



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

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From: Directorate: Mineral Regulation: Northern Cape **Date:** 16 November 2010
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Ref No.: NC 30/5/1/2/3/2/1/287EM

The Director
South African Heritage Resources Agency
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Attention: Mrs Nonofho Ndobochani

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) FOR THE SCOPING REPORT FOR MINING RIGHT IN RESPECT OF AGGREGATE (DOLERITE), GRAVEL, SAND AND STONE AGGREGATE ON PORTION 39 OF THE FARM SPIJTFONTEIN 122, SITUATED IN THE MAGISTERIAL DISTRICT OF KIMBERLEY, NORTHERN CAPE REGION.

APPLICANT: ORANJE MYNBOU EN VERVOER (PTY) LTD

Attached herewith, please find a copy of a Scoping report received from the above-mentioned applicant, for your comments.

It would be appreciated if you could forward any comments or requirements your Department may have in the case in hand to this office and to the applicant on or before the **17 December 2010** failure of which will lead to the assumption that your Department has no objection(s) or comments with regard to this application and this Department will in that instance proceed with the finalization thereof.

Consultation in this regard has also been initiated with other relevant State Departments. In an attempt to expedite the consultation process please contact **Vincent Mula** of this office to make arrangements for a site inspection or for any other enquiries with regard to this application.

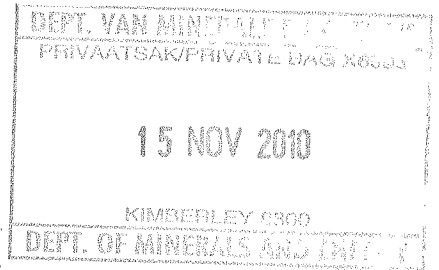
Your co-operation will be appreciated.

.....
**REGIONAL MANAGER: MINERAL REGULATION
NORTHERN CAPE REGION**

Scoping Report

Mining Right Application

Portion 39 of the farm Spijffontein 122
in the Kimberley District, Northern Cape.



Oranje Mynbou & Vervoer Pty Ltd

(NC) 30/5/1/2/2/0287MR



NOVEMBER 2010

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1 DESCRIPTION OF PROJECT

Oranje Mynbou en Vervoer's principle business objective is mining the **aggregate (dolerite), gravel, sand (Manufactured)- from hard rock and stone aggregate** found in its mining lease area in a sustainable and environmentally and socially responsible manner. To this end the mining method is an open cast mine quarry and crusher / screening plant situated adjacent to the mine pit. The deposit is estimated to be approximately 7 million tons. The known mined depth is 35 meters but drilling has indicated a depth of up to 65 meters.

The product is principally consumed by the following users:

- OMV cement brick manufacturing on site
- Construction industry for mixing stone in concrete
- Roads industry for mixing stone with tar and under-surface stability
- Spoornet for ballast under the railway lines
- The annual sale of stone is approximately 25 000 tons per month which is an estimated 300 000 tons per year.

The principle mining method is open cast mining. The stone crushing operation has been in existence for over forty years. The processing plant at Oranje Mynbou en Vervoer consists of crushing section where the blasted rock is dumped into the primary crusher and fed through a grizley into the secondary crusher and screening sections for size separation before moving on conveyor belts to the various stockpiles.

The DME reference to the above application is: NC 30/5/1/2/2/0287 MR

2 NAME OF APPLICANT AND ADDRESS

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Contact person: Fred Weber

3 METHODOLOGY

Our scoping process will have an integrated approach on the environmental management of the mine. This process requires firstly, a full understanding of the development demand on the mine, which are the activities and facilities associated with the mining process. Secondly, a synopsis of the natural, physical, socio-economic and cultural historical environment is conducted in order to gain understanding of the environmental status quo. Environmental sensitivity of sites are identified that culminates in environmental opportunities and constrains that is used to guide further mining development. Development and project alternatives are identified if applicable and the mine land use is zoned according to its sensitivity. There will be a focus on establishing monitoring programmes to monitor potential impacts, thereby minimizing the environmental liability of the mine.

The following steps will be followed during the scoping process:

- a) We will hold discussions with all the relevant authorities and key interested parties in order to collate available information, to identify information gaps and address their relevant fears and concerns
- b) Any issues and alternatives (social or environmental) will be identified
- c) Concerns will be evaluated in order to assign priority to the more important issues.
- d) A strategy will be developed to address and resolve each key issue
- e) All data will be integrated to be able to understand the environment, the impact on it and the management guidelines that will limit these impacts.

