the dme
Department:
Minerals and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X6076, Port Elizabeth 6000,
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Enquiries: D.A. Watkins
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Reference: EC30/5/1/2/3/2/1(0243)EM
Date: 24 July 2009

SA HERITAGE RESOURCES AGENCY
RECEIVED
18 MAY 2010

South African Heritage Resources Agency
P.O. Box 759
EAST LONDON
5200

ATTENTION: MR. T. LUNGILE

Case ID: 2454

Sir

CONSULTATION IN TERMS OF SECTION 40 OF THE MPRDA OF 2002: SCOPING REPORT FOR SAND MINING ON REMAINDER OF ERF 1948, WALMER, DIVISION OF PORT ELIZABETH

1. Attached herewith, please find a copy of the Scoping Report received from Inzulu Mining Company (Pty) Ltd.

2. Please forward any written comments or requirements your department may have in this regard, to this office no later than **23 August 2009.** Failure to do so, will lead to the assumption that your department has no objection(s) or comments with regard to the said documents.

3. Consultation in this regard has also been initiated with other relevant State Departments.

4. Please use the reference numbers as indicated in all future correspondence.

5. Your co-operation is appreciated.

Yours faithfully

REGIONAL MANAGER
EASTERN CAPE

REGIONAL MANAGER
MINERALS AND ENERGY
EASTERN CAPE REGION
PRIVATE BAG / PRIVAATSAK X6076
2009 -09- 15
PORT ELIZABETH, 6000
STREEKBESTUURDER
MINERALE EN ENERGIE
OOS-KAAPSTREEK

243mr

SCOPING REPORT

INZULU MINING CO (PTY) LTD

SUBMITTED IN SUPPORT OF AN APPLICATION FOR A MINING RIGHT IN TERMS OF SECTION 22 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002), COVERING A PORTION OF THE REMAINING EXTENT OF ERF 1948, MAGISTERIAL DISTRICT OF PORT ELIZABETH.

EASTERN CAPE

JULY 2009

Future Mining Consultants

Contact details for the consultant are as follows:
Future Mining Consultants:
Postal Address: PO Box 53287, Wierda Park, 0149
Tel: 083 575 7671
Fax: 086 691 2411
E-mail: rich08@absamail.co.za

Please contact the above consultant with regards to all correspondence regarding this document.

CONTENTS:

Tables and Figures

WORD DEFINITIONS:

In this document, unless otherwise indicated, the following words will have the meanings as indicated herein:

Word:	Definition:
Act (The Act)	Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002)
ARC – AGIS	Agricultural Research Council's Agricultural Geo-referenced Information System.
ARC – ISCW	Agricultural Research Council Institute for Soil, Climate and Water.
Archaeological	Material remains resulting from human activities which are in a state of disuse and are in, or on, land and which are older than 60 years, including artefacts, human and hominid remains, and artificial features and structure.
Authority	National, regional or local authority, which has decision-making role or interest in the development
Best Practicable Environmental Option (BPEO)	BPEO is the outcome of a systematic consultative and decision-making procedure that emphasizes the protection of the environment across land, air and water. It establishes, for a given set of objectives, the option that provides the most benefit or least damage to the environment as a whole at an acceptable cost in the long term and as well as the short term.
BID	Background Information Document
Biodiversity	This refers to both the variety of different species of plants and animals, as well as genetic variability within species, which is essential in maintaining life-sustaining ecosystems.
Biome	A complex of communities of very wide extent, characterised by distinctive vegetation and climate.
Borehole	A hole drilled for the purposes of prospecting i.e. extracting a sample of soil or rock chips by pneumatic, reverse air circulation percussion drilling, or any other type of probe entering the surface of the soil.
CARA	The Conservation of Agricultural Resources Act, 1989
Cultural resources	The physical elements of both the built and natural environment, which are integral to a sense of shared identity.
DEAT	Department of Environmental Affairs and Tourism
Development	This is a broad term which refers to actions taken by individuals, communities, industry or government aimed at improving quality of life and fulfilling human potential. Measures of development include average income per person and reduced levels of poverty, unemployment and child morality.

Word:	Definition:
Disturbance	Any event or series of events that disrupts ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment.
DME	Department of Minerals and Energy
DWAF	The Department of Water Affairs and Forestry – both national office and their various regional offices, which are divided across the country on the basis of water catchment areas.
EAP	Environmental Assessment Practitioner
EIA	An Environmental Impact Assessment as contemplated in Section 38(1) (b)of the Act
EMP	An Environmental Management Plan as contemplated in Regulation 52 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).
Endemic species	Species with a distribution restricted to specific geographical areas. Endemism may occur on local, regional, sub continental or continental scales. Local endemism is usually associated with particular habitat requirements.
ENPAT	Environmental Potential Atlas
Environment	The external circumstances conditions and objects that affect the existence and development of an individual, organism or group. These circumstances include biophysical, social, economic, historical, cultural and political aspects.
Environmental impacts	The consequences of environmental aspects on environmental resources of particular value or sensitivity.
Environmental incident	◆ Any action undertaken (or omitted) by the proponent or his duly appointed representatives (e.g. contractors) that results in overly/unnecessary disturbance or damage to the environment. ◆ Any action undertaken (or omitted) by the proponent or his duly appointed representatives (e.g. contractors) that could lead to (has potential for) overly/unnecessary disturbance or damage to the environment. ◆ Non adherence to environmental legal requirements/laws (including the stipulations of authorizations issued in respect of a proposed activity e.g. those contained in a Record of Decision).
Environmental Officer	Independent environmental consultant appointed to monitor compliance with the EMP.
Erosion	A process that involves the wearing away of the land surface by mechanical or chemical action.
Fauna	All living biological creatures, usually capable of motion, including insects and predominantly of protein-based consistency.
Feasible	Acceptable, capable of being used or implemented successfully, without unacceptably damaging the environment.

Word:	Definition:
Fence	A physical barrier in the form of posts and barbed wire and/or "Silex" or any other concrete construction, ("palisade"- type fencing included), constructed with the purpose of keeping humans and animals within or out of defined boundaries.
Flora	All living plants, grasses, shrubs, trees, etc., usually incapable of easy natural motion and capable of photosynthesis.
GOSP	Gauteng Open Surface Plan
Ground water	All subsurface water occupying voids within a geological medium.
Habitat	The natural environment of an organism. The living space occupied by an organism. Physical surroundings in which an organism is likely to be found.
House	Any residential dwelling of any type, style or description that is used as a residence by any human being.
I&AP	Interested and/or affected party
Infrastructure	Refers to permanent physical structures such as roads, storm water drains and electricity lines.
Land-use	The actual or permitted activities on a defined piece of land.
MAMSL	Meters above mean sea level
MAP	Mean Annual Precipitation
Mitigation measures	Mitigation measures encompass all actions taken to eliminate offset or reduce potentially adverse environmental impacts to acceptable levels (World Bank, 1999:1).
MPRDA Regulation	Mineral and Petroleum Resources Development Regulation in terms of Government Notice R527, published on 23 April 2004.
NDA	National Department of Agriculture
NEMA	National Environmental Management Act (Act 107 of 1998)
NWA	National Water Act, Act 36 of 1998
Pit	Any open excavation
Pollution	The introduction of substances into the environment, which can have a negative effect on human health or the quality of the environment.
"Porrel"	The term used for the sludge created at alluvial diamond diggings where the alluvial gravels are washed and the diamonds separated in a water-and-sand medium.
Project activities	Those activities or actions of a project which are likely to give rise to an impact on the environment.

Word:	Definition:
Proponent	An individual and/or organisation that is of the intention to undertake an activity identified in terms of Section 21 of the Environmental Conservation Act, 1989 (Act no. 73 of 1989). Typically a proponent, ◆ stands to benefit directly from the proposed activity (e.g. a private developer gaining financially), or ◆ is duly sanctioned in terms of its legal mandate (e.g. a government department) to undertake such activities for the attaining of its objectives.
Red data species	Species of animals and plants recognized internationally as having a high conservation value or which are being threatened through natural or unnatural causes.
Resource	Any goods, services or environmental conditions which may have the potential to enhance social well being.
Risk	The scientific judgement of probability and significance of harm to the environment.
ROD	Record of Decision
SAHRA	South African Heritage and Resource Agency
Scoping	A procedure for narrowing the scope of an assessment and ensuring that the assessment remains focused on the significant issues or impacts. Scoping requires input from authorities and the public.
Significant	Factors or considerations are termed significant when they are important, because they are of consequence. For example, they will have a detectable influence on a process, the environment, or the end result.
Species	A group of organisms with distinctive characteristics and which remain distinct by virtue of barriers to interbreeding with other kinds of organisms.
Tc (Time of concentration)	This is the time it would take for a drop of water to flow along the furthest drainage path to the exist point of a defined catchment area.
Threatened	Used to describe the status of a species or population of a species, which has deteriorated through natural or unnatural causes to the point where it may be considered as rare, vulnerable or endangered.
Topsoil	◆ The layer of soil covering the earth which- ◆ provides a suitable environment for the germination of seed; ◆ allows the penetration of water; ◆ is a source of micro-organisms, plant nutrients and in some cases seed; ◆ and is not of a depth of more than 0,5 metres or such depth as the Minister may prescribe for a specific prospecting or exploration area or mining area.

Word:	Definition:
Trench	A type of excavation usually made by digging in a line towards a mechanical excavator and not pivoting the boom – a large, U-shaped hole in the ground, with vertical sides and about 6 – 8 metres in length. Also a prospecting trench.
Vegetation	Any and all forms of plants, see also Fauna
Water – "Clean Water"	Any water that originates outside of the mining area, entering the mining area through overland flow, lateral subsurface flow, or any other natural movement of water.
Water – "Clean Water System"	Any dam, other form of impoundment, canal, works, pipeline and any other structure or facility constructed for the retention or conveyance of unpolluted water.
Water – "Dirty Water"	Any water that originates within the mining area, either as a result of precipitation or as part of mineral processing, as well as untreated sewage and Grey Water.
Water – "Dirty Water System"	Any dam, other form of impoundment, canal, works, pipeline, residue deposit and any other structure or facility constructed for the retention or conveyance of water containing waste.
Water – "Grey Water"	Domestic Waste water not containing sewage.

Background Information:

Introduction:

Inzulu Mining Co (Pty) Ltd (hereinafter referred to as "the Company") is a relatively small mining concern which has already secured a 35% black economic partnership. Please refer to the shareholder's certificates and shareholder's agreement, respectively, attached to the social and labour plan.

The proposed mining area, which is owned by the local authority, is situated between a refuse site and a cemetery and is currently used by unemployed HDSA's for grazing for their cattle.

It should be understood that all the technical and financial ability are provided by Sunshine Coast Crushers CC.

Details of the Applicant:

Company Name:	Inzulu Mining Co (Pty) Ltd
Company Registration Number:	2003/010519/07
Contact Person:	Mr Gavin Eales
Telephone Number:	(041) 366 1165
Fax Number:	(086) 680 0563
Physical Address:	R/E of Erf 1948, Walmer
Postal Address:	P O Box 5780 Walmer 6065
Email:	inzulumining@gmail.com

Regional Setting:

The mine is situated on portion of the remaining extent of Erf 1948, Magisterial District of Port Elizabeth (hereinafter referred to as "the mining area"). See **Map 2 – Regulation 2(2) Plan** and **Map 1 – Locality Plan** attached hereto as **Annexure A.**

Nature and Extent of the Development:

This mining application is located between a cemetery and a grave yard on portion of the remaining extent of Erf 1948, Walmer. The area is approximately 26 hectares in extent. Mined materials will be screened by a dry processing plant located on the mining area.

Existing Rights, Licenses and Permits:

The Company has acquired a mining licence, namely Mining Licence No 41/2001 ML, in terms of section 9 of the repealed Minerals Act, 1991, (Act 50 of 1991), in respect of the remaining extent of the farm Rietheuvel 296, Magisterial District of Uitenhage, which right expires on 1 October 2010. The Company applied in October 2008 for conversion of the said used old order mining right in terms of Item 7(2), Schedule II, of the Mineral and Petroleum Resources Development Act, 2002, hereinafter referred to as "the said Act", to a new order mining right contemplated in section 22 of the said Act, in respect of the corresponding area (which includes the plant and related activities), as shown on the plan attached to the mining work programme submitted in support of that application.

Methodology:

MPRDA Regulation 49 (1) (a)

During the course of compilation of this document the following steps were followed:

- An *in loco* inspection/site visit was conducted during June 2009, during which time an investigation of the surrounding land use and associated infrastructure took place. The mining area assessment also included an analysis of the physical, biological and cultural historical environmental components on the proposed site. The said investigation also resulted in the identification of potential interested and affected parties in the areas surrounding the proposed activity.
- The identification of all potential impacts that may occur as a result of the proposal followed. Appropriate and effective measures to mitigate any of the identified impacts were also considered and discussed with the Company from an early stage.
- A desk study also commenced at an early stage of the project in order to determine which policies, guidelines and legislation of the relevant governmental institutions would be relevant for the compilation of the scoping report (and for the EIA report at a later stage).
- Data was obtained through desk studies to obtain information on the environmental description of the mining area, property description and all other relevant information regarding the proposed project, such as assessment of the land use conditions surrounding same.
- The public participation process will commence during August 2009. Public participation will include consultation with interested and affected parties. These I&AP's include adjacent property owners that will be notified by registered mail of the proposal. The DME shall notify any other I&AP's they see fit to be part of the process as prescribed in the Act. Public participation shall commence further by the placement of a notice at the Regional Manager's office and a site notice at the mining area itself. An advertisement will be published in a local newspaper. The results of the public participation process will be submitted on or before 30 August 2009.
- After the scoping report was used in the official consultation process and comments have been collected by the DME, an environmental impact assessment report as well as an environmental management programme will be submitted on or before the date as instructed by the DME.
- Data required for the EIA report and the EMP report will mostly be obtained from literature and information contained in the existing EMP and Addendum for the existing mine, as well as new information through other literature and additional information.
- Impacts, including biological, physical, social, economic, historical, etc, as well as its mitigation measures, will be dealt with in more detail in the EIA and EMP. The scoping report merely consists of a summary of these impacts.

