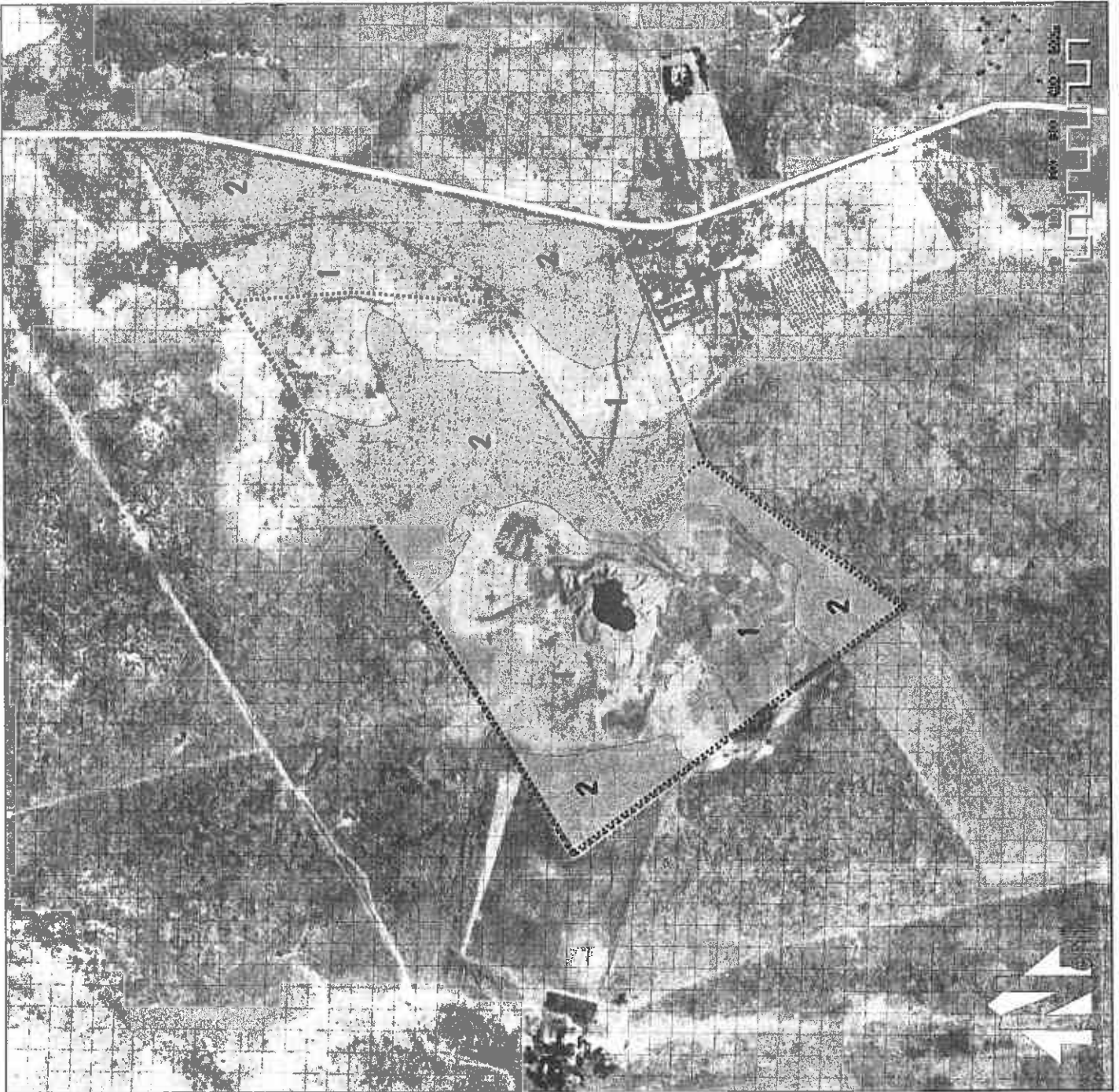
Site / farm boundary



Claims area



Public gravel road





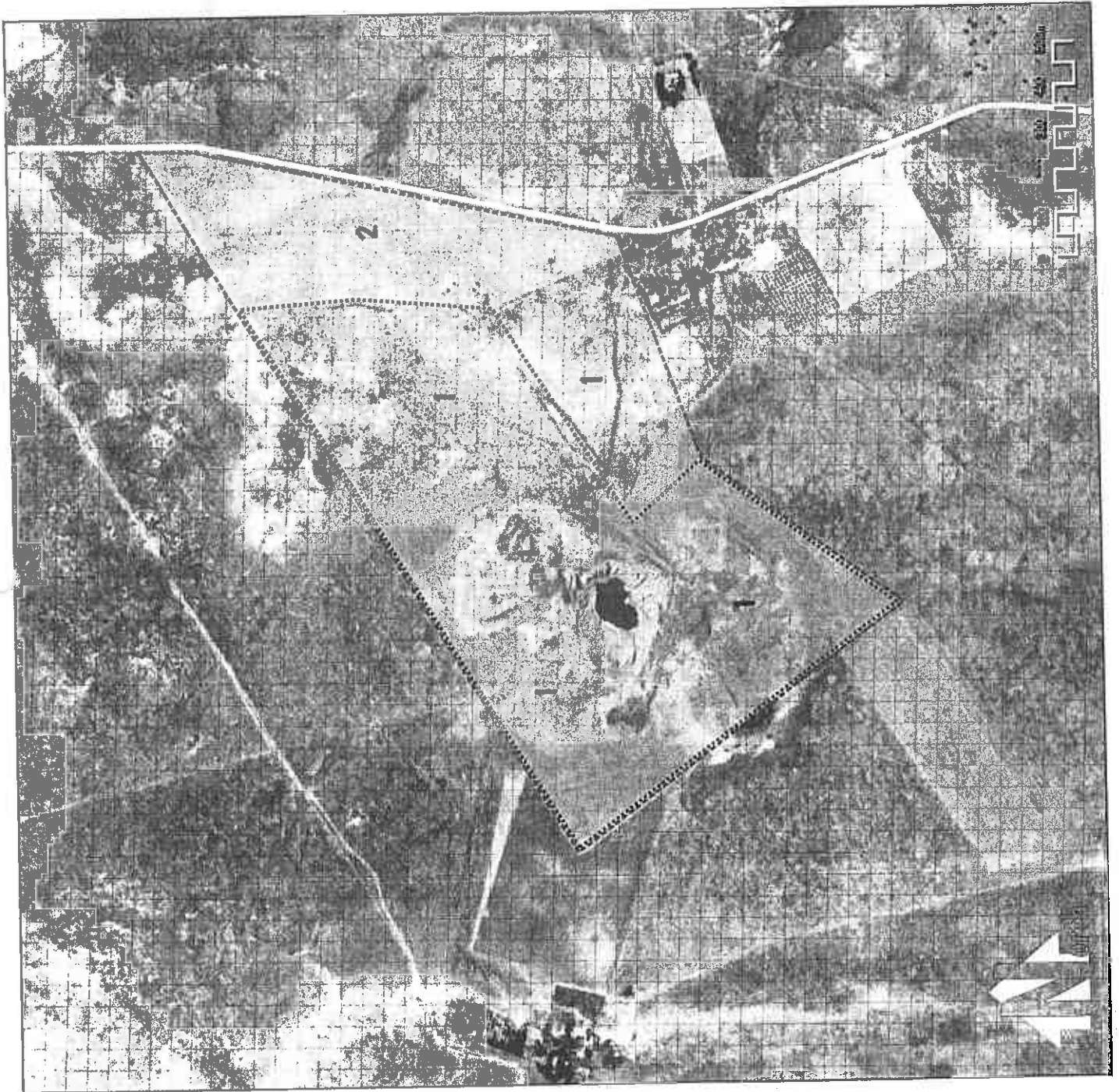
# BLAAUWBOSCH MINE

EMPR

February 2002

## Map 4: Pre-Mining Land Capability and land Use

### Existing Land use



## **APPENDICES**

- Appendix 1: Water Quality Samples – Test Results
- Appendix 2: Quote for Rehabilitation
- Appendix 3: ABSA Guarantees for Rehabilitation
- Appendix 4: Amelioration recommendations for the *Valsrivier* soils
- Appendix 5: Declarations of Interested and Affected Parties

P.O. Box 10166  
Beaconsfield  
Kimberley  
8300



To: Jurgen Streit  
Attention: Carlo Geel  
Dept. Water Affairs K  
Private Bag X 6101  
Kimberley  
8300

From: Senior Chemical Analyst  
Technology Services Internatio  
48 Sydney Street  
Kimberley  
8315

Laboratory No T0201

Ref:  
Tel., Fax: 0538315555  
Cell: 0837081191

Tebogo.Malope@eskom.co.za

Date: 2002-01-28

Page 1 of 1

**TEST REPORT**

Water from: Bloubospyp  
Sample Point:

Site:

Sample date: 2002-01-22

Project No: **4683**

Date Received: 2002-01-22

Analyte	Value	Unit	Minimum	Maximum	Method	Note
Ammonia	0.3	mg/l N			CS 508	
Calcium	* 675	mg/kg Ca			Sub contracted	Sub contracted
Chloride	* 5597	mg/l Cl			CS 503	
Conductivity	1816	mS/m @25 °C			CS 507	
Fluoride	4.8	mg/l F			CS 516	
Magnesium	* 500	mg/l Mg			CS 515	
Nitrate	2.0	mg/l N			CS 510	
OrthoPhosphate	0.69	mg/l P			CS 509	
pH	9.2	@ 25 °C			CS 506	
Potassium	38	mg/l K			CS 515	
Silicate	11	mg/l SiO2			HACH 8185-P529	
Sodium	* 4450	mg/l Na			CS 515	
Sulphate	* 5500	mg/l SO4			CS 511	
Tot Alkalinity	42	mg/l CaCO3			CS 501	

Remarks: Sample not in good condition.

Tests marked "Not SANAS Accredited" in this report are not included in the SANAS Accreditation Schedule for our Laboratory.  
Sub Contractor 1 : Technology Service International Main Laboratory Cleveland.

\* Exceeds standard limits. The results relate only to the specific sample tested.  
This report shall not be reproduced, except in full, without the written approval of Technology Services International.

TJ Malope - Technician

P.O. Box 10166  
Beaconsfield  
Kimberley  
8300



To: Jurgen Streit  
Attention: Carlo Geel  
Dept. Water Affairs K  
Private Bag X 6101  
Kimberley  
8300

From: Senior Chemical Analyst  
Technology Services Internatio  
48 Sydney Street  
Kimberley  
8315