4 PROJECT LOCATION

Kimberley and the OMV mining operation are located in the Northern Cape Province. The magisterial district is the Sol Plaatje Municipality and the Regional Services Authority is the Francis Baard District Municipality.

The nearest town to the mine is Kimberley – 8.6 km. The main access route to the mine is on the N12 to Hopetown.

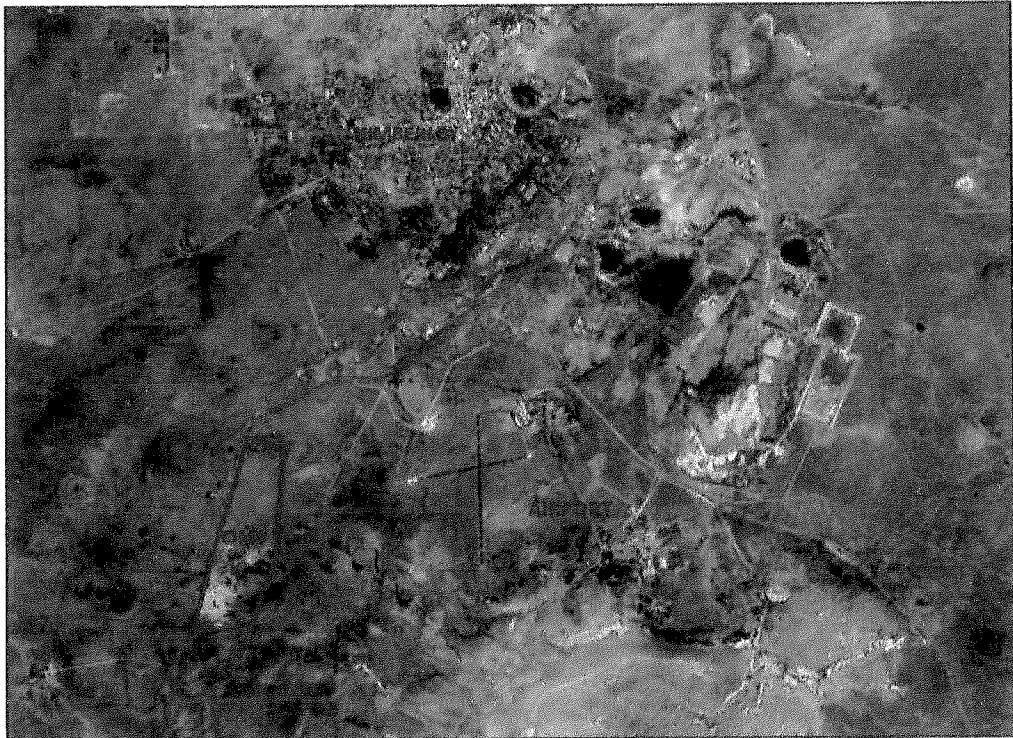


Figure1: Site location



Figure 2: Farm Boundaries and topography

5 DESCRIPTION OF THE EXISTING ENVIRONMENT

The mine falls within the Lower Vaal water management area which is located in the quaternary drainage region C52L of the DWAF. The Vaal River lies further to the north and the Modder River further south of the study area. The OMV quarry forms part of a local endoreic area adjacent and to the north of the Modder River system. This local endoreic area stretches ± 25 km west of Kimberley to ± 30 km east of Kimberley with a north-south width of 7 - 10 km. Due to its flat topography about zero runoff from this local drainage region contributes to the Modder River running ± 10 km south of the site.

The property falls within the Savanna Biome (Low & Rebelo 1996). The Savanna Biome is characterized by grassy ground layer and upper layer of woody plants, in arid regions dominated by Acacia species. The environmental factors delimiting the biome are complex: altitude ranges from sea level to 2 000 m; rainfall varies from 235 to 1 000 mm per year; frost may occur from 0 to 120 days per year; and almost every major geological and soil type occurs within the biome. A major factor delimiting the biome is the lack of sufficient rainfall which prevents the upper layer from dominating, coupled with fires and grazing, which keep the grass layer dominant. Summer rainfall is essential for the grass dominance, which, with its fine material, fuels near-annual fires. In fact, almost all species are adapted to survive fires, usually with less than 10% of plants, both in the grass and tree layer, killed by fire. Even with severe burning, most species can re-sprout from the stem bases.