Chapter 1 – Description of the Existing Environment:

MPRDA Regulation 49 (1) (a)
MPRDA Section 39 (3) (a)

1.1. Geology:

According to the 1:250 000 geological Map 3324 Port Elizabeth the geology underlying the area consists of sand, silt and clay of the Kirkwood formation and the Uitenhage Group. The Site is underlain by steeply folded quartzitic sandstones of the Peninsula Formation, Table Mountain Group, with the folds striking roughly NW-SE. This results in the strong directional pattern of rocky outcrops along the coast, interspersed with small sandy coves.

Over the greatest portion of the site the bedrock is covered to varying depths with Aeolian sand of marine origin, together with some calcrete layers. The wind has shaped the dune sands into a series of small ridges and undulations.

Other interesting features of the landscape are the coastal terraces, defined by steep scarps, which are a result of earlier rises and regressions in sea-level over geological time.

The location of the mineral deposit is shown on the **Map 3 – Geology Plan** attached hereto as **Annexure B.**

The mineral reserves on the proposed mining area are indicated to be more than 1,800,000 m³ of exploitable mineral (sand). See surveyor's plan below.

1.2 Climate:

1.2.1 Regional Climate:

Algoa Bay is situate near the junction of temperate (winter rainfall) and subtropical (summer rainfall) climatic regimes. The area experiences a warm-temperate climate with bimodal winter rainfall, generally ranging between about 400-800 mm per annum. The wind regime is vigorous and strong winds occur throughout the year. Winds blow predominantly from the west-southwest, but the proportion of winds with an easterly component increases substantially in summer, and December, and calmest conditions from March to May.

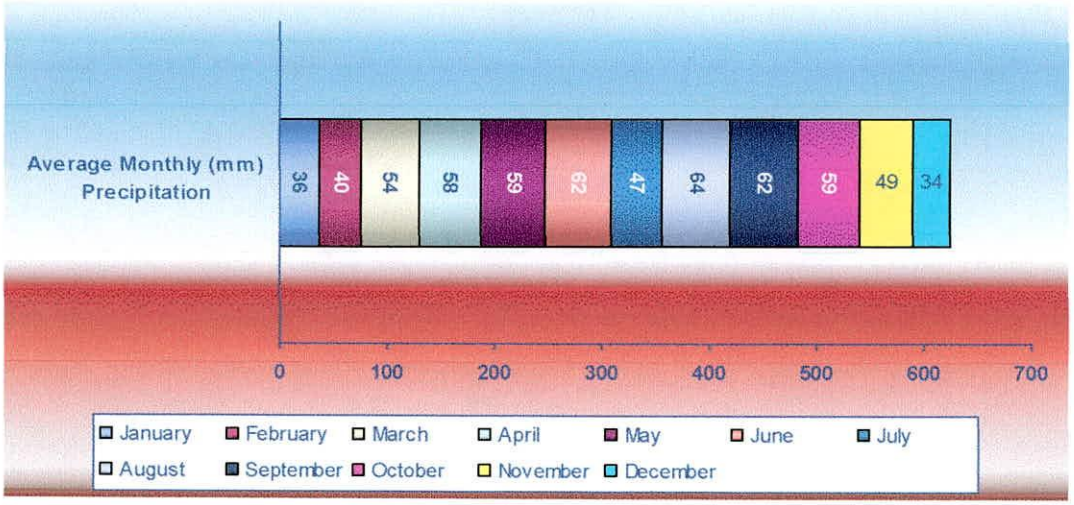
1.2.2 Mean Monthly and Annual Rainfall for the Site and Number of Days per Month with Measurable Precipitation.

Table 1.2.2: This climatological information is the normal values and, according to World Meteorological Organization (WMO) prescripts, based on monthly averages for the 30-year period 1961 – 1990 for Port Elizabeth.

Month	**Precipitation**
	Average Monthly (mm)
January	36
February	40
March	54
April	58
May	59
June	62
July	47
August	64
September	62
October	59
November	49
December	34
Year	**624**

Table 1.2.2 Rainfall

The following chart indicates the monthly rainfall for the Port Elizabeth for the Period 1961 to 1990.



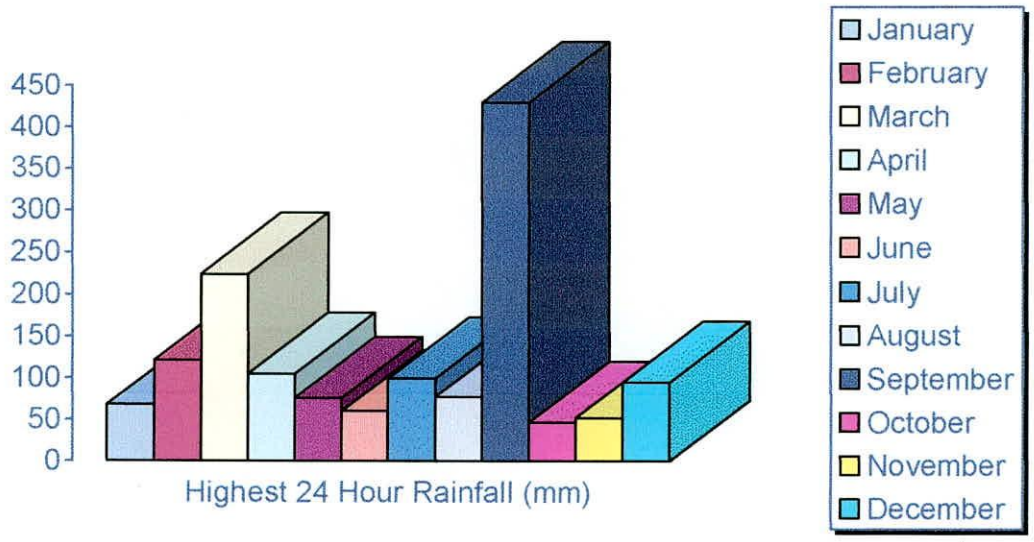
1.2.3 Maximum Rainfall Intensities per Month – 60 min, 24 hrs, 24 hrs/50 yr and 24 hrs/100 yr Storm Events

Table 1.2.3: This climatological information is the normal values and, according to World Meteorological Organization (WMO) prescripts, based on monthly averages for the 30-year period 1961 – 1990 for Port Elizabeth.

Month	**Precipitation**
	Highest 24 Hour Rainfall (mm)
January	68
February	121
March	224
April	105
May	76
June	60
July	99
August	77
September	429
October	46
November	52
December	95
Year	**429**

Table 1.2.3 Highest 24 Hour Rainfall

The following chart indicates the highest 24 hour rainfall (mm)



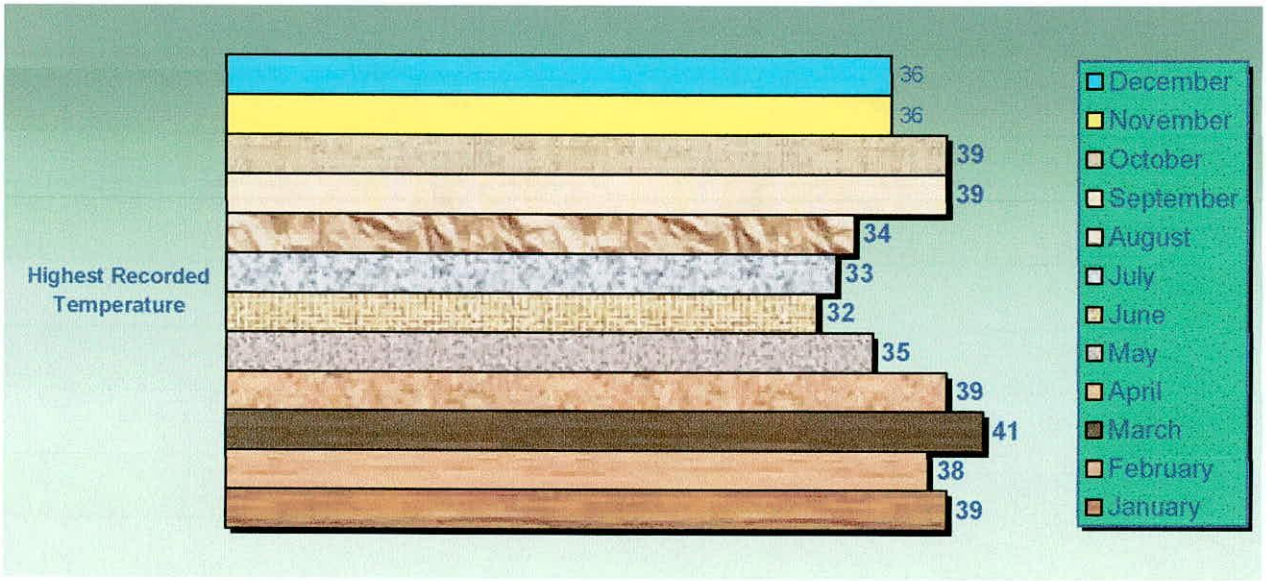
1.2.4 Mean Monthly, Maximum and Minimum Temperatures

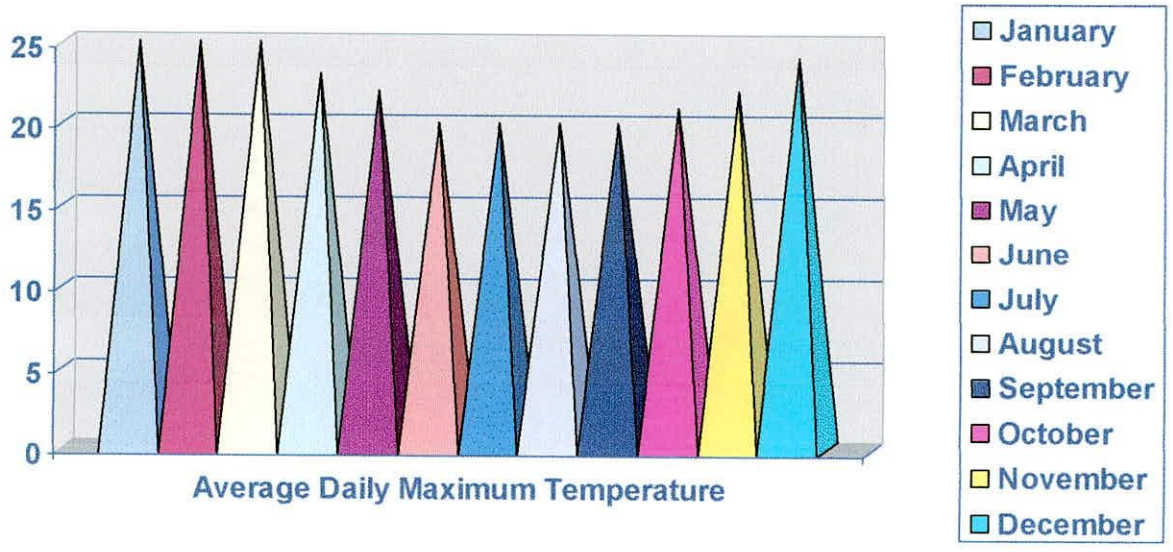
Table 1.2.4: This climatological information is the normal values and, according to World Meteorological Organization (WMO) prescripts, based on monthly averages for the 30-year period 1961 – 1990 for Port Elizabeth.