Technology Services International  
Laboratory No T0201

Ref:  
Tel., Fax: 0538315555  
Cell: 0837081191

Tebogo.Malope@eskom.co.za

Date: 2002-01-28  
Page 1 of 1

**TEST REPORT**

Water from: Bloubos Site: Borehole  
Sample Point: Sample date: 2002-01-22  
Project No: 4684  
Date Received: 2002-01-22

Analyte	Value	Unit	Minimum	Maximum	Method	Note
Ammonia	<0.23	mg/l N			CS 508	
Calcium	102	mg/kg Ca			Sub contracted	Sub contracted
Chloride	71	mg/l Cl			CS 503	
Conductivity	101	mS/m @25 °C			CS 507	
Fluoride	0.43	mg/l F			CS 516	
Magnesium	62	mg/l Mg			CS 515	
Nitrate	15	mg/l N			CS 510	
OrthoPhosphate	3.3	mg/l P			CS 509	
pH	7.3	@ 25 °C			CS 506	
Potassium	3.8	mg/l K			CS 515	
Silicate	62	mg/l SiO2			HACH 8185-P529	
Sodium	24	mg/l Na			CS 515	
Sulphate	120	mg/l SO4			CS 511	
Tot Alkalinity	299	mg/l CaCO3			CS 501	

Remarks: Sample in good condition.

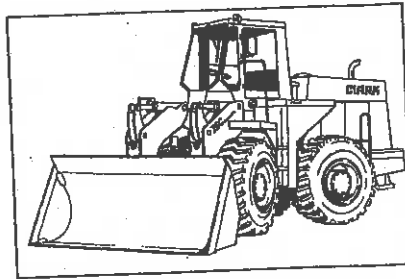
Tests marked "Not SANAS Accredited" in this report are not included in the SANAS Accreditation Schedule for our Laboratory.  
Sub Contractor 1: Technology Service International' Main Laboratory Cleveland.

\* Exceeds standard limits. The results relate only to the specific sample tested.  
This report shall not be reproduced, except in full, without the written approval of Technology Services International.

T.J. Malope Technician

A division of Eskom Enterprises (Pty) Ltd Registration 99/02671/07  
 This report is the property of Technology Services International (TSI) and is not to be used for any other purpose without the written approval of TSI. The results do not apply to any similar  
 identification have not been tested. D.R. Mostert (Non-executive) V.T.L. Ngubeni D.M. Ramaphosa (Non-executive)  
 Technology Research and Investigations (T-R-I) now trading as TSI, a division of Eskom Enterprises

**AUTO REPAIRS**  
**POSBUS 292**  
**BARKLY - WES**  
**8375**  
Tel. & Faks 053-5310681  
e-pos:autorepairs@kimberley.co.za



**KOPHIA DIAMANTE**  
**BLAAUWBOSCH DIAMANTMYN**

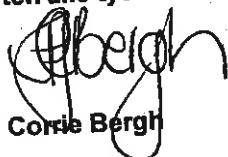
**KWOTASIE AANGEVRA VIR:**

A) BEVEILIGING VAN DIAMANTPYP  
Sloot van 600m lank, 1.5m diep, 1m breed en 'n wal van 1.5m reg rondom put

B) OPRUIMING VAN MYNTEREIN

	R 175,000.00
	BTW 24,500.00
<b>TOTAAL</b>	<b>R 199,500.00</b>

Baie dankie vir die geleentheid om te kwoteer. Wees verseker van ons beste diens ten alle tye.