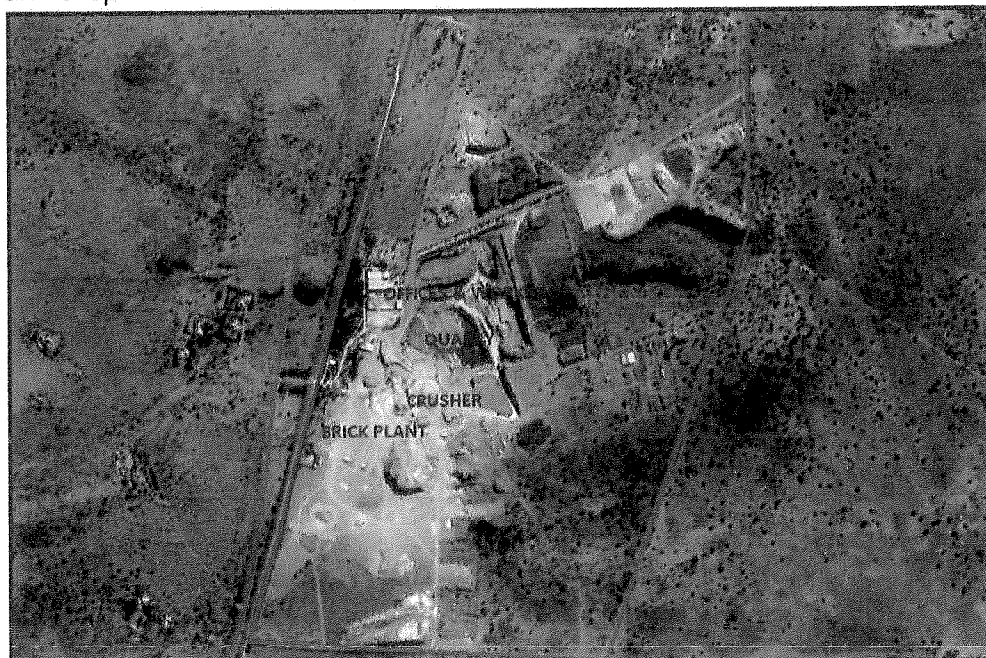


Figure 3: Layout

5.1 Geology

The area is within the Ventersdorp Supergroup overlying the Dolomition Group and Basement complex. The rock mined is hypabyssal dolerite, medium to course grained, consisting essentially of augite and plagioclase. The overburden cover is mainly weathered dolerite with negligible red topsoil. Bands of shale and Kimberlite fissures are interspersed within the massive Dolerite. The Dolerite varies in hardness and depth of the weathering is inconsistent.