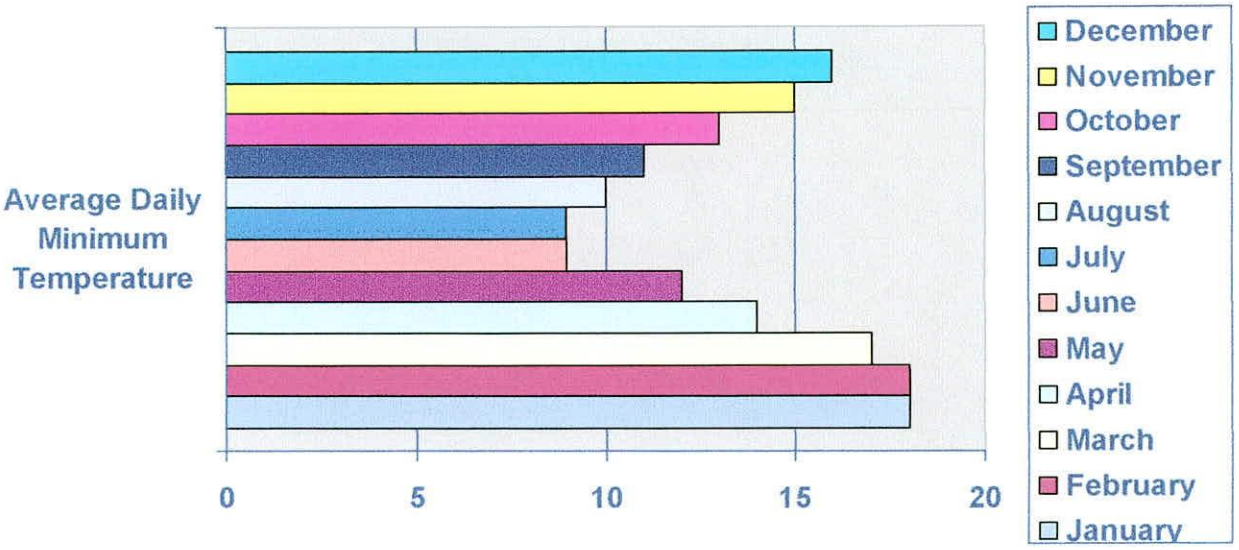
Month	Temperature (° C)			
	Highest Recorded	Average Daily Maximum	Average Daily Minimum	Lowest Recorded
January	39	25	18	10
February	38	25	18	11
March	41	25	17	8
April	39	23	14	4
May	35	22	12	2
June	32	20	9	-1
July	33	20	9	-1
August	34	20	10	2
September	39	20	11	2
October	39	21	13	3
November	36	22	15	6
December	36	24	16	9
Year	**41**	**22**	**14**	**-1**

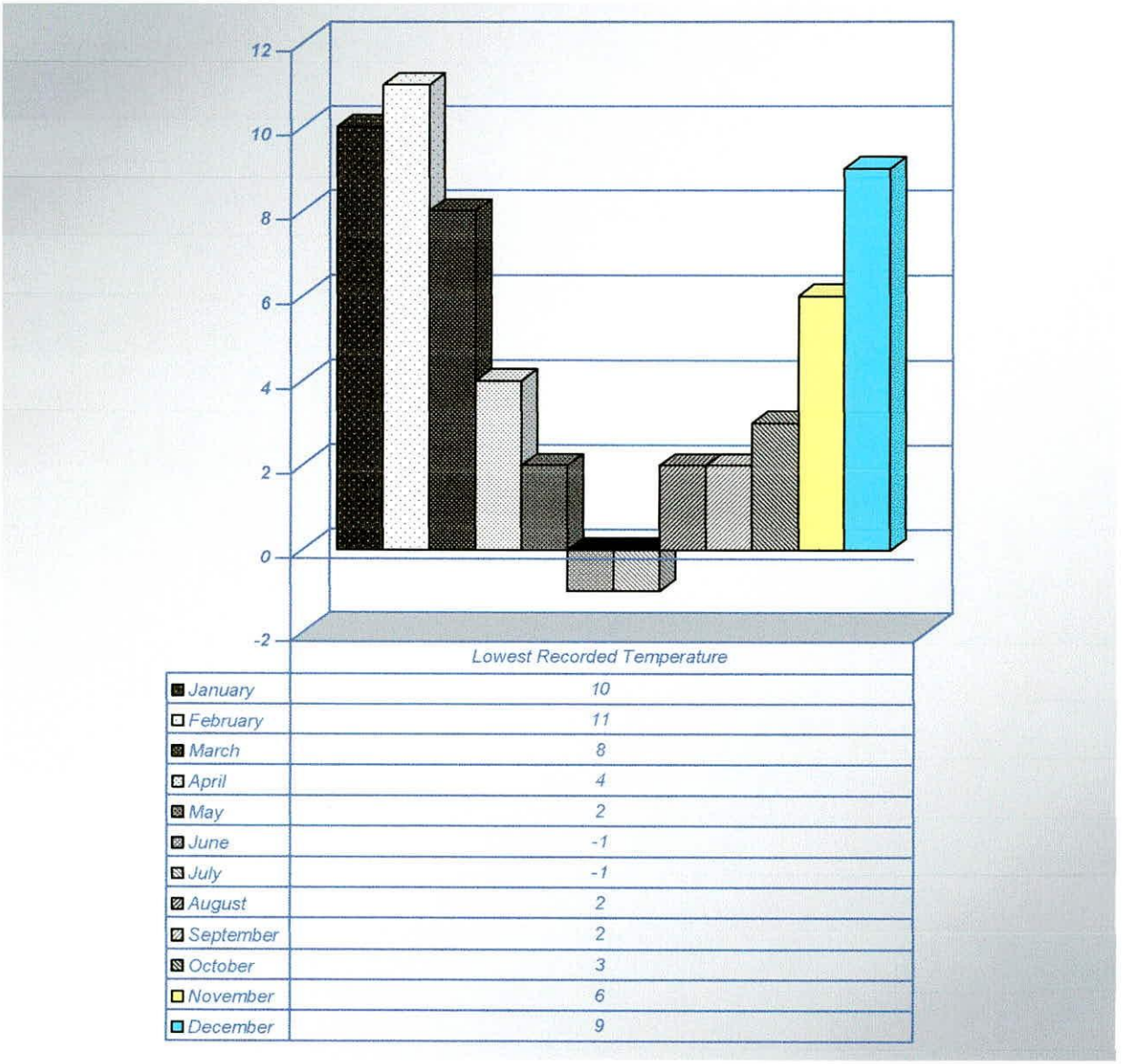
Table 1.2.4 Average Temperature

1.2.5 The following charts indicate the highest recorded, maximum, minimum and lowest temperatures for Port Elizabeth for the Period 1961 to 1990.









	Lowest Recorded Temperature
January	10
February	11
March	8
April	4
May	2
June	-1
July	-1
August	2
September	2
October	3
November	6
December	9

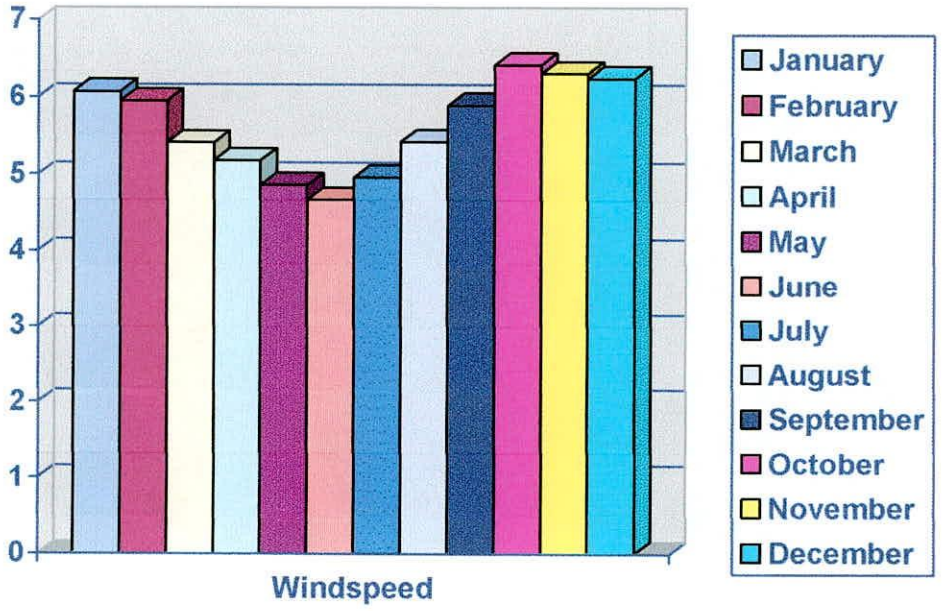
1.2.6 Monthly Mean Wind Direction and Speed

Table 1.2.6: This climatological information is the normal values and, according to World Meteorological Organization (WMO) prescripts, based on monthly averages for the 30-year period 1961 – 1990 for Port Elizabeth.

Month	*Speed*	*Direction*
January	6.07	WSW
February	5.95	WSW
March	5.41	WSW
April	5.18	WSW
May	4.86	WSW
June	4.67	WSW
July	4.96	WSW
August	5.42	WSW
September	5.89	WSW
October	6.41	WSW
November	6.3	WSW
December	6.24	WSW
Year	**5.63**	**WSW**

Table 1.2.6 Wind Direction and Speed

The following chart indicates the months and speed of the wind:



1.2.7 Mean Monthly Evaporation

No information.

1.2.8 Incidence of Extreme Weather Conditions

According to the Port Elizabeth Weather Bureau, extreme weather conditions from the point of view of strong to gale force winds can be expected for large parts of the year at a 3-4 day interval.

1.3 *Topography:*

The topography is typical of wind-blown dunes, with east-west ridges oriented in line with the dominant wind, and localised depressions.

See **Map 1 – Regulation 2(2) Plan** attached hereto as **Annexure A**.

1.4 *Soil:*

The area proposed for mining is at present covered by marine wind-blown sands with poorly developed soils. The soil is essentially dune sand with a small amount of organic matter. The agricultural and forestry potentials is low due to the prime potential of the land.

Topsoil overlays calcrete in some areas inland of that proposed for mining. Calcrete is resistant to erosion.

1.5 *Land Capability:*

The land capacity is mainly be wilderness land/grazing.

1.6 *Land use:*

- **Pre mining land use:**
  The mining area is currently being utilised for grazing by occupants in the informal settlement nearby. There are obvious signs of illegal sand mining visible on site.

- **Historical Agricultural Production:**
  It does not seem as if the land was historically used for agriculture. The proposed area is situated between a reffuse site and a cemetery.

- **Existing structures.**
  No existing structures are to be found.

1.7 Flora:

1.7.1 Introduction:

The proposed mining area is located on the Arlington Site and a vegetation survey was conducted on the 1st and the 2nd of June 2009 by Mr. Wener Kotzé. The surveyed area was traversed by foot identifying all vegetation types inside the perimeters of the proposed mining area. The vegetation includes all indigenous grass, shrub and woody tree and creeper species as well as a number of invader and exotic plant species.

The diverse geology, relief, climate and soils of the Eastern Cape provide for the flora, which is noted for its phytogeographical complexity. The flora is transitional between Cape flora and subtropical flora. Many taxa of diverse phytogeographical affinities reach the limits of their distribution in this region. The Eastern Cape can best be described as a tension zone where four major biomes converge and overlap. All of the major vegetation types of South Africa i.e. forest, fynbos, thicket, karroo, grassland and savanna, occur within the Eastern Cape region forming a complex mosaic of communities composed of a diverse flora of mixed origins and affinities.

The importance of the families typical of Cape flora (e.g. Ericaceae and Aizoaceae) decreases as on moving eastwards, they are replaced by families of the subtropical region (e.g. Gramineae and Asclepidaceae). Thicker, described as being of Tongaland-Pondoland affinity, enters the region along the east coast and penetrates up the river valleys. Succulent and dwarf subdesert shrublands of the Karoo-Namib region extend down the dry river valleys from the arid interior. Afromontane elements extend down the mountains to sea level in the south-western region of the Eastern Cape, where the coastal forests are composed of many Afromontane species. Fynbos taxa of the Cape region are common on the infertile sandy soils derived from the Cape Supergroup rocks.

According to Low and Rebolo's (1996) classification the site of the mining area lies within an area where the Mesic Succelent Thicket vegetation type historically occurs.

1.7.2 Mesic Succulent Thicket

1.7.2.1 Synonym

Valley Bushveld (A23)

1.7.2.2 Statistics

1 931 km²; ± 51 percent transformed; 5.33 percent conserved.

1.7.2.3 Vegetation

The mining area, according to Acocks hosts transitional vegetation between Alexandria Forest and False Fynbos. The vegetation is stunted due to the poor nutritional status of the soil and is therefore an aspect that must be addressed properly during the rehabilitation process. The mentioned vegetation types are quite resistant to external influences but if soil structures are disturbed extensively, it struggles to recover and would require a dedicated and expedited rehabilitation process. It reproduces through vegetative means as well as seed but is long-term process.

The indigenous vegetation has largely been removed on the property concerned through invasive plant cover. The area was covered by A. cyclops, red eye/rooikrans; and A. saligna, Port Jackson. Rooikrans stretches along the entire coastline from Port Nolloth in the north-west to beyond East London in the east, a distance exceeding 2,000 km. Port Jackson stretches along the Cape coastline from Saldanha Bay in the west to the Kei River in the east. Port Jackson and rooikrans are important invaders of fynbos vegetation. Successful biological control of Port Jackson, using an introduced gall-forming rust fungus, has greatly reduced the densities of populations and in the long term should provide complete control of this invader.

Since many of the indigenous plant species have died out in the proposed mine area relocation of species is not an option and once the area has been stabilized with a grass cover the applicant will have to rely on natural succession and reintroduction of commercially obtained species for the establishment of bush clumps. If any seedlings are found they must be removed from the development areas and be potted and placed in a cool and protected area until required during future rehabilitation processes. One of the existing cleared areas to the east could be used for this purpose. It is imperative that a phased approach be followed to ensure that environmental degradation is restricted to the minimum and re-vegetation success maximised. Soil structure will be a major consideration and the proposed upgrading must be performed to ensure the survival of seedlings, especially on the slopes. In order to protect disturbed areas and to prevent unnecessary visual impact the minimum vegetation must be removed at any given time. Vegetation on the dunes bordering the Mine area must be retained as windbreaker and visual screen.

Once re-vegetation of disturbed area starts this impact will emerge as a significant impact and the necessary control measures need to be implemented with specific reference to Rooikrans (Acacia Cyclops) and possibly Caster oil plants (Ricinus Communis), Solanum species and Olieboon (Datura Stramonium). Should this impact not be controlled the mined area will again be severely infested and must be prevented at all cost.