  
Corrie Bergh

**AUTO REPAIRS**  
**P.O. BOX 292**  
**BARKLY WEST 8375**  
**TEL/FAX: 053-5310681/2/3**





Brokers  
Makelaars

HENDRIK CRAFFORD  
2<sup>ND</sup> FLOOR  
ABSA REGIONAL OFFICE  
80 BULTFONTEIN RD  
KIMBERLEY 8301  
P.O BOX 110829  
HADISON PARK 8306  
TELEPHONE (053) 839-5200  
FAX (053) 839-7608

HENDRIK CRAFFORD  
2DE VLOER  
ABSA STREEK KANTOOR  
BULTFONTEIN WEG 80  
KIMBERLEY 8301  
POSBUS 110829  
HADISON PARK 8306  
TELEFOON (053) 839-5200  
FAKS (053) 839-7608

21 January 2002

Attention: Mr. C Snyman

The Manager  
Kophia Diamonds (PTY) LTD  
P.O. Box 378  
Barkley Wes  
83758

Dear Mr C Snyman

## ENVIROMENTAL REHABILITATION – FUNDING

With reference to previous discussion we would like to present to your company the following presentation:

### 1. BACKGROUND

- No previous guarantees required for rehabilitation.
- Mine was purchased recently by your company.
- Previous owners did not make provision for rehabilitation.

### 2. SUGGESTION

#### 2.1. Blaauwbosch

- Estimated cost of rehabilitation R 200 000  
Current cost of rehabilitation plus provision for projected cost for the next five years.
- Current guarantee R 0
- We would suggest that your company make use of the Green Horizon Environmental Rehabilitation Company which is a umbrella Section 21 company approved by the Commissioner: Mining Taxation at SARS and the department of Mineral an Energy.

lid/member:SAFSA

ABSA Brokers (Pty) Limited / ABSA Makelaars (Edms) Beperk (Reg No 1970/02732/07)

Directors/Direkteure: C Erasmus (Chairman/Voorsitter) PJ Reyneke (Managing Director/Besturende Direkteur) FJ du Toit  
UF le Roux (Executive Director/Uitvoerende Direkteur) AS Swart J.P van der Merwe HR de W Wright

(05/00)

- If a amount of R 3 000 per month is saved for a period of five years and a return of 12% per annum, net, could be achieved the required amount of R 200 000 would have been saved.
- Benefit to Company is that the company is making provision for rehabilitation costs in a tax efficient manner. Due to the fact that premiums will be tax deductible if approved by SARS and return on funds is tax-free.

Annexure A. Quote: Old Mutual frontiers

## 2.2. New Elands

- Estimated cost of rehabilitation R 100 000  
Current cost of rehabilitation plus provision for projected cost for the next five years.
- Current guarantee R 0
- We would suggest that your company make use of the Green Horizon Environmental Rehabilitation Company which is a umbrella Section 21 company approved by the Commissioner: Mining Taxation at SARS and the department of Mineral an Energy.
- If a amount of R 1500 per month is saved for a period of five years and a return of 12% per annum, net, could be achieved the required amount of R 100 000 would have been saved.
- Benefit to Company is that the company is making provision for rehabilitation costs in a tax efficient manner. Due to the fact that premiums will be tax deductible if approved by SARS and return on funds is tax-free.

Annexure B. Quote: Old Mutual frontiers

## 3. PROCESS

1. The mine must put together a Mining Rehabilitation plan (ISO 4001). This plan outlines the mine's strategy in terms of rehabilitation and the funding thereof.
2. A cost analysis must be done in terms of the formula  $((A-B)/C)$  to estimate the size of the contribution to be made as premium. SARS formula, were A = the total current cost of rehabilitation, B= the total net balance of provision and C = the estimated life span (years) of the mining operation.
3. The ISO 4001, together with the cost analysis must be submitted to the Commissioner Mining Taxation at SARS for approval, as well as to the Director Minerals Development information.  
This must be accompanied by a letter from the mine indicating that the mine wishes to place the contributions with Green Horizons Environmental Rehabilitation Company(GHERC).
4. The commissioner will issue the mine with a document of approval authorizing the mine to make the contribution.
5. The GHERC Terms of Investment may now be completed and signed by the mine.

6. The Terms of Investment, a copy of approval document from SARS and the contribution or debit order may now be submitted to GERCH for acceptance thru the broker.

Should you require any further information please contact Attie Barnard at (053) 4973141 or (082) 4153988 or Hendrik Crafford at (083) 253 4012

Yours faithfully,

  
**HENDRIK CRAFFORD**  
**LEADER SALES : NORTHERN CAPE**

  
**ATTIE BARNARD**  
**BROKER**

# OLD MUTUAL INVESTMENT FRONTIERS

## Capital Portfolio



Investment proposal prepared for **BLAAUWBOSCH**  
 By **HENDRIK CRAFFORD**  
 On **21/01/2002**

PO Box 617, Howard Place, 7450  
 Jan Smuts Drive, Pinelands, 7405  
 Tel 0860 1000 98 Fax 0860 1000 83  
 E-Mail ifrontiers@oldmutual.com  
 Visit <http://www.ifrontiers.co.za>

### DESCRIPTION OF INVESTMENT

The Capital Portfolio offers a comprehensive and diversified range of funds that can be selected to construct a portfolio suitable for the individual investor.

### INVESTMENT DETAILS

INVESTMENT RECEIPT DATE	01/02/2002
TAX STATUS	Company
SCHEDULED REGULAR INVESTMENTS	R 3,000.00 Monthly
SCHEDULED START DATE	01/02/2002
ANNUAL ESCALATION	0 % p.a.
MONTH OF ESCALATION	January

### FUND ALLOCATION

#### SCHEDULED INVESTMENT

Selected Investment	Asset Mgt <sup>1</sup> Fee	% Of Initial Amount	Gross Investment Amount (R)	Admin <sup>2</sup> Fee (2.25%)	Investment Advice Fee (2.85%)	Net <sup>3</sup> Investment Amount (R)
SA Money Market Fund	0.50	50.00	1,500.00	33.75	42.75	1,423.50
US Dollar Money Market Fund	0.60	50.00	1,500.00	33.75	42.75	1,423.50
						<u>2,847.00</u>

#### NOTES:

- <sup>1</sup> Asset Management Fees are deducted prior to investment performance declaration.
- <sup>2</sup> For Unit Trust Funds, the Administration Fee has been increased by the Unit Trust Initial Fee.
- <sup>3</sup> A Buy/Sell Spread of 0.7% is assumed for Frontier Funds and Unit Trusts, this has not been deducted from the Net Investment Amount.