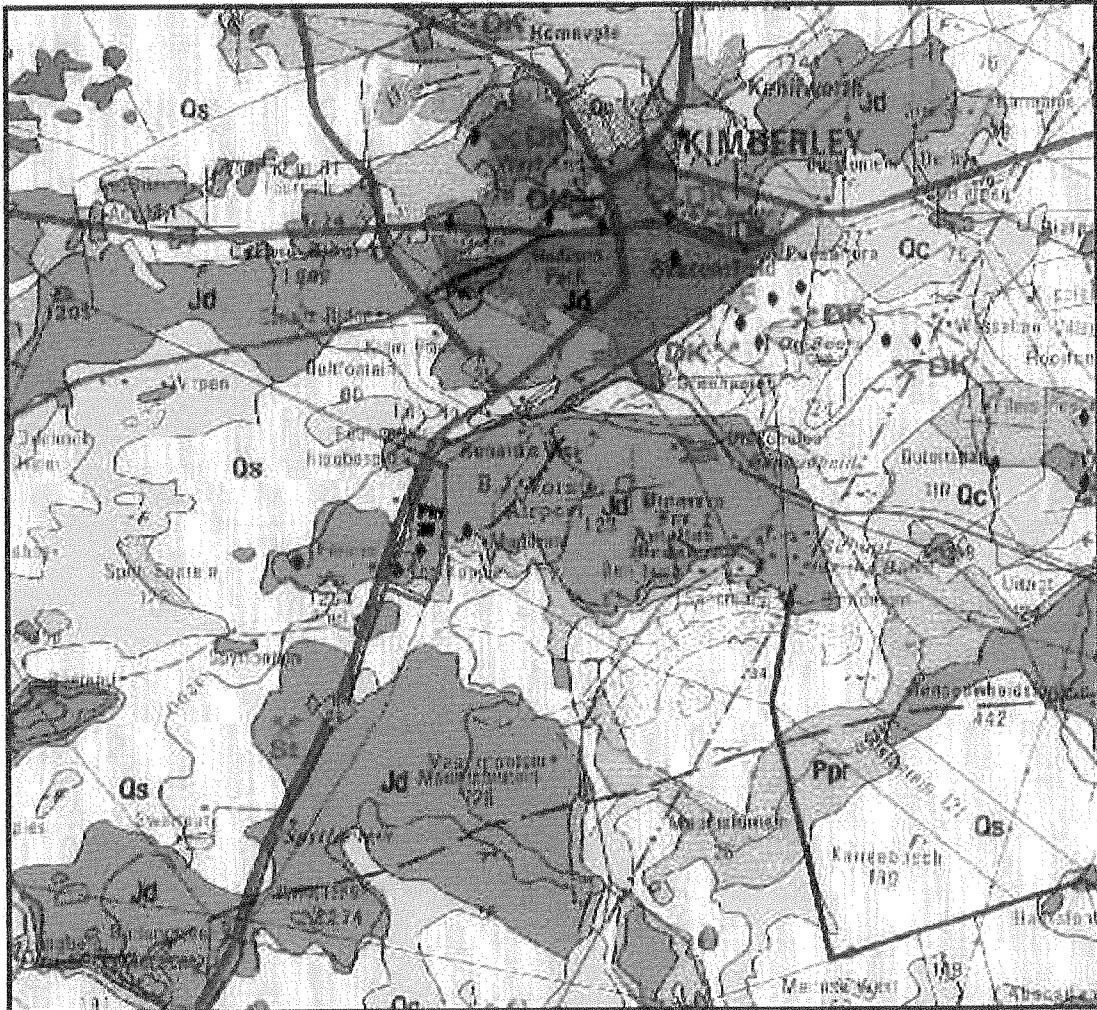


Figure 4: Extract from 1:250 000 Geological map showing farm boundary (in blue) and surrounding geological features.(Jd: Dolerite, Qs: Sand)

5.2 Climate

5.2.1 Regional climate

The mine is located in a semi-arid region, receiving on average about 250mm of rain in the west to 500mm on its eastern boundary. It is situated within the Sn climate region. The rainfall is largely due to showers and thunderstorms falling in the summer months, October to March. The peak of the rainy

season is normally February or March. The summers are very hot with cool winters.

Average monthly and annual temperatures and rainfall for the site and number of days per month with measurable precipitation

Table 1: Average monthly temperature and rainfall data and number of days per month with measurable precipitation

Month	Temperature (° C)				Precipitation		
	Highest Recorded	Average Daily Maximum	Average Daily Minimum	Lowest Recorded	Average Monthly (mm)	Average Number of days with \geq 1mm	Highest 24 Hour Rainfall (mm)
January	40	33	18	7	57	10	45
February	40	31	17	6	76	10	88
March	36	29	15	2	65	10	54
April	35	25	11	0	49	8	51
May	31	21	7	-6	16	3	55
June	27	18	3	-7	7	3	18
July	27	19	3	-8	7	2	22
August	31	21	5	-7	7	2	26
September	36	26	9	-6	12	3	44
October	38	28	12	-1	30	6	35
November	39	30	15	3	42	8	60
December	40	32	17	5	46	8	60
Year	40	26	11	-8	414	71	88

Source: Directorate: Climatology South African Weather Bureau
Station: 0290468 - Kimberley: 1970-2003