Due to the low conservation value of vegetation that will be removed during the mining process, the impact is rated as very low if appropriate mitigation measures are implemented. If the proposed re-vegetation strategy is implemented the impact can be rated of low positive significance over the proposed mining term (2 years) and low-moderate at the end of the maintenance period (year 3-4)

With a vigorous re-vegetation programme, certain species will re-colonize affected areas and the specie composition and diversity will slowly improve but will most probably never reach the original status again. The success rate of revegetation will however, depend on concurrent rehabilitation and proper stabilization of soils by means of a secondary grass cover.

Vegetation Management Plan

- *Mining would be restricted to the area demarcated by the mine plan and the vegetation on the dunes flanking the mine area must be retained as screens and windbreakers.*
- *All plant species that can be transplanted, if any, will be removed from mine areas and be secured in a nursery area for use during the rehabilitation phase.*
- *Only the approved haul roads will be used and vehicles will not traverse virgin land.*
- *Disturbed areas at the quarry will be revegetated with a grass cover in the following manner.*

  Seeding with:

Cloris Gayana	*Eragrostis Curvula*
Themeda Trianda	*Eragrostis Teff*
Panicum Maximum	*Digitaria Eriantha*

- *It is also suggested that some of the transplantable species be introduced to grassed areas:*

Asparagus	*Osyris Compressa*	
Chrysanthemoides Monilifera		*Carpobrotus*
Agathosma Stenopetala		*Metalacia Muricata*

- *Water for irrigation purposes will be obtained from the said local municipality.*
- *Once the area has been vegetated, an alien control programme will be implemented and if necessary, an herbicide such as Garlon will be applied. Acacia Cyclops, Solanum species, Datura Stramonium, Sesbania Pudecae and Blue Thistle can be pulled or chopped down since it does not coppice, but Acacia Mearnsii & Acacia Longifolia do and must be timeously treated with the said herbicide.*
- *Veld fires will be prevented since it could affect the vegetation of the entire area as well as impacts on soil stability and fertility.*

The cover on the mining area consists mainly of spinescent shrub and woody creepers with many succulents. The diversity is high with a high proportion of endemics. Characteristic woody species include White Milkwood Sideroxylon inerme, Dune Kokotree Maytenus procumbens,Karoo Boerboon Schotia affra and Septemberbush Polygala myrtifolia, while succulent species such as Uitenhage aloe Aloe Africana, Bitter aloe A. ferox, noorsdoring Euphorbia ledienii and E. grandidens may be common.

A brief description of the values of the White Milkwood (Sideroxylon inerme) motivates the importance of conserving the above mentioned indigenous tree specie and will be stated below.

Family : Sapotaceae (milkwood family)
Common names : white milkwood (Eng.); witmelkhout, melkhoutboom, melkbessie (Afr.); aMasethole, umQwashu (Xhosa); aMasethole-amhlope, uMakhwela-fingqane (Zulu)

Description

A small to medium evergreen tree, which grows to a height of 10-15 m. The tree has a sturdy trunk that is normally 600mm in diameter, and a large, dense, rounded crown. The bark is normally grey-brown to black. Young branches are always covered with fine hairs. The leaves are leathery and spirally arranged, dark green above and dull beneath. Fine hairs are also found on young leaves. The tree has small greenish white flowers with a strong, unpleasant smell. It flowers during summer and autumn (November to April). Fruits are purplish black, small, round and fleshy and like the leaves, contain milky latex, and are present from late summer to spring (February to September).

Distribution

This species is commonly found in dune forests, almost always in coastal woodlands and also in littoral forests (forests along the sea shore).

Status

Sideroxylon inerme is widespread on mountains and is not an endangered species. It is, however, one of South Africa's Protected Trees, which means that no milkwood may be damaged, moved or felled.

Ecology

Speckled mousebirds eat flowers. Birds, bats, monkeys and bush pigs eat the fruit.

Uses

Bark and roots have medicinal value and are used to cure broken bones, to treat fevers, to dispel bad dreams, and to treat gall sickness in stock. The wood of the tree is said to very hard and fine-grained and is used as timber for building boats, bridges and mills. Ripe purple-black berries are said to be edible, with purple, juicy flesh and sticky white juice.

Vegetation management plan for indigenous woody species, that include Sideroxylon inerme (White Milkwood – see above photograph)

A number of rare and valuable trees were encountered during the survey. These species includes Sideroxylon inerme, commonly known as the White Milkwood, which plays a critical role in the infra-structure of the eco-system.

Areas where mining has been completed shall be partially re-vegetated by the above mentioned trees .These trees will be obtained by either purchasing them from local nurseries or by growing them on a small scale in a demarcated area of the mining area.

Growing Sideroxylon inerme

These trees can be grown from cuttings but only semi-matured side shoots should be used. The cuttings should then be potted up in a well-drained soil mix. Results have shown that seed sowing is the best method of propagation.

Grass species identified on site

A number of indigenous grass species was also encountered during the survey. All grass species could not been identified positively due to the fact that the survey was conducted in early winter and a lack of identifying factors always occurs this time of year. Grasses positively identified includes:
Eragostis Curvula, Cyndon Dactylon, Themeda Triandra, Digitaria Eriantha, Melenis Repens, Urochloa Mosambicensis, Aristida Barbicolis .

1.7.2.4 Site Botanical Description

All natural vegetation has on a great portion of the mining area been cleared. As stray cattle are feeding on the land.

1.7.2.5 Endangered or Rare Species

No endangered or rare species were recorded for the proposed mining area.

1.7.2.6 Intruder or Exotic species

The said site is highly degraded and alien plant species are numerous. Prominent woody alien plants occurring include Acacia spp., Pinus spp., Eucalyptus spp. and Casuarinas pp. (Beefwood).

Declared weeds and invader plants in South Africa

The Conservation of Agricultural Resources Act, No. 43 of 1983, as amended in March 2001, sets out the regulations regarding the control of weeds and invasive plants and provides a list of declared plants, in which they are divided into three categories. There is an exception in the regulations regarding biological control reserves. These are areas where permission is granted for declared plants not to be controlled because they are used for introducing and monitoring biological control agents (e.g. insects).

In total there are 200 species of plants that are declared weeds or invaders in South Africa. These include 121 woody species, 16 succulent species, 44 herbaceous species, 9 grasses and reeds, and 10 aquatic species. They are divided into three categories:

Category 1 species are declared weeds and totally prohibited.

- May not occur on any land or inland water surface other than in biological control reserves.
- Must be controlled by the land user on whose land or inland water such plants are growing.
- May not be planted or propagated.
- May not be imported or sold; and
- May not be acquired.

Category 2 plants are invasive species for which permission can be obtained to grow them commercially in demarcated areas but otherwise they must be removed.

Category 3 invasive plants can be maintained on your land if they are plants that were already growing at the time these regulations were promulgated (March 2001).

The most widespread and abundant acacias are Acacia mearnsii, black wattle; A. cyclops, red eye/rooikrans; and A. saligna, Port Jackson. Black wattle has invaded the widest range of vegetation types in South Africa and is the most widespread riverine invader; it occurs almost continuously from Louis Trichardt in the Northern Province down the eastern seaboard to Cape Town, a distance of about 2,500 km. Rooikrans stretches along the entire coastline from Port Nolloth in the north-west to beyond East London in the east, a distance exceeding 2,000 km. Port Jackson stretches along the Cape coastline from Saldanha Bay in the west to the Kei River in the east. Port Jackson and rooikrans are important invaders of fynbos vegetation. Successful biological control of Port Jackson, using an introduced gall-forming rust fungus, has greatly reduced the densities of populations and in the long term should provide complete control of this invader.

1.8 Fauna:

1.8.1 Introduction:

Animals play an important role in maintaining ecosystem functioning for example pollination, spreading of seeds, removing of pests, trimming of vegetation and therefore determining penetrability of vegetation and generation of manure etc. The original Driftsands Bypass Dunefield habitat of the quarry area and to a lesser extent the fynbos pose a definite ecological niche for animal species since it could provide adequate forage, nesting place and protection for avian fauna whilst the under storage provide adequate protection and forage for browsers. Due to the extensive resources that this veld types offers original specie diversity would have been high. However, the site is located close to developed areas and informal settlements where poverty is a definite threat and dog hunting and poaching in this area is extensive resulting in mammals becoming increasingly scares.

Removal of the proposed vegetation will not result in the extinction of any specie but could cause initially a decrease in specie diversity. The impact could be rated as very low due to the number of animals and species that will be affected. The positive economic impact (financially and value to building industry) of the proposed concern will definitely outweigh the mentioned impact.

It was noted that a large number of bird species visit the mining area and surrounds and could include some of the following species:
Bar-throated Apalis
Yellow-Breasted Apalis
Black-collared Barbet
Cape Batis
Bokmakierie
Southern Boubou
Cape Bullbul
Sombre Bullblu
Terrestrial Bullbul
Forest Buzzard
Steppe Buzzard
Red-Chested Cuckoo
Spotted Dikkop
Red-eye dove
Tambourine Dove
Fork-Tail Drongo
African Fish Eagle
Blue-billed Firefinch
Blue-mantle Flycatcher

The noises generated on site will be from a limited number of people communicating and from the loaders, trucks and sand screen but would not be excessive and noise levels are anticipated to range between 50 and 70 decibels at the mine boundaries. Most of the noises would be low-pitched and would have a lesser impact on animals than what high-pitched noises would have.

Since there are very few remaining mammals on site, no detailed faunal survey was conducted. The more important animals that could be hosted by the proposed mine area are bush pigs, mongooses, vervet monkeys, duikers, African wildcat, genets, African civet, guinea fowl, locusts, field mice, lizards, hares, bush buck, lynx, herpentofauna species such as the Cape cobra, horned adder, puff adder, tree snakes, lizards, geckos, chameleon, tortoises (most of them has conservation status) etc and possible the tree dassie, which have become very rare and has not been spotted for some time.

During the operational phase, the impact on the fauna is rated low. Rehabilitating the quarry site would provide the opportunity for animals to re-colonize the area and the impact at closure is rated to be of low positive significance.

Remedial measures to be implemented are:

- Vehicles may not leak any fuel, oil or lubricants and will be maintained properly at all times.
- Vehicles will not drive within any vegetated areas and their movement will be restricted to the authorized mine area.
- No animals entering or settling in the mine area will be disturbed or killed and this requirement will be included in the environmental awareness programme, which must be discussed with workers on an annual basis by the owner of the sand quarry but preferably by a competent environmentalist.
- No hunting or snaring would be allowed. In addition, the owner or manager will remove any of the staff caught interfering with wildlife from the site.
- The quarry area will be developed in phases and clearing of vegetation will be restricted to the minimum area required for optimal extraction of sand.
- Veld fires will be prevented by not allowing any open fires on the mine area.

Pesticides may only be used in a controlled manner.

1.8.2 Vertebrates

1.8.2.1 Amphibians

It is not known how many amphibian (frog) species occur in the area, but the Eastern Cape has a diverse amphibian fauna, including 34 jtaxa (species and subspecies – CSIR 1997). Generally, frogs are useful bio-indicator species, as their reliance on both aquatic and terrestrial habitats at different stages of their life cycles, their need for damp habitats, and their permeable skins makes them vulnerable to pollutants and other anthropogenic effluents.

Numerous amphibians are likely to be found in the variety of habitats offered by die Coastal hydrological systems.

1.8.2.2 Reptiles

The reptile fauna of the area is particularly diverse, containing 56 species of lizards, chameleons, snakes, tortoises and sea turtles. Of these, 22 species are either Red Data, listed under the Convention on the illegal Trade in Endangered Species, or are endemic to the area or peripheral to the usual range of the species (Coastal and Environmental Services, 2001). These include eight lizards, two monitors, one gecko, one chameleon, three snakes, three tortoises and the four globally endangered sea turtle species. The most restricted range belongs to the Albany dwarf adder (Bitis albanice), recently described from the Coega area (Branch 1999).

The Arlington site has been under intensive agriculture use for several decades and it is unlikely that any of the sensitive species occur on the farm.

Consisting species of lizards, chameleons, snakes and tortoises should be relocated to nature reserves in consultation with the relevant conservation authority.

1.8.2.2 Aves

Among the large terrestrial birds, blue crane (Anthropoides paradiseus). Stanley's bustard (Neotis denhami), martial eagle (Polematus bellicosus) and the African marsh harrier (Circus ranivorus), secretary bird (Sagittarius serpentarius) and Knysna woodpecker (Campethera notata) are listed as Red Data Species (Barnes 2000). While the above species may utilise sections of the coast, none of the birds are known to breed in the Arlington area.

1.8.2.3 Mammals

Only two mammal species are endemic to the Arlington area: Duthie's golden mole (Chloratalpa durhiae) and the pygmy hairy-footed gerbil (Gerbillurus paeba exilis) which occur in dune thicket (CES 2001). It is unlikely that these species are found on the Arlington site.

Whilst the said site is partially transformed it is likely that duiker and bushbuck still occur in the natural areas of the site.

1.8.2.4 Endangered or Rare Species

No rare or endangered species are expected to occur on or in close proximity to the proposed mining area.

1.9 Surface Water:

None.

1.9.1 Surface Water Quantity:

Not Applicable

1.9.2 Surface Water Quality

Not Applicable

1.9.3 Drainage Density of Areas to be Disturbed:

Not Applicable

1.9.4 Surface Water Use:

None

1.9.5 Water Authority:

Nelson Mandela Bay Local Municipality.

1.9.6 River Diversions:

There is no river diversion required by mining operation.

1.9.7 Wetland

No wetland occurs on the site.

1.10 Groundwater:

The underlying fractured Table Mountain quartzite is a good aquifer, which is used in some of the surrounding areas.