### ANNUAL INVESTMENT FEES

Administration Fees	1.17 % p.a.
Investment Review Fee	0.00 % p.a.

#### NOTES:

- <sup>1</sup> The Administration Fee and Investment Review Fee are not applicable to Fixed Bonds and Secured Index Bonds.
- <sup>2</sup> The Administration Fee is based on a sliding scale and is deducted monthly.
- <sup>3</sup> This is the annual rate applicable to the investment in the first month. This may change depending on the value of the funds.

## ILLUSTRATED VALUES

	Net Investment Amount (R)	Buy / Sell Spread	Closing Value (R)
Investment Options subject to Buy / Sell Spread	0.00	0.70%	0.00
Investment Options <b>not</b> subject to Buy / Sell Spread *	2,847.00		2,847.00
<b>Total</b>	<b>2,847.00</b>		<b>2,847.00</b>

\* Secured Index Bonds, Fixed Bonds, Secured Funds, Stabilised Investment Funds and all Money Market Funds are not subject to Buy/Sell spread.  
Unit Trust funds are subject to Buy/Sell spread which may vary daily. 0.7% has been assumed for this calculation.

## TOTAL ILLUSTRATED VALUES

After Year	Frontier Funds (6% p.a.) & Fixed Bonds	Frontier Funds (12% p.a.) & Fixed Bonds	Legal Restriction (5%)*
(Net Initial Investment)	2,847.00	2,847.00	
1	35,040.34	36,113.02	36,969.15
2	71,751.92	76,089.48	75,789.48
3	110,214.46	120,342.69	116,553.69
4	150,511.47	169,330.20	159,359.12
5	192,730.44	223,558.49	204,307.98

### NOTES:

\* The maximum amount that can be disinvested within the first 5 years (60 months) and any restricted period, is restricted to the return of the amount invested plus 5% compound growth per year. Any excess over this restricted amount will be available at the end of the 5 year (60 months) period together with any investment growth on this excess over the period.

<sup>1</sup> Illustrations shown are net of annual Administration and Investment Review fees and assumes that these fees do not change over the term of the investment.

<sup>2</sup> Fixed Bonds are projected at the actual yield.

<sup>3</sup> For all other investment options two rates of investment return have been used to illustrate the sensitivity of the investment values to the rate of return which the investment portfolios actually earn for the duration of the contract.

## IMPORTANT NOTES

1. This illustration is based on charges in force as at the date of illustration. Charges and other contract conditions can change from time to time. The actual charges applied will be those that are in force as at the date of deduction.
2. OLD MUTUAL can make no recommendation as to the suitability of the chosen range of investments. It is highly recommended that the investor seeks advice from a suitably qualified person, as individual circumstances and risk preferences will influence the choice of investment funds.
3. The application form and related documents together with the investment contract document will form the sole basis of the contract.
4. The net rates of 6% and 12% correspond to gross rates of investment return of approximately 7.80% and 14.40% respectively (before the deduction of management fee and tax).
5. If the investor has chosen to set up a schedule of additional investments, then all investment values, guarantees (if applicable) and maturity values are dependent on the investor continuing to make these scheduled investments.
6. Investments into international (asset swap) funds are subject to an upper limit. This limit may have been exceeded if the investor has other contracts with Investment Frontiers.
7. There are **no exit fees** when disinvesting from funds except for that of Fixed Bonds and Secured Index Bonds.

**Contacting Investment Frontiers :** If you have any queries regarding investments, or would like assistance in claiming thereunder, please contact your Broker or Personal Financial Adviser, Mint Financial Consultant, or contact the Investment Frontiers Service Centre directly on 0860 1000 98.

**Complaint Resolution Process :** Old Mutual provides a complaint resolution process which aims to address any dissatisfaction you may have with your transaction. You can write to our Centralised Complaint Administration Department at PO Box 201, Mutualpark, 7451, fax us at (021) 509 0506 or e-mail us at [speakyourmind@oldmutual.com](mailto:speakyourmind@oldmutual.com). In the unlikely event of a dispute that cannot be resolved, you have the right to contact the Life Assurance Ombudsman for assistance, by writing to: Ombudsman for Life Assurance, PO Box 45007, Claremont, 7735

8. The Investor has the option to withdraw from this investment within 30 days of notice of acceptance of the investment. Old Mutual may deduct the cost of benefits and investment losses incurred until the date of refund from the investment amount refunded. This option is not available where during the 30 day period : The investor has switched from the fund(s) originally invested in; any benefit has been paid or claimed; an Income Tax Certificate has been issued (Or such other requirements as may be determined by SARS in terms of practice or legislation); the relevant retirement fund which transferred the investment amount does not accept the refund.

### NOTES:

1. This quote is only valid if prepared using the latest version of FrontierIllustrator.
2. Please note that Old Mutual does not accept any liability whatsoever for incorrect quotations produced, as a result of any computer system problems.
3. The assets and agreements entered into by Old Mutual in respect of certain portfolio constituents are subject to governmental and regulatory factors. In the event and to the extent that any of these factors impact on the return generated by the assets and agreements, Old Mutual reserves the right to revise the benefit under a portfolio constituent accordingly.

## APPLICATION PROCESS

All correspondence must be faxed to Investment Frontiers at 0860 100 083/4. Confirmation of receipt of the fax, remains the responsibility of the sender.

To finalize investments, all requirements must be received by the Investment Frontiers Service Centre by 16h00.

This includes :

- (a) Fully completed application form
- (b) Payment method -  
Signed debit order, or  
Copy of A.S. receipt, or  
Copy of Standard Bank deposit slip.

The investment amount will be invested after all requirements have been met and the application has been accepted by Old Mutual, at the first investment opportunity and at the price applicable then.

**PLEASE NOTE THAT BACKDATING IS NOT ALLOWED UNDER ANY CIRCUMSTANCES.**

In instances where the money / requirements are received on a Saturday, the following week's prices will apply (This should specifically be noted for Fixed Bonds, where the prices are applicable from Monday to Friday).