Maximum rainfall intensities

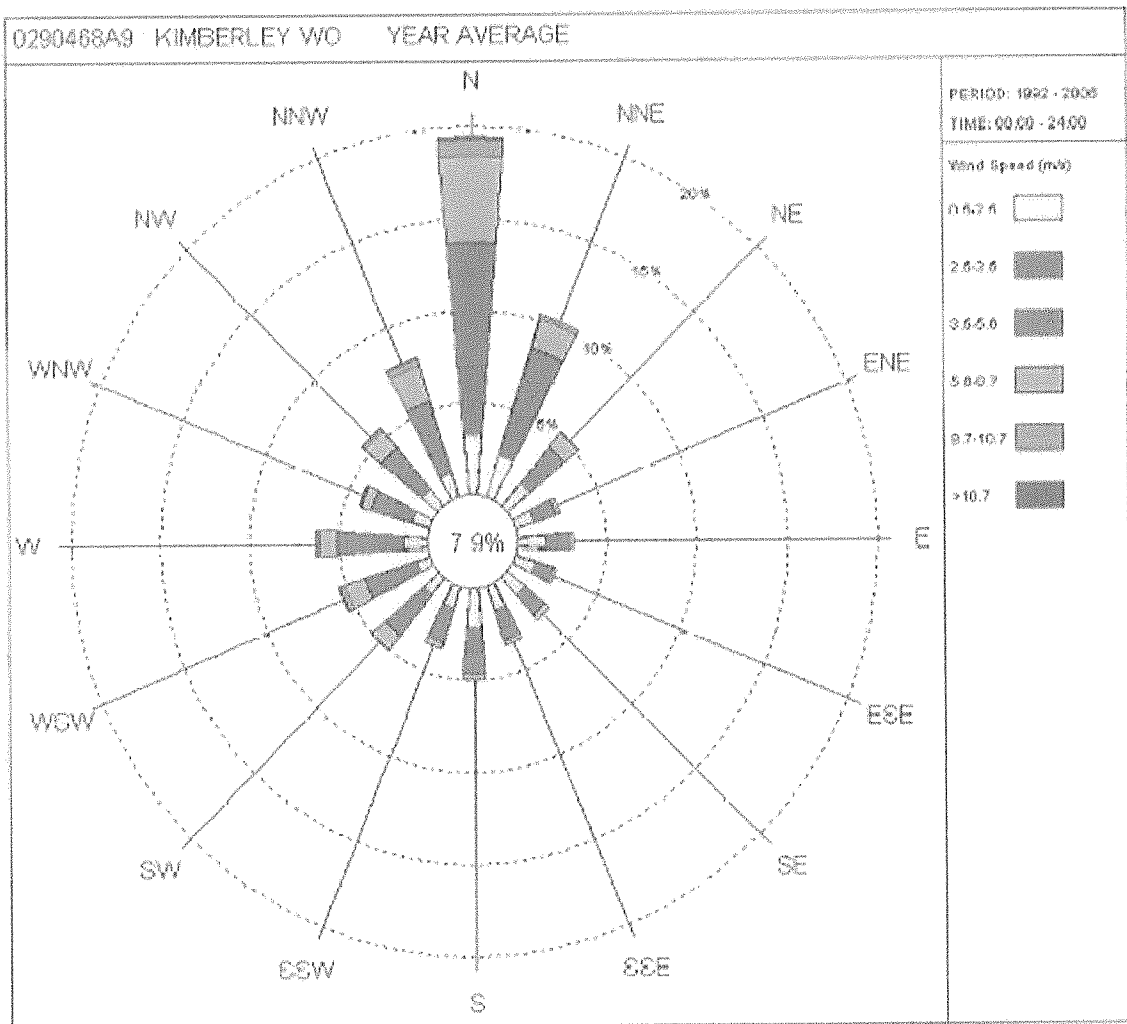
Table 2: Maximum rainfall intensities

MONTH	60 MINUTES	24 HOURS	24 HOURS IN 50 YEARS	24 HOURS IN 100 YEARS
January	35.8	57	65.1	73.8
February	70.1	82	58.9	66.5
March	63.7	67.8	72.1	81.4
April	25.7	51.6	65.9	75.2
May	14.6	54.6	36.8	42.4
June	19.1	67.5	26	30.4
July	12	26.7	26.6	31
August	17	58.2	23.4	27.3
September	16.3	26.7	24.1	28
October	37.6	59.2	53.8	61.8
November	25.2	60.1	41.2	46.7
December	59.9	64.5	70.7	80.9

Source: South Africa (WB42)
Station: 0290468 - Kimberley: 1961-1990

Wind

The mean wind direction is north and the average speed is moderate.
Weather systems and rainfall are driven by northerly winds.