1.10.1 Presence of Water Boreholes and Springs and their Estimated Yields:

It is unlikely that any boreholes occur on the property.

1.10.2 Ground Water Quality:

No analysis of ground water has been undertaken.

1.10.3 Ground Water Use:

No groundwater is being utilised on the portion of the farm earmarked for quarrying.

1.10.4 Ground Water Zone

Not applicable

1.10.5 For River Diversions Only

Not applicable

1.11 Air Quality:

According to the Mine Health and Safety Act (Act, 29 of 1996) an employer must maintain a healthy and safe environment that is without risk to the health of employees. As far as reasonably practicable every employer must identify the relevant hazards and assess the related risks to persons, who are not employees, who may be exposed and ensure that persons who are not employees, but who may be directly affected by the activities at the mine are not exposed to any hazards to their health and safety.

From the above is clear that activities, which can cause a negative impact on the surrounding environment, need to be assessed, considered and managed where necessary. Other statutory requirements include:

- Threshold Limit values – ACHIH 1998/1999
- Chemical Substances Regulations – R1179 of 25 August 1995.
- The Air Pollution Prevention Act, Act 45 of 1965
- Guidelines – Department of Environmental Affairs and Tourism – Air Pollution Division.

The only risk identified in this regard is that of excessive dust levels on the mining area caused by hauling, excavating and loading of material.

The ambient air quality within the area is considered to be fair, with dust originating from gravel roads being the primary source of pollution.

1.12 Noise:

Ambient noise levels in the area are higher than similar to those associated with a rural area due to the refuse site and Port Elizabeth Air Port being close by. It is recommended that regular noise surveys be conducted to monitor any possible impacts on the surrounding communities.

1.13 Sites of Archaeological and Cultural Interest:

No areas or sites of archaeological and/or cultural significance were identified to occur on the area identified for the proposed mining area

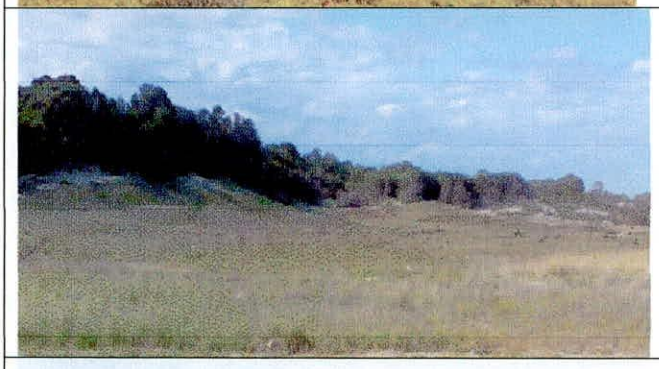
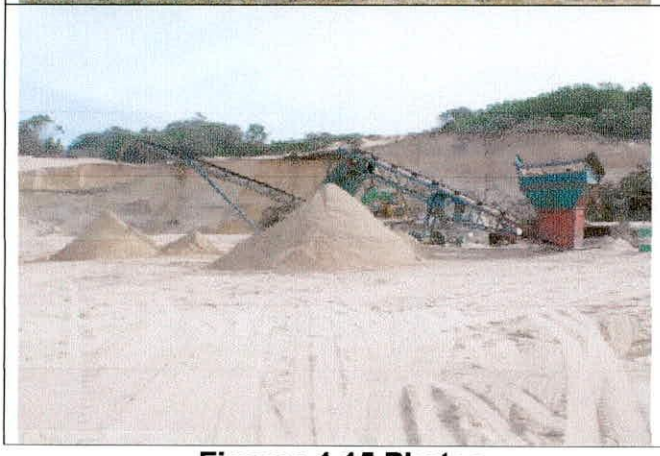
1.14 Sensitive Landscapes:

No sensitive areas occur on the proposed mining area.

1.15 Visual Aspects:

The proposed site lies between a cemetery and refuse site and is not visible from any residential or commercial area. Therefore it is unlikely that the proposed mining area will be visible to the broader public.

Picture	Description
	Typical vegetation of the proposed mining area.

	Typical vegetation of the proposed mining area.
	Rehab by Sunshine Coast Crushers on nearby site 9 months after actual rehabilitation commenced.
	Stockpile and plant (on background) of a close by mine of same applicant. Same type of plant will be used to process material from proposed mining area.

Figures 1.15 Photos

1.16 Regional Socio-economic Structure:

1.16.1 Population, Size and Distribution:

Nelson Mandela Bay has a population of 1,1 million (Development Partners Report) and covers an area of 1 950 km². There are 289 000 households in formal areas. Although the situation changes constantly, the most recent studies show that there are 38 000 households in informal areas and approximately 42 000 qualifying households in backyard shacks.

1.16.2 Human Development Index

- Unemployment rate of approximately 35%.
- Altogether, 107 239 of the total number of 289 000 households are classified as indigent.
- 44% of households access at least one social grant.
- 30% HIV/AIDS Prevalence rate according to Antenatal care statistics.
- 35% of NMB's population is under 19 years of age.
- 66% of the population older than 20 years does not have metric.
- 20% of residents have no or limited schooling.

1.16.3 Housing and Infrastructure

Since 2000, the Municipality has constructed 34 081 low-cost houses. The current housing backlog is approximately 80 000 units.

Water

Altogether 100% of households have access to a basic level of water within a 200 m radius.

Sanitation

Altogether 91% of households have access to a basic level of sanitation.

Health

(a) Nelson Mandela Bay has 41 permanent and satellite municipal clinics and 13 mobile clinics; these include three day hospitals and 9 Eastern Cape Department Clinics.
(b) Eight hospitals (four provincial and four private).
(c) Since 2000, nine primary health care clinics have been built and ten have been upgraded.
(d) Nurse to patient ratio – 1:43.

Solid waste removal and environmental management

Altogether 100% of households have access to a basic level of solid waste removal within the urban edge. Challenges are around illegal dumping and the provision of basic level of service to peri-urban areas.

Electricity

Altogether 97% of households in formally demarcated municipal residential areas have access to a basic level of electricity. Challenges are around the increase in electricity tariffs.

Library provision

The Municipality has a total of 22 libraries. The Municipality has embarked on a process of computerizing its libraries, equipping each with a full office package and internet and e-mail facilities.

Community facilities

- Community and municipal halls = 31
- Customer Care Centres = 13
- Libraries = 22
- Sport and recreation facilities:
    - Sports facilities = 79
    - Beaches = 19
    - Pools = 18
- Developed Open Spaces = 1438

1.16.4 Social Infrastructure

Shops

The closest centres are in Walmer.

Schools

The closest schools are in Walmer

Churches

The closest churches are in Walmer

Hospitals and Clinics

The closest hospitals and clinics are located in Walmer.

Waste Disposal

General waste disposal sites are located at Addo, Port Elizabeth and Uitenhage.

Arlington
Classified for General Waste
Schoenmakers Kop Road
Walmer

Tourism and Recreation

The greater Port Elizabeth area is a prime tourism area.

Water Supply

Not applicable as material will be beneficiated through a portable dry screen process on site.

Power Supply

No power will be required on site.

1.17 *Key Economic Activities*

EXECUTIVE DIRECTOR:
Zolile Siswana

ECONOMIC VISION

The principles of "Global Touch and Local Impact" form the basis upon which the Nelson Mandela Bay's economic vision is built. Nelson Mandela Bay strives to promote global competitiveness in order to create sustainable livelihood for its inhabitants and address sustainable growth.

ECONOMIC OBJECTIVES

The Nelson Mandela Bay Municipality and its partners are geared to achieve the area's economic vision by 2020 and accordingly, are committed to the following strategic goals:

- To achieve and maintain an economic growth rate of between 3.5% to 8% per annum;
- To obtain an annual job growth of 3.5% in order to half the current unemployment;
- To reduce by 60% the number of households living below the poverty line; and
- Assist SMME's and co-operatives to access at least 30% of the opportunities in Nelson Mandela Bay.

STRUCTURE OF THE DIRECTORATE

The Economic Development and Recreational Services directorate is responsible for promoting economic growth, job creation and reducing poverty. The directorates work is guided by the area's Local Economic Development (LED) Plan which provides a blueprint for key development within the area's growth sectors. The LED Plan also informs targeted development plans which include the Human Resource Development Plan and Investment Strategy, Industrial Strategy.

The directorate aims to ensure that Nelson Mandela Bay is a productive and globally competitive area, which has a vibrant economy, and is able to address local economic challenges. The directorate is structured into different branches, which all work toward developing the economy and spreading its benefits.

BEACHES AND RESORTS

The Beaches and Resorts sub-directorate aims to maximize the development and usage of all beaches, as well as manage 2 of the 5 resorts owned by the municipality. The directorate's role also involves identifying employment and opportunities along the coastline for Small, Macro and Medium Enterprises (SMME's); encourage the enhancement of the environment, as well as the safety and security of the beach front.

SECTOR DEVELOPMENT

The Sector Development sub-directorate seeks to contribute to the creation of sustainable economic growth that will assist small businesses and cooperatives to develop. The sub-directorate facilitates skills development and mentoring, provides business development support, and also facilitates business linkages and market development initiatives through strategic partnerships in different sectors.

SPORT AND RECREATION

The role of the Sport and Recreation sub-directorate is to maintain, improve and promote the infrastructure of sport facilities in Nelson Mandela Bay. In addition, the sub-directorate aims to integrated local sport and recreation activities in the local tourism agenda, as well as implement sustainable skills development programs essential for the optimal running of the area's sport and recreation activities.

TOURISM, CULTURE, HERITAGE AND MUSEUMS

The Tourism, Culture, Heritage and Museums sub-directorate is responsible for identifying and facilitating infrastructural development necessary for key tourism, cultural and heritage sites in Nelson Mandela Bay. The sub-directorate also provides funding for cultural events and coordinates training programs aimed at capacitating tourism and cultural practitioners.

TRADE AND INVESTMENT

The Trade and Investment sub-directorate aims to position Nelson Mandela Bay as a competitive, world-class business and investment destination by targeting the area's key growth sectors and also by creating an enabling environment for small business and large investments. In partnership with key stakeholders such as the Department of Trade and Industry (DTI), the Eastern Cape Development Corporation (ECDC) and business chambers, the sub-directorate is mainly responsible for the creation of an optimal business climate, attracting new investment, stimulating business expansion and retention in the area, as well as providing business support services.

URBAN AGRICULTURE

The Urban Agriculture sub-directorate aims to provide infrastructure for commercial and emerging agricultural activities to take place. The sub-directorate's role also involves soliciting training and development for capacity building amongst emerging farmers. In addition, it assists stakeholders in the commercial agriculture and research in the development of products, diversification and value addition through processing.

It is anticipated that at closure, all employees will be absorbed in one or more of the above sectors.

Tribute to Nelson Mandela

"I have fought against white domination and I have fought against black domination. I have cherished the idea of a democratic and free society. If need be, it is an ideal for which I am prepared to die". (Nelson Mandela)

1.17.1 Key Socio-Economic Activities

VARIABLE	NELSON M ANDELA BAY
Population	1,094,000
Number of households	322,450
Average household size	3.4 persons per household
Age profile	26.2% are in the 0-14 years age group 68.5% are between the ages of 15-64 years 5.3% are in the 65+ years age group
Level of education	33.3% have a metric or higher education 39.5% have some secondary education 20.6% have primary or some primary education 6.7% have no education
Level of employment	32.8% employed 28.2% unemployed 39.0% not economically active
Occupation profile	Elementary occupations, clerks, craft and related trade workers, technicians and Associate professionals, service workers.
1Number of LSM 6 – 10+ households	40%
Weighted Ave. Monthly Household Income	R5 964

Table 1.17.1 Key Socio-Economic Activities

1.17.2 Effect of HIV/AIDS:

Although the effect of HIV/AIDS is not required to be included into the compilation of this report, it is included as a reference for the management of the facility. The information included is extracted from a technical paper delivered by Dr. Izak Fourie on 28 March 2003 at the 34th annual conference of the Institute of Quarrying Southern Africa.

"At the onset of the 21st century post-apartheid South Africa faces daunting economic and social challenges. Most economists and political leaders, regardless of their political orientation, have come to accept that, for South Africa to succeed and meet its social and economic challenges, including the expectations of the majority of its population, it must participate and compete effectively in the global economy.

If South African is to (re)join the global economy and kick-start the "African Renaissance", it will have to attract significant amounts of foreign direct investment while its private, formal sector companies must cut costs, increase productivity and improve quality standards.

Sadly, just as the opportunities of the global economy are opening up to South Africa, the country is facing an HIV/AIDS epidemic of considerable proportions. Although the country's health care systems will bear (and is already bearing) the initial brunt of the epidemic, there is no doubt that HIV/AIDS will affect virtually every aspect of our society, including our companies and workplace to the extent that it may threaten the very survival of some of our private sector enterprises."

"In its latest Global Update, the Joint United Nations Program on HIV/AIDS (UNAIDS) provide the following estimates of the global HIV/AIDS epidemic as at December 2001:

- *People newly infected with HIV in 2001:5 million*
- *Number of people living with HIV/AIDS:40 million*
- *AIDS deaths in 2001 :3 million*
- *Cumulative AIDS deaths (since 1980) :24 million*

Sub-Saharan Africa continues to dwarf the rest of the world on the HIV/AIDS scorecard with 3.4 million of the total of 5 million new infections in 2001 occurring on our continent. Similarly, of the 40 million people living with HIV/AIDS, 28.1 million or 70.2% are from sub-Saharan Africa.