**OLD MUTUAL INVESTMENT FRONTIERS**  
Confirmation of Investment Details



**CAPITAL PORTFOLIO**

Investment proposal prepared for **BLAAUWBOSCH**  
By **HENDRIK CRAFFORD**  
On **21/01/2002**

PO Box 617, Howard Place, 7450  
Jan Smuts Drive, Pinelands, 7405  
Tel 0860 1000 98 Fax 0860 1000 83  
E-Mail ifrontiers@oldmutual.com  
Visit <http://www.ifrontiers.co.za>

**FUND ALLOCATION**

**SCHEDULED INVESTMENT**

Selected Investment	Asset Mgt Fee	% Of Initial Amount	Gross Investment Amount (R)	Admin Fee (2.25%)	Investment Advice Fee (2.85%)	Net Investment Amount (R)
SA Money Market Fund	0.50	50.00	1,500.00	33.75	42.75	1,423.50
US Dollar Money Market Fund	0.60	50.00	1,500.00	33.75	42.75	1,423.50
						<u>2,847.00</u>

**ANNUAL INVESTMENT FEES**

Administration Fees	1.17 % p.a.
Investment Review Fee	0.00 % p.a.

I/We confirm and accept the above to be a true and correct summary of all the information used in producing the quotation accepted by myself/ourselves. I/We confirm that I/we have received the Statutory Notice under the Policyholder Protection Rules (Long-term Insurance) 2001, and that the intermediary has made the required disclosures on his/her own behalf and on behalf of the insurer.

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ / \_\_\_\_\_

\_\_\_\_\_  
Investor Signature

\_\_\_\_\_  
Name in print



# OLD MUTUAL INVESTMENT FRONTIERS

## Capital Portfolio



Investment proposal prepared for **NEW ELANDS**  
 By **HENDRIK CRAFFORD**  
 On **21/01/2002**

PO Box 617, Howard Place, 7450  
 Jan Smuts Drive, Pinelands, 7405  
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### DESCRIPTION OF INVESTMENT

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### INVESTMENT DETAILS

INVESTMENT RECEIPT DATE	<b>01/02/2002</b>
TAX STATUS	<b>Company</b>
SCHEDULED REGULAR INVESTMENTS	<b>R 1,500.00 Monthly</b>
SCHEDULED START DATE	<b>01/02/2002</b>
ANNUAL ESCALATION	<b>0 % p.a.</b>
MONTH OF ESCALATION	<b>January</b>

### FUND ALLOCATION

#### SCHEDULED INVESTMENT

Selected Investment	Asset Mgt <sup>1</sup> Fee	% Of Initial Amount	Gross Investment Amount (R)	Admin <sup>2</sup> Fee (2.25%)	Investment Advice Fee (2.85%)	Net <sup>3</sup> Investment Amount (R)
SA Money Market Fund	0.50	50.00	750.00	16.88	21.38	711.74
US Dollar Money Market Fund	0.60	50.00	750.00	16.88	21.38	711.74
						<u>1,423.48</u>

#### NOTES:

- <sup>1</sup> Asset Management Fees are deducted prior to investment performance declaration.
- <sup>2</sup> For Unit Trust Funds the Administration Fee has been increased by the Unit Trust Initial Fee.
- <sup>3</sup> A Buy/Sell Spread of 0.7% is assumed for Frontier Funds and Unit Trusts, this has not been deducted from the Net Investment Amount.

### ANNUAL INVESTMENT FEES

Administration Fees	1.17 % p.a.
Investment Review Fee	0.00 % p.a.

#### NOTES:

- <sup>1</sup> The Administration Fee and Investment Review Fee are not applicable to Fixed Bonds and Secured Index Bonds.
- <sup>2</sup> The Administration Fee is based on a sliding scale and is deducted monthly
- <sup>3</sup> This is the annual rate applicable to the investment in the first month. This may change depending on the value of the funds.

## ILLUSTRATED VALUES

	Net Investment Amount (R)	Buy / Sell Spread	Closing Value (R)
Investment Options subject to Buy / Sell Spread	0.00	0.70%	0.00
Investment Options <b>not</b> subject to Buy / Sell Spread *	1,423.50		1,423.50
<b>Total</b>	<b>1,423.50</b>		<b>1,423.50</b>

\* Secured Index Bonds, Fixed Bonds, Secured Funds, Stabilised Investment Funds and all Money Market Funds are not subject to Buy/Sell spread.  
Unit Trust funds are subject to Buy/Sell spread which may vary daily. 0.7% has been assumed for this calculation.

## TOTAL ILLUSTRATED VALUES

After Year	Frontier Funds (6% p.a.) & Fixed Bonds	Frontier Funds (12% p.a.) & Fixed Bonds	Legal Restriction (5%)*
(Net Initial Investment)	1,423.50	1,423.50	18,484.57
1	17,520.17	18,056.51	37,894.74
2	35,875.96	38,044.74	58,276.85
3	55,107.23	60,171.35	79,679.56
4	75,255.73	84,665.10	102,153.99
5	96,365.22	111,779.25	

### NOTES:

\* The maximum amount that can be disinvested within the first 5 years (60 months) and any restricted period, is restricted to the return of the amount invested plus 5% compound growth per year. Any excess over this restricted amount will be available at the end of the 5 year (60 months) period together with any investment growth on this excess over the period.

<sup>1</sup> Illustrations shown are net of annual Administration and Investment Review fees and assumes that these fees do not change over the term of the investment.

<sup>2</sup> Fixed Bonds are projected at the actual yield.

<sup>3</sup> For all other investment options two rates of investment return have been used to illustrate the sensitivity of the investment values to the rate of return which the investment portfolios actually earn for the duration of the contract.

## IMPORTANT NOTES

1. This illustration is based on charges in force as at the date of illustration. Charges and other contract conditions can change from time to time. The actual charges applied will be those that are in force as at the date of deduction.
2. OLD MUTUAL can make no recommendation as to the suitability of the chosen range of investments. It is highly recommended that the investor seeks advice from a suitably qualified person, as individual circumstances and risk preferences will influence the choice of investment funds.
3. The application form and related documents together with the investment contract document will form the sole basis of the contract.
4. The net rates of 6% and 12% correspond to gross rates of investment return of approximately 7.80% and 14.40% respectively (before the deduction of management fee and tax).
5. If the investor has chosen to set up a schedule of additional investments, then all investment values, guarantees (if applicable) and maturity values are dependent on the investor continuing to make these scheduled investments.
6. Investments into international (asset swap) funds are subject to an upper limit. This limit may have been exceeded if the investor has other contracts with Investment Frontiers.
7. There are **no exit fees** when disinvesting from funds except for that of Fixed Bonds and Secured Index Bonds .

**Contacting Investment Frontiers :** If you have any queries regarding investments, or would like assistance in claiming thereunder, please contact your Broker or Personal Financial Adviser, Mint Financial Consultant, or contact the Investment Frontiers Service Centre directly on 0860 1000 98.