Humidity

Table 4: Monthly relative humidity in the region

MONTH	AVERAGE (%)	MAXIMUM (%)	MINIMUM (%)
January	47	91	8
February	54	94	12
March	57	96	15
April	60	96	16
May	56	96	16
June	54	97	15
July	49	97	13
August	42	94	10
September	36	91	8
October	39	89	8
November	42	92	8
December	43	90	7
Year	48	94	11

Source: Directorate: Climatology South African Weather Bureau © 2000
Station: 0290468 - Kimberley: 1960-2000

Average monthly evaporation

Table 5: Average monthly evaporation data

MONTH	EVAPORATION IN mm SYMONS PAN
January	365.6
February	279.1
March	235.8
April	169.1
May	135.1
June	108.6
July	130.1
August	181.2
September	252.6
October	314.9
November	345.5
December	378.6
YEAR	2896

Source: South Africa Weather Bureau
Station: 0290468 - Kimberley: 1957-1987

Incidence of extreme weather conditions

Hail: Hail is sometimes associated with thunderstorms and mainly occurs in early to late summer (November to February). It occurs on average three times a year and although these storms may sometimes be severe and cause much damage, they usually impact on a relatively small area.

Frost: The period during which frost can be expected lasts for about 120 days (May to August). With extreme minimum temperatures to below -8°C at night in the winter, frost development can be severe.

Droughts: Droughts are common and may vary from mild to severe. During these periods dust storms sometimes occur, depending mainly on denudation of the surface.

Wind: High winds are unusual but when they do occur can uproot trees and cause structural damage.

5.3 Topography

The mine site is situated in undulating ground 1 240 m above sea level. The elevation difference over the quarry area is 1 8 m with a gentle slope to the South-East. The quarry is situated on the South section of the high area and is therefore not visible from the main N12 road.

5.4 Soil

The topsoil consists mainly of a 100 mm to 300 mm uniform layer of typical Kimberley red soil. The sand soil will erode easily if not properly contoured where the gradient is steep. Proper contours will be kept in place to reduce the erosion of the topsoil where the gradient is steep. Dolomite and Kimberlite outcrops occur to the north east of the mining area with deeper sand soil in the southeast section of the mining property. The game farm section on the property has an even cover of sand topsoil with Kimberlite outcrops in the southeast section of the game farm.

The subsoil consists of weathered dolerite to a depth that varies between 1 000 mm and approximately 3 000 mm. Kimberlite fissures with an unknown depth have been exposed through the quarrying operations in the north east section of the mining property.

The dolerite subsoil is resistant to erosion but the Kimberlite decomposes and erodes easily where the gradient is steep. Proper contours will be maintained to reduce the erosion in this area of the mining property.

5.4.1.1 Pre-mining land capability

The 371.47 ha land that has been disturbed by the current mining activity can be classified into the following classes of land capability:

Arable land:	0.0 ha
Grazing land:	371.47 ha
Wetland:	0.0 ha
Wilderness land:	0.0 ha
TOTAL:	371.47 ha

5.5 Land use

Land use before mining

The quarry has been in operation for the past 40 years. The quarry has been separated from the remainder of the game farm. The quarry area is solely used for mining, crushing, screening, brickmaking, readymix concrete and stockpiling.

The historical agricultural use of the land is for sheep, cattle or game farming. The carrying capacity of the land is limited to 14 ha per large stock unit. The low carrying capacity is due to the arid conditions and nature of vegetation.

Evidence of disturbance

The vegetation of the quarry section on the farm Spijfontein shows various degrees of retrogression from the normal Kalahari Thornveld. The absence of the *Acacia eriolabia* (camel thorn) and *Themeda triandra* (red grass) and the presence of many weeds and karoo species are indicative that the vegetation was subjected to overgrazing and/or trampling. There is no evidence of severe soil erosion.

Existing structures

The quarry is situated within 150 m from OMV Engineering Works that also serves as the engineering workshop and general offices for OMV. The main railway line between Kimberley and De Aar is situated within 80 m from the quarry and forms the western boundary of the farm Spijfontein on which the quarry is located. The railway line runs parallel to the national N12 road leading from Kimberley to Hopetown. The game farm on Spijfontein has been fenced off from the quarry and the boundary fence is approximately 100 m north of the quarry.