While no country in sub-Saharan Africa has escaped to virus, some are far more severely affected than others. According to the latest UNAIDS report, the bulk of new infections continue to be concentrated in Eat and especially Southern Africa.

The following table indicates the progression of HIV/AIDS and the economical impacts associated with each progression.

Year	Progression of HIV/AIDS	Economic Impact
0	Infection occurs	-No cost
0-5	Incubation period	-Little or no costs
6-7	HIV/AIDS-related morbidity begins	-Increased sick leave and absenteeism -Reduced productivity -Increased medical costs -Employee requires attention from occupational health, supervisory, human resource and employee assistance personnel
8-10	Employment terminated due to resignation, medical incapacity or death	-Death and/or disability claims -Retirement benefits claims by employee or dependants -Increased medical costs continues post-employment for employees on medical schemes -Company-sponsored loans not repaid -Funeral expenses -Compassionate leave for co-employees to attend funeral -Negative effect on morale and productivity of co-employees -Costs of keeping employee on payroll until medical separation procedures have been completed
8-10	Company recruits and retrains a replacement employee	-Cost of temporary staff or overtime until new employee is operational -Cost of recruitment, training and induction -Salary during training/induction period -Initial lower productivity -Time spent by other employee on in-service training

Table 1.17.2 Economic impacts of HIV/AIDS

It is important for all personnel manager to take note of the possible implications of the disease on his workforce. Ay employer must also realise that a certain responsibility towards employees must be accepted. .

1.18 Sensitive Environmental Features:

1.18.1 Features Requiring Protection:

There are no environmental features identified on the mining area that require protection.

1.18.2 Features Requiring Remediation:

There are no environmental features identified on the mining area that require remediation.

1.18.3 Features Requiring Management:

The following environmental features identified as sensitive, will require specific management measures:

- Air Quality (dust fallout monitoring).
- Noise Pollution (noise levels monitoring).

1.18.4 Features Requiring Avoidance:

There are no environmental features identified on the mining area that require avoidance.

1.19 End Land Use Objectives:

After rehabilitation the mining area is expected to be grazing.

Chapter 2 – Project Description:

MPRDA Section 39 (3)(b)(i)
MPRDA Section 39 (3)(d)(i)

2.1 Surface infrastructure:

2.1.1 Roads, Railways and Power Lines:

See **Map 1 – Regulation 2(2) Plan** and **Map 3 – Locality Plan** attached hereto as **Annexure A** for location of access roads. No railway or power line passes through or nearby the application area.

2.1.2 Industrial and Domestic Waste Disposal Sites:

Domestic waste will be disposed of in suitable covered receptacles on the application area. The waste disposal site adjacent to the mining area will be used.

All used oils, grease or hydraulic fluids shall be placed in suitable covered receptacles and will be removed from the site on a regular basis for disposal at a registered or licensed disposal site.

Mine residue to be produced by the proposed activities is considered to be minimal and will consist primarily of cleared vegetation. The residue will be disposed of at a registered waste disposal site.

Arlington
Classified for General Waste
Schoenmakers Kop Road
Walmer

2.1.3 Water Pollution Management Facilities:

No sewage treatment plant will be established at any of the site. Chemical or toilets of the "Enviroloo" type will be provided for quarry personnel. One toilet per 10 persons will be available on the site for the duration of the operation.

- **Pollution Control Structures:**

  Pollution of water should not occur and pollution control dams are not required.

- **Polluted Water Treatment Facility:**

  Not Applicable

2.1.4 Potable Water Plant Location, it's design Capacity and the Process to be Used

No potable water treatment plant will be necessary on site. Potable water will be transported to the proposed mining area as required.

2.1.5 Process Water Supply System, it's design Capacity and the Process to be Used

No water supply system for dust control is necessary for the proposed mining area as water will be obtained from the existing water supply system at the refuse site adjacent to the mining area in consultation with the said local municipality.

2.1.6 Mineral Processing Plant:

The material will be beneficiated through the mobile dry screen on site.

2.1.7 Workshops and Administration Buildings:

Only temporary structures will be erected on the site.

2.1.8 Housing and Recreational Facilities:

Not Applicable

2.1.9 Transport:

The existing road network will be used. No new road is required on the site or to transport the product from the site.

2.1.10 Water Balance Diagram

Not Applicable

2.1.11 Disturbances of Water Courses

Not Applicable

2.1.12 Storm Water

The quarry excavation will form a "basin" with the sides sloping into the excavation area. Therefore runoff will run into the excavation.

2.2 General Description:

2.2.1 Description of the mining methods:

The open cast mining method, namely bench mining, will be practised for the extraction of the sand. The overburden and top soil will be stockpiled separately and will be utilised for rehabilitation purposes. The material will be extracted with an excavator where after it will be removed by dumper trucks. The material will be screened where after the sand will be loaded onto the trucks. The mobile screen will situated on the mining area.

The process below illustrates the method precisely:

1 Sand is loaded from the quarry with the front end loader on to the mobile screening plant.
2 Sand is then transported via a conveyer to the screening bin.
3 Sand is screened, to remove the sticks and stones.
4 Screened sand is then transported via conveyer to the stock pile area.
5 Screened sand goes to stock pile area.
6 Trucks get loaded from the stockpile

Topsoil clearing

1 Topsoil is stockpiled
2 Bulldozer separates topsoil and subsoil
3 Usable material, which has been excavated, and will be screened.
4 Area being rehabilitated.
5 Screening Plant.

It can be seen that the rehabilitated area is at a lower level than the area to be mined.

All topsoil is preserved for future use in the rehabilitation process.

2.2.2 Forecast of annual production rates:

Production Rate:

Table 2.2.1: The planned optimal (Maximum) production rate is 82,000m³ per annum of sand.

PRODUCTION ESTIMATES - ARLINGTON QUARRY

ARLINGTON Quarry - PREDICTED Total Sand Sales per month in m^3		Increase
Month/Year	Total Sand	
Mar-10	7000	
Apr-10	6000	
May-10	7000	
Jun-10	7000	
Jul-10	8000	
Aug-10	8000	
Sep-10	8000	
Oct-10	9000	
Nov-10	8000	
Dec-10	4000	
Jan-11	4000	
Feb-11	6000	
Mar-11	7560.00	8%
Apr-11	6480.00	8%
May-11	7560.00	8%
Jun-11	7560.00	8%
Jul-11	8640.00	8%
Aug-11	8640.00	8%
Sep-11	8640.00	8%
Oct-11	9720.00	8%
Nov-11	8640.00	8%
Dec-11	4320.00	8%
Jan-12	4320.00	8%
Feb-12	6480.00	8%
Mar-12	8164.80	8%
Apr-12	6998.40	8%
May-12	8164.80	8%
Jun-12	8164.80	8%
Jul-12	9331.20	8%
Aug-12	9331.20	8%
Sep-12	9331.20	8%
Oct-12	10497.60	8%
Nov-12	9331.20	8%
Dec-12	4665.60	8%
Jan-13	4665.60	8%
Feb-13	6998.40	8%
Mar-13	8817.98	8%
Apr-13	7558.27	8%
May-13	8817.98	8%
Jun-13	8817.98	8%
Jul-13	10077.70	8%
Aug-13	10077.70	8%
Sep-13	10077.70	8%
Oct-13	11337.41	8%
Nov-13	10077.70	8%
Dec-13	5038.85	8%

ARLINGTON Quarry - Total Sales Sand per annum (March to Feb)		
Year	Total Sand	Ave/month
2011	82000	9111.11
2012	88560.00	7380.00
2013	95644.80	7970.40
2014	103296.38	8608.03
2015	111560.09	9296.67
2016	120484.90	10040.41
2017	130123.69	10843.64
2018	140533.59	11711.13
2019	151776.28	12648.02
2020	163918.38	13659.86
2021	177031.85	14752.65
2022	191194.40	15932.87
2023	206489.95	17207.50
2024	223009.15	18584.10
2025	240849.88	20070.82

Jan-14	5038.85	8%
Feb-14	7558.27	8%
Mar-14	9523.42	8%
Apr-14	8162.93	8%
May-14	9523.42	8%
Jun-14	9523.42	8%
Jul-14	10883.91	8%
Aug-14	10883.91	8%
Sep-14	10883.91	8%
Oct-14	12244.40	8%
Nov-14	10883.91	8%
Dec-14	5441.96	8%
Jan-15	5441.96	8%
Feb-15	8162.93	8%
Mar-15	10285.30	8%
Apr-15	8815.97	8%
May-15	10285.30	8%
Jun-15	10285.30	8%
Jul-15	11754.62	8%
Aug-15	11754.62	8%
Sep-15	11754.62	8%
Oct-15	13223.95	8%
Nov-15	11754.62	8%
Dec-15	5877.31	8%
Jan-16	5877.31	8%
Feb-16	8815.97	8%
Mar-16	11108.12	8%
Apr-16	9521.25	8%
May-16	11108.12	8%
Jun-16	11108.12	8%
Jul-16	12694.99	8%
Aug-16	12694.99	8%
Sep-16	12694.99	8%
Oct-16	14281.87	8%
Nov-16	12694.99	8%
Dec-16	6347.50	8%
Jan-17	6347.50	8%
Feb-17	9521.25	8%
Mar-17	11996.77	8%
Apr-17	10282.95	8%
May-17	11996.77	8%
Jun-17	11996.77	8%
Jul-17	13710.59	8%
Aug-17	13710.59	8%
Sep-17	13710.59	8%
Oct-17	15424.42	8%
Nov-17	13710.59	8%
Dec-17	6855.30	8%
Jan-18	6855.30	8%
Feb-18	10282.95	8%
Mar-18	12956.51	8%
Apr-18	11105.58	8%
May-18	12956.51	8%
Jun-18	12956.51	8%
Jul-18	14807.44	8%
Aug-18	14807.44	8%
Sep-18	14807.44	8%
Oct-18	16658.37	8%
Nov-18	14807.44	8%
Dec-18	7403.72	8%
Jan-19	7403.72	8%

Feb-19	11105.58	8%
Mar-19	13993.03	8%
Apr-19	11994.03	8%
May-19	13993.03	8%
Jun-19	13993.03	8%
Jul-19	15992.04	8%
Aug-19	15992.04	8%
Sep-19	15992.04	8%
Oct-19	17991.04	8%
Nov-19	15992.04	8%
Dec-19	7996.02	8%
Jan-20	7996.02	8%
Feb-20	11994.03	8%
Mar-20	15112.47	8%
Apr-20	12953.55	8%
May-20	15112.47	8%
Jun-20	15112.47	8%
Jul-20	17271.40	8%
Aug-20	17271.40	8%
Sep-20	17271.40	8%
Oct-20	19430.32	8%
Nov-20	17271.40	8%
Dec-20	8635.70	8%
Jan-21	8635.70	8%
Feb-21	12953.55	8%
Mar-21	16321.47	8%
Apr-21	13989.83	8%
May-21	16321.47	8%
Jun-21	16321.47	8%
Jul-21	18653.11	8%
Aug-21	18653.11	8%
Sep-21	18653.11	8%
Oct-21	20984.75	8%
Nov-21	18653.11	8%
Dec-21	9326.56	8%
Jan-22	9326.56	8%
Feb-22	13989.83	8%
Mar-22	17627.19	8%
Apr-22	15109.02	8%
May-22	17627.19	8%
Jun-22	17627.19	8%
Jul-22	20145.36	8%
Aug-22	20145.36	8%
Sep-22	20145.36	8%
Oct-22	22663.53	8%
Nov-22	20145.36	8%
Dec-22	10072.68	8%
Jan-23	10072.68	8%
Feb-23	15109.02	8%
Mar-23	19037.37	8%
Apr-23	16317.74	8%
May-23	19037.37	8%
Jun-23	19037.37	8%
Jul-23	21756.99	8%
Aug-23	21756.99	8%
Sep-23	21756.99	8%
Oct-23	24476.61	8%
Nov-23	21756.99	8%
Dec-23	10878.49	8%
Jan-24	10878.49	8%

Feb-24	16317.74	8%
Mar-24	20560.36	8%
Apr-24	17623.16	8%
May-24	20560.36	8%
Jun-24	20560.36	8%
Jul-24	23497.55	8%
Aug-24	23497.55	8%
Sep-24	23497.55	8%
Oct-24	26434.74	8%
Nov-24	23497.55	8%
Dec-24	11748.77	8%
Jan-25	11748.77	8%
Feb-25	17623.16	8%

2.2.3 Infrastructure:

No infrastructure will be erected on the application area.

2.3 Mining Activities:

Table 2.3 Mining Phases and Activities.

Phase:	Activity:	Description:
Construction Phase:	Due to the fact that no infrastructure will be established on the mining area, there will be no construction phase.	
Operational Phase:	Topsoil	When topsoil is removed and stored, it will be done according to the Soil Utilisation Guide below. **Soil Utilisation Guide:** The following design parameters will be taken into account when designing the topsoil stockpiles: -Topsoil will be removed to a depth of 300mm. -The stockpiles must be constructed on the most gradual slope possible. -The slope of the stockpile material must be kept as low and possible to avoid extensive erosion of the natural resource. -If erosion does occur the stockpiles can be stabilised through re-vegetation with pioneering grass species. Species include *Eragrostis curvula* and *Melinis repens.* -Soil fertility need to be assessed and ameliorated where necessary prior to re-vegetation in order to ensure optimal growth.
Operational Phase	Excavating	Sand mining will be conducted with a front end loader general opencast mining methods. The sand will be processed through the said dry mobile sand screen and then be sold.
Operational Phase:	Hauling	Sand will be hauled with a front end loader from the excavation area to the said plant.
Operational Phase:	Backfilling	The mined out areas of the quarry pit will be backfilled on a continuous basis using the overburden material.