**Complaint Resolution Process :** Old Mutual provides a complaint resolution process which aims to address any dissatisfaction you may have with your transaction. You can write to our Centralised Complaint Administration Department at PO Box 201, Mutualpark, 7451, fax us at (021) 509 0506 or e-mail us at [speakyourmind@oldmutual.com](mailto:speakyourmind@oldmutual.com). In the unlikely event of a dispute that cannot be resolved, you have the right to contact the Life Assurance Ombudsman for assistance, by writing to: Ombudsman for Life Assurance, PO Box 45007, Claremont, 7735

8. The Investor has the option to withdraw from this investment within 30 days of notice of acceptance of the investment. Old Mutual may deduct the cost of benefits and investment losses incurred until the date of refund from the investment amount refunded. This option is not available where during the 30 day period : The investor has switched from the fund(s) originally invested in; any benefit has been paid or claimed; an Income Tax Certificate has been issued (Or such other requirements as may be determined by SARS in terms of practice or legislation); the relevant retirement fund which transferred the investment amount does not accept the refund.

### NOTES:

1. This quote is only valid if prepared using the latest version of FrontierIllustrator.
2. Please note that Old Mutual does not accept any liability whatsoever for incorrect quotations produced, as a result of any computer system problems.
3. The assets and agreements entered into by Old Mutual in respect of certain portfolio constituents are subject to governmental and regulatory factors. In the event and to the extent that any of these factors impact on the return generated by the assets and agreements, Old Mutual reserves the right to revise the benefit under a portfolio constituent accordingly.

## APPLICATION PROCESS

All correspondence must be faxed to Investment Frontiers at 0860 100 083/4. Confirmation of receipt of the fax remains the responsibility of the sender.

To finalize investments, all requirements must be received by the Investment Frontiers Service Centre by 16h00.

This includes :

- (a) Fully completed application form
- (b) Payment method -  
Signed debit order, or  
Copy of A.S. receipt, or  
Copy of Standard Bank deposit slip.

The investment amount will be invested after all requirements have been met and the application has been accepted by Old Mutual, at the first investment opportunity and at the price applicable then.

PLEASE NOTE THAT BACKDATING IS NOT ALLOWED UNDER ANY CIRCUMSTANCES.

In instances where the money / requirements are received on a Saturday, the following week's prices will apply (This should specifically be noted for Fixed Bonds, where the prices are applicable from Monday to Friday).

**OLD MUTUAL INVESTMENT FRONTIERS**  
**Confirmation of Investment Details**



**CAPITAL PORTFOLIO**

Investment proposal prepared for **NEW ELANDS**  
 By **HENDRIK CRAFFORD**  
 On **21/01/2002**

PO Box 617, Howard Place, 7450  
 Jan Smuts Drive, Pinelands, 7405  
 Tel 0860 1000 98 Fax 0860 1000 83  
 E-Mail ifrontiers@oldmutual.com  
 Visit <http://www.ifrontiers.co.za>

**FUND ALLOCATION**

**SCHEDULED INVESTMENT**

Selected Investment	Asset Mgt Fee	% Of Initial Amount	Gross Investment Amount (R)	Admin Fee (2.25%)	Investment Advice Fee (2.85%)	Net Investment Amount (R)
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						<u>1,423.48</u>

**ANNUAL INVESTMENT FEES**

Administration Fees 1.17 % p.a.  
 Investment Review Fee 0.00 % p.a.

I/We confirm and accept the above to be a true and correct summary of all the information used in producing the quotation accepted by myself/ourselves. I/We confirm that I/we have received the Statutory Notice under the Policyholder Protection Rules (Long-term Insurance) 2001, and that the intermediary has made the required disclosures on his/her own behalf and on behalf of the insurer.

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ / \_\_\_\_\_

\_\_\_\_\_  
 Investor Signature

\_\_\_\_\_  
 Name in print



Founding 1899  
50 years of independence 2001

# Potchefstroomse Universiteit

## vir Christelike Hoër Onderwys

Potchefstroom University  
for Christian Higher Education

Private bag X6001 Potchefstroom 2520  
Tel (018) 299 1111 Fax (018) 299 2799  
<http://www.puk.ac.za>

Me Mandy van der Westhuizen  
Van Riet and Louw Landscape Architects  
347 Charles st. Brooklyn  
Pretoria  
0181

Tel (018) 299 2515  
Fax (018) 299 2503

12 February 2002

Dear Mandy

### AMELIORATION RECOMMENDATION FOR THE PROJECT IN THE FREE STATE

Herewith the analysis and recommendation as requested.

**Table 1. Results of the 1:2 water extraction procedure**

Macro-elements										
Sample no.	Ca	Mg	K	Na	P	SO <sub>4</sub>	NO <sub>3</sub>	NH <sub>4</sub>	Cl	HCO <sub>3</sub>
Millimol per litre										
V3558	1.89	1.50	0.3	21.78						0.5

Micro-elements and other data								P-BRAY 1
Sample no.	Fe	Mn	Cu	Zn	B	pH	EC	
Micromol per litre								PPM
V3558	ND	0.07	0.80	ND	32	6.67	1.67	

From the results of the 1:2 extraction procedure (Table 1, please note that I converted the data from a 1:10 to 1:2 analysis and changed the units from mg kg<sup>-1</sup> to mmol l<sup>-1</sup>) that provides a good indication of the elemental concentrations soluble in water and therefore available for absorption by plants the following:

- i) despite the fact that the nitrogen (NO<sub>3</sub>, nitrate) and phosphorous (P) concentrations were not quantified in general the sample analysed would seem to be severely nutrient poor in terms of the essential macro-elemental concentrations,
- ii) more specifically the potassium (K) concentration is way to low as it should be closer to 0.8 mmol l<sup>-1</sup>. This deficiency is exacerbated by the high sodium (Na) concentration that typifies the sample,
- iii) consequently the sample in question can be described as being typical for a despersive soil as is normally associated with kimberlite (diamond carrying material). These soils are very prone to water erosion, as during a period of rain

- each of the Na molecules can adsorb forty water molecules around it which allows it to run like sugar as the friction between particles has been totally eliminated,
- iv) the problems associated with soils that contain high Na concentrations reach much further than the above mentioned physical slope instability as it causes physiological drought in plants (i.e. exosmosis due to its low water potential, , i.e. because of the excessive elemental concentrations within the growing medium water will tend to move out of the plants),
  - v) also please note that the high electrical conductivity (EC) value that typifies the medium is not indicative of a good nutrient status but to a large extent the consequence of the high Na concentration.