5.6 Natural vegetation

The natural vegetation around the quarry is an open savannah with *Acacia tortilis* (umbrella thorn) the sole dominant tree species. A range of different aged individuals occur which is indicative of the increase in numbers and density of the specie. The grassland component is rich in species. The dominant grasses are *Antheophora pubescens* (wool grass) and *Aristida congesta* (spreading three-awn) in the recent disturbed areas.

The *Acacia tortilis* is the sole dominant tree species with bush clumps of *Ziziphus mucronata* (buffalo thorn), *Rhus lancea* (karee) and *Tarchonanthus camphoratus* (camphor bush) being present in grassland in the eastern

area. The grassland component is rich in species, both grasses and forbs. The dominant grasses are *Antheophora pubescens* and *Aristida congesta* in the recently disturbed areas.

There are no endangered species of the Red Data List present on the farm Spijtfontein. The mesem, *Ruschia indurata* of the dolomite sheets is a succulent and not regarded as an endangered species but will be protected. The most common invaders in the mining area are *Argemone Mexicana* (klipvygie), *Salsola kali* (tumbleweed), and *Chenopodium ambrosioides* (sandworm plant). No exotic plants are present on the mining premises.

5.7 Natural fauna

The quarry area is extremely disturbed and little animal life is present in the mining area. The quarry is frequently visited during the nights by the small *Raphicerus campestris*, Steenbok and *Lepus saxatilis*, Scrub hare, which is present on the game section of the farm Spijtfontein.

5.7.1 Common species

The fauna listed below is already found in the mining area or may be found there as rehabilitation proceeds.

5.7.2 Birds

An extensive bird life can be found on the mine and specifically on the hills and small valleys with dense vegetation growth. Some of the following birds have been spotted on the mine or are known to occur in the area.

Table 6: Common bird species found in the area

Common name	Scientific name
Feral Pigeon	<i>Columba livia</i>
Rock Pigeon	<i>Columba guinea</i>
Redeyed dove	<i>Streptopelia semitorquata</i>
Cape turtledove	<i>Streptopelia capicola</i>
Laughing dove	<i>Streptopelia senegalenses</i>
Namaqua dove	<i>Oena capensis</i>
Diederik cuckoo	<i>Chrysococcyx caprius</i>
Redchested cuckoo	<i>Cuculus solitarius</i>
Barn owl	<i>Tyto alba</i>
Pearlspotted Owl	<i>Glaucidium perlatum</i>
Spotted eagle owl	<i>Bubo africanus</i>
Whiterumped swift	<i>Apus caffer</i>
Little swift	<i>Apus affinis</i>
Whitebacked mousebird	<i>Colius colius</i>
Redfaced mousebird	<i>Urocolius indicus</i>
Brownhooded kingfisher	<i>Halcyon albiventris</i>
Lilacbreasted roller	<i>Coracias coudata</i>

Purple roller	<i>Coracias naevia</i>
Hoopoo	<i>Upupa epops</i>
Scimitar-billed woodhoopoo	<i>Rhino omostus cyanomelas</i>
Grey hornbill	<i>Tockus nasutus</i>
Pied barbet	<i>Tricholaema leucomelas</i>
Crested barbet	<i>Trachyphonus vaillantii</i>
Rufous-naped lark	<i>Mirafta africana</i>
Clapper lark	<i>Mirafta apiata</i>
Fawn-coloured lark	<i>Mirafta africanoides</i>
Chestnut-backed finch-lark	<i>Eremopterix leucotis</i>
Grey-backed finch-lark	<i>Eremopterix verticalis</i>
European swallow	<i>Hirundo rustica</i>
Greater striped swallow	<i>Hirundo cucullata</i>
Fork-tailed drongo	<i>Dicrurus adsimilis</i>
Black crow	<i>Corvus capensis</i>
Pied crow	<i>Corvus album</i>
Ashy tit	<i>Parus cinerascens</i>
Pied babbler	<i>Turdoides bicolor</i>
Red-eyed bulbul	<i>Pycnonotus nigricans</i>
Groundscraper thrush	<i>Turdus litsitsirupa</i>
Familiar chat	<i>Cercomela familiaris</i>
Ant-eating chat	<i>Myrmecocichla formicivora</i>
Stonechat	<i>Saxicolaptes quata</i>
Cape robin	<i>Cossypha caffra</i>
Kalahari robin	<i>Erythropygia paeon</i>
Tit-babbler	<i>Parisoma subcaeruleum</i>
Fantailed cisticola	<i>Cisticola juncidis</i>
Desert cisticola	<i>Cisticola aridula</i>
Rattling cisticola	<i>Cisticola chiniana</i>
Spotted flycatcher	<i>Muscicapa striata</i>
Chat flycatcher	<i>Melaenornis infuscatus</i>
Fiscal flycatcher	<i>Sigelus silens</i>
Cape wagtail	<i>Motacilla capensis</i>
Orange striated lang-claw	<i>Macronyx capensis</i>
Lesser grey shrike	<i>Lanius minor</i>
Grassveld pip	<i>Anthus cinnamomeus</i>
Fiscal shrike	<i>Lanius collaris</i>
Glossy starling	<i>Lamprolornis nitens</i>
Cape white eye	<i>Zosterops pallidus</i>
White-browed sparrowweaver	<i>Plocepasser mahali</i>
House sparrow	<i>Passer</i>
Great sparrow	<i>Passer motitensis</i>
Cape sparrow	<i>Passer melanurus</i>
Masked weaver	<i>Ploceus velatus</i>
Red-billed quelea	<i>Quelea quelea</i>
Red bishop	<i>Euplectes orix</i>
Long-tailed widow	<i>Euplectes progne</i>
Melba finch	<i>Pytilia melba</i>
Red-billed firefinch	<i>Lagonosticta senegala</i>