Operational Phase:	Levelling and Sloping	Mined out areas are levelled and sloped to an angel of 1:3 or flatter where possible.
Operational Phase:	Replacing topsoil	After the mined out areas are levelled and sloped, any available stockpiled topsoil will be replaced and levelled over the areas.
Operational Phase:	Vegetating	After topsoil is returned to the levelled and sloped, mined-out areas, a grass seed mixture including *Eragrostis spp* and any other endemic species found surrounding the area will be sown.
Operational Phase:	Dust Suppression	Approximately 5,000 litres of water will be sprayed onto the roads daily for dust suppression purposed, but is only expected to be required during the drier seasons of the year. This water will partly evaporate and partly drain into the soils. Water for dust suppression will be obtained from the said local municipality.
Closure Phase	Final Replacing of Topsoil	After final levelling and sloping, any remaining available topsoil will be replaced over any remaining un-rehabilitated areas.
Closure Phase	Final Backfilling and Sloping	Once mining is ceased, the stockpiled overburden will be backfilled into the mined-out pit. After final backfilling is completed, all material will be left at a slope of at least 1:3.
Closure Phase	Final Vegetating	A grass seed mixture including *Eragrostis spp* and any other endemic species found surrounding the area will be sown on all areas where vegetation growth has not established successfully.
Closure Phase	Dust Suppression	While rehabilitation activities are in progress, water will be sprayed onto the roads and uncovered areas for dust suppression purposes. This water will partly evaporate

		and partly drain into the soils.
Post-Closure Phase	Erosion Control	For a period of at least two years after final rehabilitation, the area will be monitored for occurrence of erosion. Any newly eroded areas found will be remediated
Post-Closure Phase	Vegetation monitoring	Vegetation will be monitored for a period of at lest two years after final rehabilitation. Any area where the vegetation cover is insufficient will be re-vegetated with a similar seed mixture as above.

Chapter 3 – Anticipated Impacts Assessment:

MPRDA Regulation 49 (1)(c)

3.1 Engagement Process with I&AP's:

All I&AP's will be notified of the mining right application and provided the opportunity to comment on it. The following steps will be taken to ensure that all I&AP's are given the opportunity to raise their concerns if any:

- A site notice will be placed at the entrance to the application area and other strategic points. The notices will be placed in such a way to ensure that they are clear and visible.
- An advertisement will be placed in one of the local newspapers, notifying people from the surrounding communities of the mining right application and providing them with the opportunity to raise their concerns or to obtain more information.
- In the scenario where a lot of responses are received from I&AP's a public meeting could will be held.

3.2 Potential Environment Impacts Identified by I&AP's:

As the public participation process is still in progress, no impacts are as yet identified by any I&AP's. Any impacts identified through the public participation process will be incorporated and addressed in the EMPR.

3.3 Potential Environmental Impacts Identified by State Departments:

No such impacts are as yet identified by State Departments. Any impacts identified by the State Departments will be incorporated and addressed in the EMPR.

3.4 Potential Environmental Impacts of the Mining Activities:

The following table indicates the possible impacts that may occur from the mining activities

Table 3.4.1 Possible Construction Phase Impacts

Construction Phase:		
Activity:	**Environmental Aspect:**	**Impact**
No construction phase will take place.		

Table 3.4.2 Possible Operational Phase Impacts

	Construction Phase:	
Activity:	**Environmental Aspect:**	**Impact**
Topsoil Removal:	**Geology:**	No impact
	Topography:	The removal of topsoil will create a lowered topography.
	Soil:	The topsoil is removed to a stockpile.
	Flora:	Vegetation is removed completely
	Fauna:	Fauna will leave the area temporarily.
	Surface Hydrology:	The lowered topography will alter the surface water runoff patterns.
	Groundwater:	No impact.
	Air Quality:	An increase in dust levels due to vehicle movement and excavation.
	Noise:	Vehicles and machinery will cause an increase in the noise levels.
	Visual Aspects:	No impact.
Excavating:	**Geology:**	The geological structure is removed through excavating.
	Topography:	Excavating will create a lowered topography and leave a final void.
	Soil:	The underlying soil structure (overburden) is removed and stockpiled.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	The lowered topography and final void will alter the surface water runoff patterns.
	Groundwater:	No impact.
	Air Quality:	Excavating will cause an increase in dust levels.
	Noise:	Excavating will cause an increase in dust levels.
	Visual Aspects:	No impact.
Hauling:	**Geology:**	No impact.
	Topography:	No impact.
	Soil:	No impact.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	No impact.
	Groundwater:	No impact.
	Air Quality:	Hauling will cause an increase in dust levels.

	Noise:	Hauling will cause an increase in dust levels.
	Visual Aspects:	No impact.
Blasting:	**Geology:**	No blasting will take place which will have no impact.
	Topography:	No blasting will take place which will have no impact.
	Soil:	No blasting will take place which will have no impact.
	Flora:	No blasting will take place which will have no impact.
	Fauna:	No blasting will take place which will have no impact.
	Surface Hydrology:	No blasting will take place which will have no impact.
	Groundwater:	No blasting will take place which will have no impact.
	Air Quality:	No blasting will take place which will have no impact.
	Noise:	No blasting will take place which will have no impact.
	Visual Aspects:	No blasting will take place which will have no impact.
Backfilling:	**Geology:**	The backfilling of overburden restores the geological material, but with an altered geological structure.
	Topography:	The void left by excavating is partially backfilled using overburden, thus minimising the initial negative impact. The topography however remains altered when compared with the natural topography.
	Soil:	No impact.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	Backfilling will alter the topography and cause a change in surface water runoff patterns.
	Groundwater:	No impact.
	Air Quality:	Movement of vehicles and machinery, together with dumping of overburden into the pit will increase dust levels.
	Noise:	Movement of vehicles and machinery will increase noise levels.
	Visual Aspects:	No impact.
Replacing Topsoil:	**Geology:**	No impact.
	Topography:	The replacing of topsoil over the

		partially backfilled pit or excavation areas will have the final alteration on the topography.
	Soil:	The replacing of topsoil creates a new, altered soil structure.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	The replacing of topsoil over the partially backfilled pit or excavation areas will have the final alteration on the topography and changed runoff patterns.
	Groundwater:	No impact.
	Air Quality:	Movement of vehicles and machinery will increase the dust levels.
	Noise:	Movement of vehicles and machinery will increase the noise levels.
	Visual Aspects:	No impact.
Vegetating:	**Geology:**	No impact.
	Topography:	No impact.
	Soil:	Vegetating the disturbed areas will prevent soil erosion.
	Flora:	Vegetating the disturbed areas with endemic species will create a new altered habitat for fauna.
	Fauna:	Vegetating the disturbed areas with endemic species will create a new altered habitat for fauna.
	Surface Hydrology:	No impact.
	Groundwater:	No impact.
	Air Quality:	No impact.
	Noise:	No impact.
	Visual Aspects:	No impact.
Dust Suppression:	**Geology:**	No impact.
	Topography:	No impact.
	Soil:	No impact.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	No impact.
	Groundwater:	Water spayed on the roads or disturbed areas may seep into the groundwater system.
	Air Quality:	Water sprayed on the roads or disturbed areas will reduce dust pollution of moving vehicles.
	Noise:	The movement of vehicles will increase the noise levels.
	Visual Aspects:	No impact.

Table 3.4.3 Possible Closure Phase Impacts

	Closure Phase:	
Activity:	**Environmental Aspect:**	**Impact**
Final Backfilling and Sloping:	**Geology:**	The backfilling of overburden restores the geological material, but with an altered geological structure.
	Topography:	The void left by excavating is partially backfilled using overburden, thus minimising the initial negative impact. The topography however remains altered when compared with the natural topography.
	Soil:	Sloping will result in a new, altered soil structures.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	Backfilling will alter the topography and cause a change in surface water runoff patterns.
	Groundwater:	No impact.
	Air Quality:	Movement of vehicles and machinery will increase dust levels.
	Noise:	Movement of vehicles and machinery will increase noise levels.
	Visual Aspects:	No impact.
Final Replacing of Topsoil:	**Geology:**	No impact.
	Topography:	The replacing of topsoil over the partially backfilled pit or excavation areas will have the final alteration on the topography.
	Soil:	The replacing of topsoil creates a new, altered soil structure.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	No impact.
	Groundwater:	No impact.
	Air Quality:	Movement of vehicles and machinery will increase the dust levels.
	Noise:	Movement of vehicles and machinery will increase the noise levels.
	Visual Aspects:	No impact.
Vegetating:	**Geology:**	No impact.
	Topography:	No impact.

	Soil:	Vegetating the disturbed areas will prevent soil erosion.
	Flora:	Vegetating the disturbed areas with endemic species will create a new altered habitat for fauna.
	Fauna:	Vegetating the disturbed areas with endemic species will create a new altered habitat for fauna.
	Surface Hydrology:	No impact.
	Groundwater:	No impact.
	Air Quality:	No impact.
	Noise:	No impact.
	Visual Aspects:	No impact.
Dust Suppression:	**Geology:**	No impact.
	Topography:	No impact.
	Soil:	No impact.
	Flora:	No impact.
	Fauna:	No impact.
	Surface Hydrology:	No impact.
	Groundwater:	Water spayed on the roads or disturbed areas may seep into the groundwater system.
	Air Quality:	Water sprayed on the roads or disturbed areas will reduce dust pollution of moving vehicles.
	Noise:	The movement of vehicles will increase the noise levels.
	Visual Aspects:	No impact.

Table 3.4.4 Possible Post-closure Phase Impacts

Erosion Control:	**Geology:**	No impact.
	Topography:	No impact.
	Soil:	Erosion control and monitoring will limit erosion and disturbance of the rehabilitated surfaces.
	Flora:	Erosion control and monitoring will limit erosion and protect the growth medium.
	Fauna:	No impact.
	Surface Hydrology:	Erosion control will maintain the newly formed, changed runoff patterns.
	Groundwater:	No impact.
	Air Quality:	No impact.
	Noise:	No impact.
	Visual Aspects:	No impact.
Dust Suppression:	**Geology:**	No impact.
	Topography:	No impact.
	Soil:	No impact.
	Flora:	Re-vegetating areas where the seeding of first vegetating was not successful will reduce the risk of possible erosion.
	Fauna:	No impact.
	Surface Hydrology:	No impact.
	Groundwater:	No impact.
	Air Quality:	No impact.
	Noise:	No impact.
	Visual Aspects:	No impact.

3.5 Knowledge Gaps

No knowledge gaps anticipated.

Chapter 4 – Socio-economic Impact Assessment:

MPRDA Regulation 49 (1) (c)

4.1 Engagement Process with I&AP's:

See Section 3.1 above for the engagement process in progress.

4.2 Potential Impacts Identified by I&AP:

As the public participation process is still in progress, no impacts are as yet identified by any I&AP's. Any impacts identified through the public participation process will be incorporated and addressed in the AMPR.

4.3 Potential Impacts Identified by State Departments:

No such impacts are as yet identified by State Departments. Any impacts identified by the State Departments will be incorporated and addressed in the EMPR.

4.4 Assessment of Potential Impacts Identified:

Due to the fact that the public participation process is still in progress, no potential impacts were indicated by I&AP's or State Departments as of yet.

4.5 Comparative Land Use Assessment:

No comparative land use and/or development alternatives were considered until such time as all comments from I&AP's have been gathered.

Chapter 5 – Heritage Impact Assessment:

MPRDA Regulation 49(1) (c)

5.1. Engagement Process with I&AP's:

See Section 3.1 above for the engagement process in progress.

5.2. Potential Impacts Identified by I&AP :

As the public participation process is still in progress, no impacts are as yet identified by any I&AP's. Any impacts identified through the public participation process will be incorporated and addressed in the EMPR.

5.3. Potential Impacts Identified by State Departments:

No such impacts are as yet identified by State Departments. Any impacts identified by the State Departments will be incorporated and addressed in the EMPR.

5.4. Assessment of Potential Impacts identified:

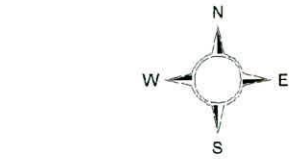
Due to the fact that the public participation process is still in progress no potential impacts were indicated by I&AP's or State Departments as of yet.

5.5. Knowledge Gaps:

No knowledge gaps anticipated.