**Table 2. Results of the ammonium acetate extraction procedure**

Nutrient status								
Sample no.	Ca	Mg	K	Na	P	pH(H <sub>2</sub> O)	pH(KCl)	EC (mS/m)
	(mg/kg)							
	6050	1714	490	2732	2.7	8.67		

Exchangeable cations									
Sample no.	Ca	Mg	K	Na	CEC	S-value	Base saturation (%)	pH(H <sub>2</sub> O)	pH(KCl)
	(me/100g)								
V3558	30.1	14.1	1.12	11.8	27.55	57.12			

From the results obtained from the ammonium acetate extraction procedure (Table 2), that provides a indication of the total elemental concentrations in the medium, it can be seen that:

- i) the exchangeable cation ratios deviate significantly from the norm percentages of, Ca 65: Mg 25: K 8: Na 2, by being 52 : 25: 2 : 21. These results confirm that the K concentration in the medium is to low as well as the Na concentration being more than twenty fold what it should be,
- ii) the pH (H<sub>2</sub>O) also indicate that the pH of the medium is very alkaline and this potentially eliminates any other concerns such as heavy metal toxicity,
- iii) the cation exchange capacity (CEC) for the sample fall within the 20 to 50 cmol(+) kg<sup>-1</sup> range, this is to be expected from a material typified by such a high clay percentage (see Table 3).

**Table 3. Results of the particle size distribution analysis.**

Sample no.	> 2 mm (%)	Sand	Slit	Clay
		(% < 2 mm)		
V3558		35.8	16.2	48.0

From the results of the particle size distribution analysis it is evident that:

- i) as is typical for kimberlitic material the sample is typified by a very high clay content,
- ii) the high sand fraction will also render the material very prone to high infiltration rates that will further limit plant establishment.

In light of the above mentioned I would recommend that:

- i) the slopes of the current area be reduced or modified in some way that it does not exceed twenty degrees,
- ii) the area in question receive at least forty tons of organic material per hectare (well cured kraal manure will do well) to be worked in to a depth not exceeding 30cm (to create some adsorption surfaces),
- iii) the area receive 2 tons of ammonium sulphate and 1 ton of super phosphate per hectare (to acidify the pH, and help with initial plant establishment),
- iv) post emergence the area receive 350kg 3:1:5 (38) (with K as  $KNO_3$ ) to address the K and  $NO_3$  deficiencies.

Please do not hesitate to contact me for more information or if some further clarification is required.

Yours sincerely



Prof L van Rensburg

Sub-program leader: Rehabilitation and sustainable management



ADDRESS: BLOUBOSFONTEIN

BUS 70

BOSHOF

8340

TEL NO: 083 316 8924

FAX NO: \_\_\_\_\_

CELL: \_\_\_\_\_

THE DIRECTOR : MINERAL DEVELOPMENT  
DEPARTMENT OF MINERALS AND ENERGY  
PRIVATE BAG X 33  
WELKOM  
9460

Sir,

PROPOSED MINING/PROSPECTING OPERATIONS OF KOPHIA

DIAMONDS (PTY) LTD IN RESPECT OF THE MINING/

PROSPECTING FOR DIAMONDS : THE FARM(S) : \_\_\_\_\_

BLAAUBOSCHFONTEIN 229 AND CATHERINE'S FANCY 831

MAGISTERIAL DISTRICT OF BOSHOF.

I, the undersigned, P. J. BOTHA.....



hereby declare that I, as an affected / interested / concerned party relating to the above matter, have no objection against the abovementioned Company's / party's proposed mining/prospecting operations.

I also declare that I have no objection against the (i) issuing of a ~~mining permit / prospecting permit~~ / mining license by you and (ii) the impacts such proposed mining/prospecting operations may have on the surface of land and the environment, and (iii) the approval of the aforesaid Company's / party's environmental management programme (which programme dated FEBRUARY 2002... I have duly perused and which was, submitted to you by the relevant applicant).

Yours faithfully


P. J. Botha  
DATE: \_\_\_\_\_  
/AF/PROFORMA/IPC/CONSENT

ADDRESS: Mrs B.L. Bosman  
Blouboswes  
Boshof  
8340  
TEL NO: 053232 - 2740  
FAX NO: \_\_\_\_\_  
CELL: 0828066616

THE DIRECTOR : MINERAL DEVELOPMENT  
DEPARTMENT OF MINERALS AND ENERGY  
PRIVATE BAG X 33  
WELKOM  
9460

Sir,

PROPOSED MINING/PROSPECTING OPERATIONS OF KOPHIA  
DIAMONDS (PTY) LTD IN RESPECT OF THE MINING/  
PROSPECTING FOR DIAMONDS : THE FARM(S) : \_\_\_\_\_  
BLAAUBOSCH FONTEIN 229 AND CATHERINE'S, FANCY 831  
MAGISTERIAL DISTRICT OF BOSHOF

I, the undersigned, BERTIE LANBERTUS BOSMAN  




hereby declare that I, as an affected / interested / concerned party relating to the above matter, have no objection against the abovementioned Company's / ~~party's~~ proposed mining/~~prospecting~~ operations.

I also declare that I have no objection against the (i) issuing of a ~~mining permit / prospecting permit~~ / mining license by you and (ii) the impacts such proposed mining/~~prospe~~cting operations may have on the surface of land and the environment, and (iii) the approval of the aforesaid Company's / ~~party's~~ environmental management programme (which programme dated FEBRUARY 2002 I have duly perused and which was, submitted to you by the relevant applicant).

Yours faithfully

  
DATE: 13/02/2002  
IAF/PROFORMA/IAP CONSENT

## **Blaauwbosch Diamond Mine Mineralization**

*(Estimated expenditure versus revenue at production of 3000 tons per month)*

- According to records, the grade at the above mine is 30 carats per 100 tons.
- At a production rate of 3000 tons per month the yield will be 900 carats per month.
- At an average price of \$55,00 per carat (at an exchange rate of \$1,00 = R10,00) the expected revenue will be R495 000,00 per month.

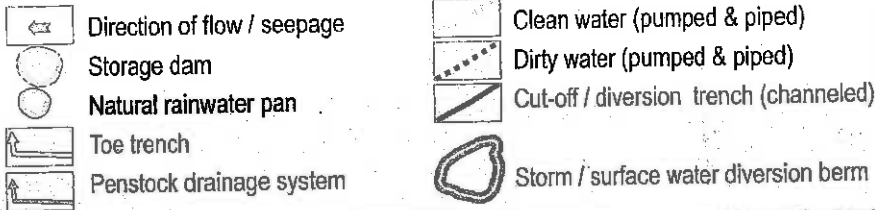
Estimated monthly expenditure / operational costs are as follows:

▪ Wages and salaries:	R 90000
▪ Diesel and oil:	R 18000
▪ Explosives and accessories:	R 20000
▪ Eskom power:	R 12000
▪ Surveying fees:	R 3000
▪ Consumables:	R 17000
▪ Drillsteel etc:	R 15000
▪ Petty cash:	R 5000
▪ Miscellaneous:	R 20000
<b>TOTAL</b>	<b>R200000</b>

Therefore, the estimated profit before tax is R295 000,00.

# MOVEMENT OF WATER

- ☉ Potable water pumped from borehole to mine storage tanks for domestic use
- ☉ Water pumped from borehole to storage dam to augment supply
- ☉ De-watering of blast hole - continually pumped to storage dam
- ☉ De-watering of main shaft - continually pumped to storage dam
- ☉ Collection of storm water and surface runoff in diversion trenches and berms - channeled to storage dam
- ☉ Collection of dirty water from slimes dam via toe trench and penstock system - channeled to storage dam
- ☉ Recycled water pumped from storage dam to processing plant for re-use
- ☉ Process water / slimes pumped to slimes dam



## CO-ORDINATES (Catherine's Fancy)

- A: Y: -145,96; X: -2,17
- B: Y: -201,79; X: +246,47
- C: Y: +172,31; X: +296,06
- D: Y: +167,40; X: +231,58
- E: Y: +142,80; X: +158,12
- F: Y: +6,90; X: +138,36
- G: Y: -29,14; X: +133,12
- H: Y: -16,64; X: +76,93

## CO-ORDINATES (Portion 4 of Blaauwboschfontein)

- a Y: -5806,1; X: +2704,2
- b Y: -5803,1; X: +3176,7
- c Y: -5149,1; X: +6270,9
- d Y: -3397,1; X: +6928,1
- e Y: -2989,5; X: +6370,6
- f Y: -4751,7; X: +5266,9
- g Y: -4668,5; X: +4339,2
- h Y: -4410,8; X: +3607,9

**Blouboswes 1908**  
Landuse: grazing

**Catherines Fancy No.831**  
Claim Area  
85.6ha

Stormwater diversion trench  
Around blast hole - energy  
dissipation measures at all  
discharge points.

Existing tailings dumps to be  
used exclusively as reprocess

New tailings dump (surface  
area)

Additional slimes dam if

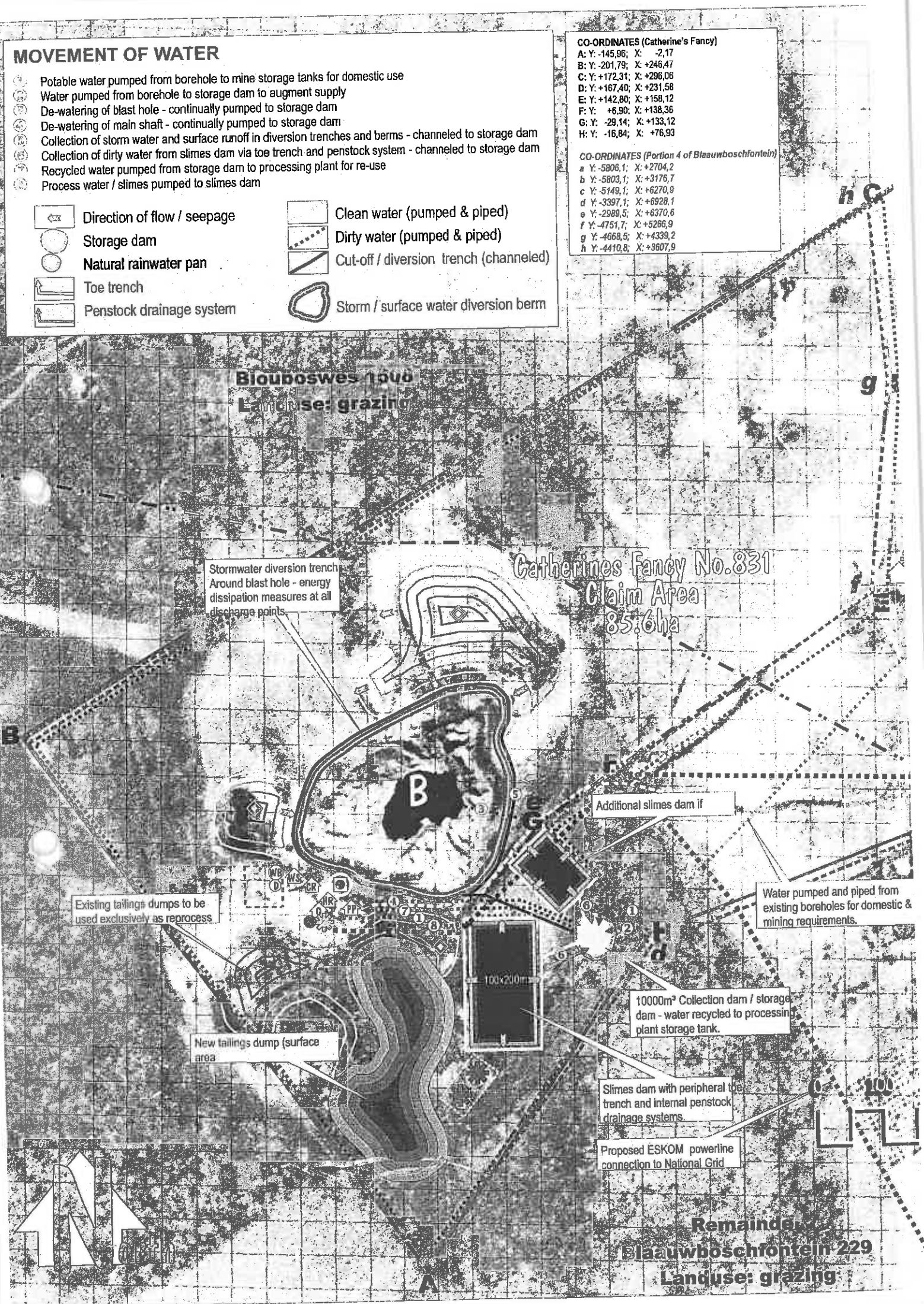
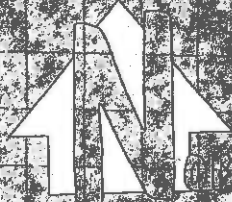
Water pumped and piped from  
existing boreholes for domestic &  
mining requirements.

10000m<sup>3</sup> Collection dam / storage  
dam - water recycled to processing  
plant storage tank.

Slimes dam with peripheral toe  
trench and internal penstock  
drainage systems.

Proposed Eskom powerline  
connection to National Grid

**Remainder  
Blaauwboschfontein 229**  
Landuse: grazing





Demolition & removal of all mine specific surface infrastructure, include workshop / wash bay / headgear / hoist room / compressor rooms / processing plant and peripheral infrastructure. All building rubble to be removed from site and disposed of at an approved disposal site. Shafts to be made safe to DMEA approval.

Blast holes to be made safe with diversion / cut-off trench, berm and 1,6m security fence to DMEA approval. Blast holes not to be backfilled unless such are no longer economically viable.

Tailings and slimes area to be reshaped to 18 degree gradient and revegetated. (Contours are for illustrative purposes only and do not represent final shapes, heights or gradients).

All trenches, excavations diversion ditches and stor dams to be backfilled and compacted to original level