ANNEXURE A
Map 1 – Locality Plan

Locality Plan:
Inzulu Mining co (PTY)Ltd Co Reg No 2003/010519/07



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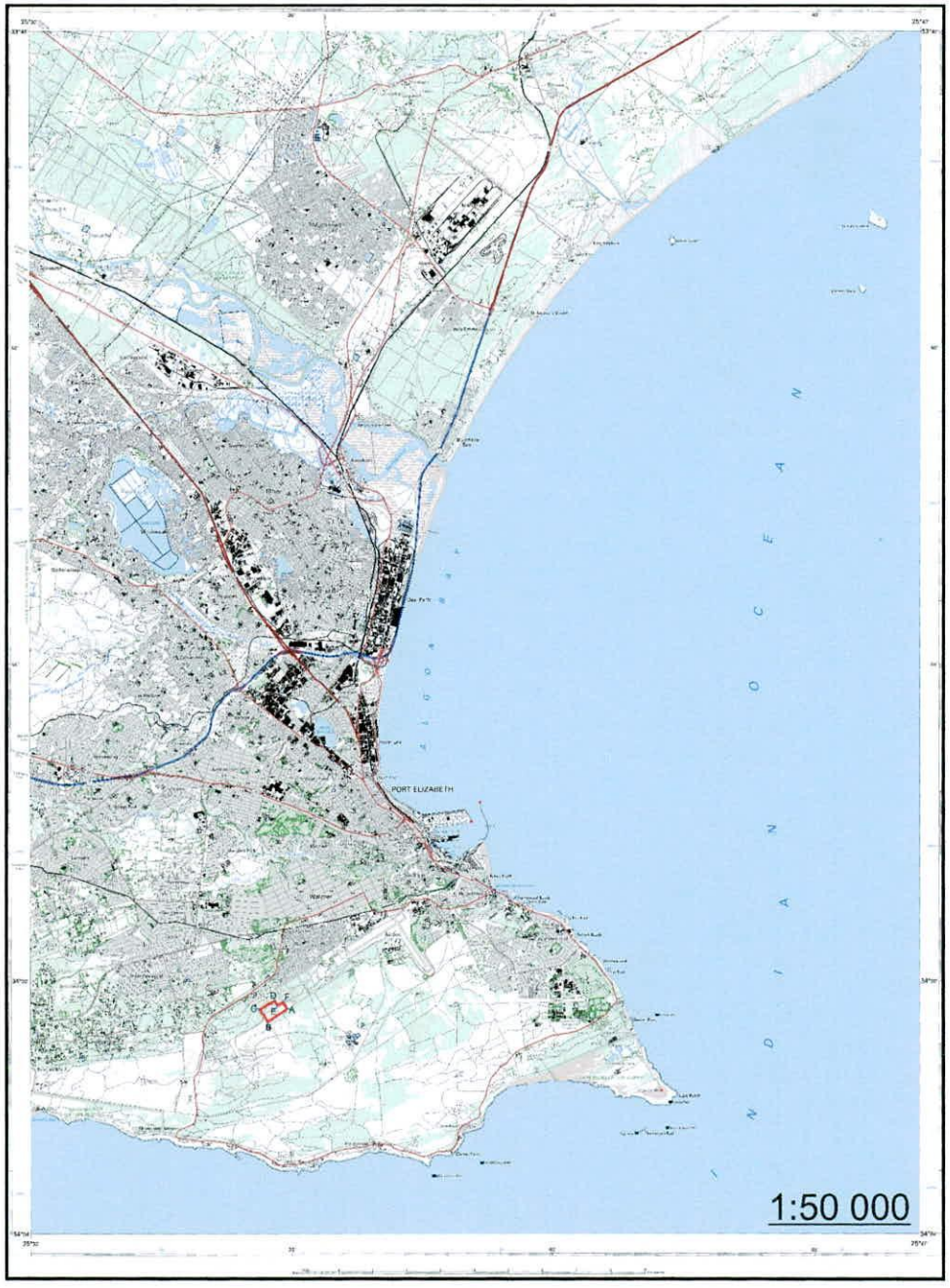
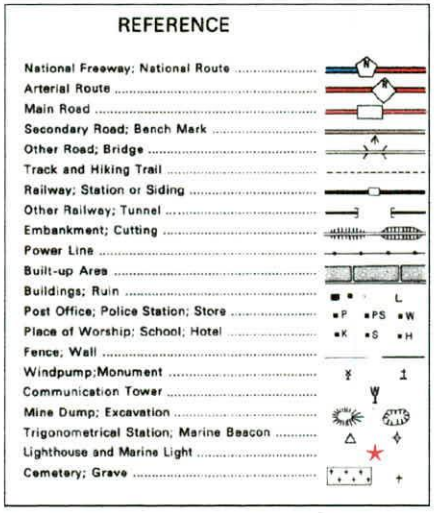
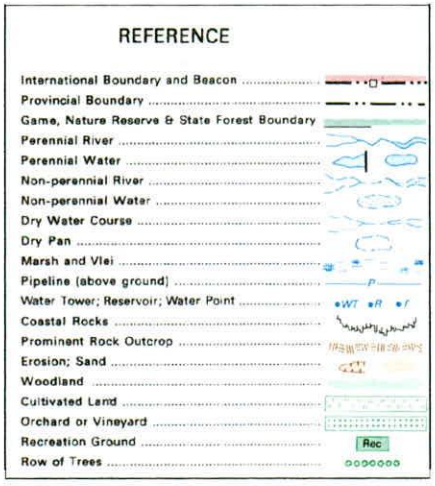


Description:

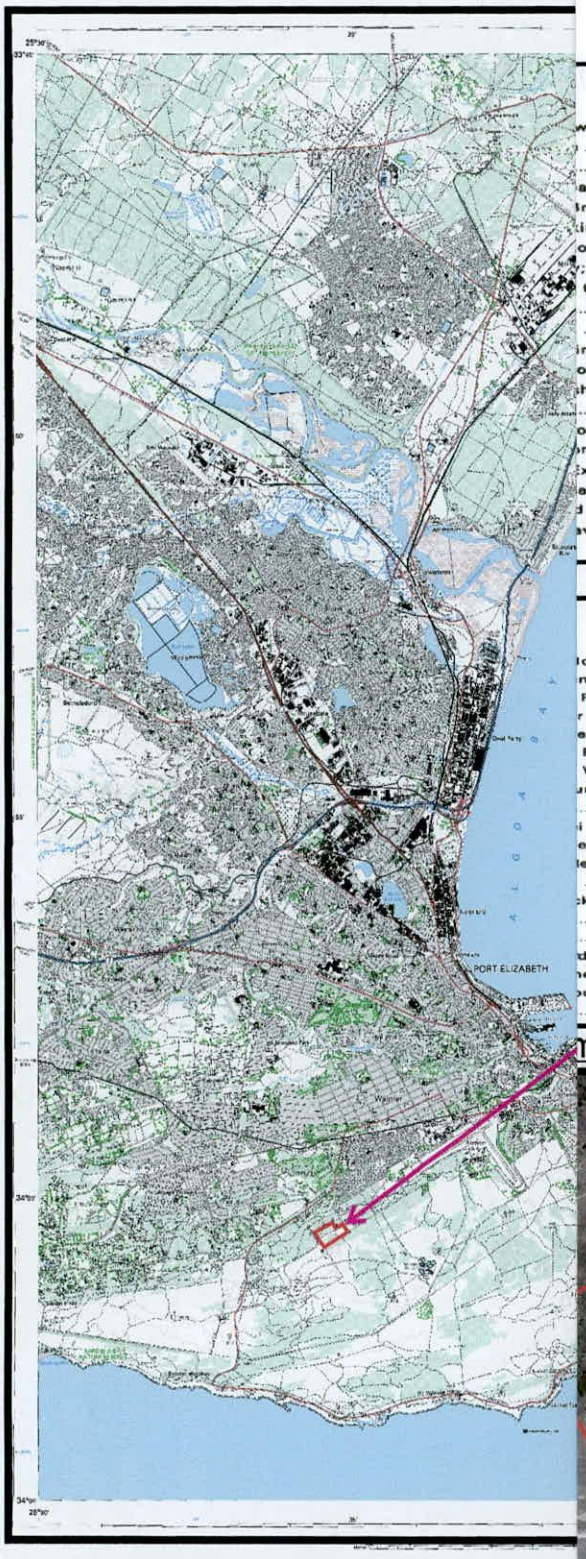
The figure A,B,C,D,E,F,A, represents the mining area in extent of 24.648 ha, namely a portion of the R\E of Erf 1948 in the Port Elizabeth Magisterial District, relating to an new application for a mining right in terms of section 22 of the MPRDA, for Sand.

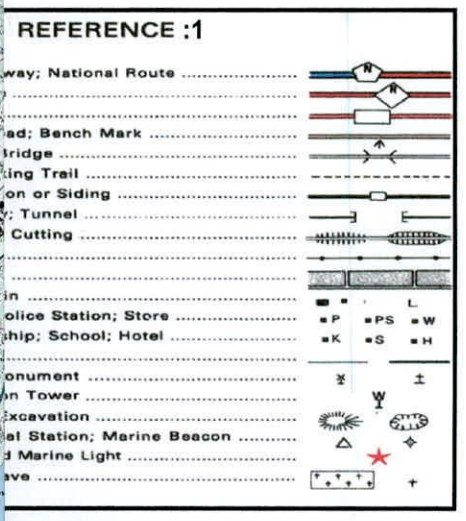


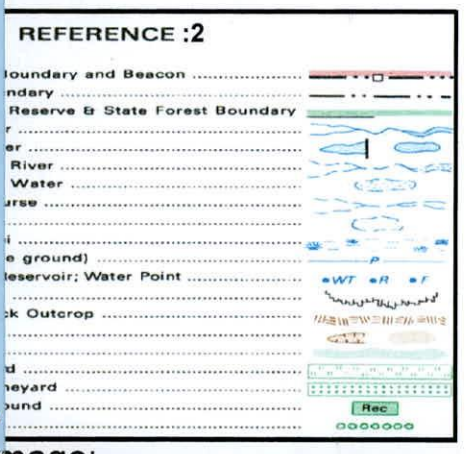


Map 2 – Regulation 2(2) Plan

Regulation 2(2) Plan
Inzulu Mining Co (Pty)





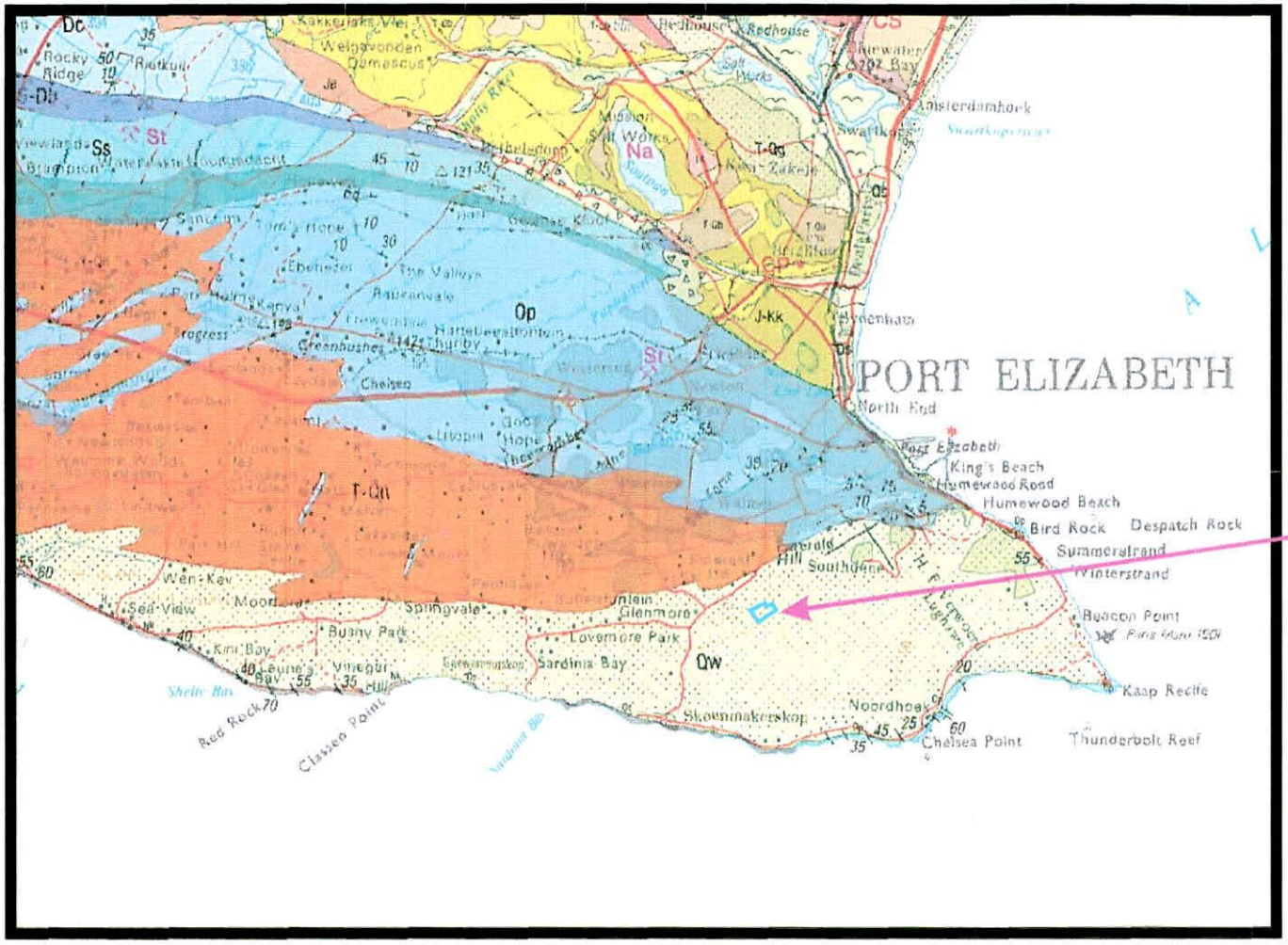


mage:

Description:
The figure A,B,C,D,E,F,A, re
the R\E of Erf 1948 in the Pc
mining right in terms of secti

ed:

ANNEXURE B
Map 3 – Geology Plan



Geological Map:
Inzulu Mining co (PTY)Ltd
Co Reg 2003/010519/07