Common waxbill	<i>Estrilda astrild</i>
Redheaded finch	<i>Amdina erythrocephala</i>
Quail finch	<i>Ortygospiza atricollis</i>
Pintailed whydah	<i>Vidua macroura</i>
Shafttailed whydah	<i>Vidua regia</i>
Blackthroated canary	<i>Serinus atrogularis</i>
Swallowtailed Bee-Eater	<i>Merops hirundineus</i>
Yellow canary	<i>Serinus flaviventris</i>
Kalahari Robins	<i>Erythropygia paeon</i>
Dusky Sunbird	<i>Nectarinia fusca</i>
Common Quail	<i>Coturnix coturnix</i>
Cardinal Woodpecker	<i>Dendropicops fuscescens</i>
White-breasted cormorant	<i>Phalacrocorax carbo</i>
Grey heron	<i>Ardea cinerea</i>
Black headed heron	<i>Ardea melanocephala</i>
Cattle egret	<i>Bululcus ibis</i>
Hamerkop	<i>Scopus umbretta</i>
Hadedda ibis	<i>Bostrychia hagedash</i>
Whitefaced duck	<i>Dendrocygna viduata</i>
Egyptian goose	<i>Alopochen aegyptiacus</i>
Yellowbilled duck	<i>Anas undulate</i>
Redbilled teal	<i>Anas erythrorhyncha</i>
Spurwinged goose	<i>Plectropterus gambensis</i>
Secretarybird	<i>Sagittarius serpentarius</i>
Black-breasted snake eagle	<i>Circaetus pectoralis</i>
Steppe buzzard	<i>Buteo buteo</i>
Lanner falcon	<i>Falco biarmicus</i>
Greater kestrel	<i>Falco rupicoloides</i>
Lesser kestrel	<i>Falco naumanni</i>
Orange river francolin	<i>Francolinus levaillantoides</i>
Helmeted Guinea fowl	<i>Numida meleagris</i>
Redknobbed coot	<i>Fulica cristata</i>
Whitewinged black korhaan	<i>Eupodotis aftaoides</i>
Crowned plover	<i>Vanellus coronatus</i>
Blacksmith plover	<i>Vanellus armatus</i>
Common sandpiper	<i>Actitis hypoleucos</i>
Blackwinged stilt	<i>Himantopus himantopus</i>
Spotted dikkop	<i>Birhinus capensis</i>
Doublebanded courser	<i>Smutsornis africanus</i>
Temminck's courser	<i>Cursorius temminckii</i>
Whitewinged tem	<i>Chlidonias leucopterus</i>
Burchell's sandgro	<i>Pterocles burchelli</i>

5.7.3 Mammals

<i>Suncus infinitesimus</i>	-	Least dwarf shrew
<i>Crociodura cyanea</i>	-	Reddish-grey musk shrew

<i>Chlorotohpa sclater</i>	-	Golden Mole
<i>Tadarida aegyptiaca</i>	-	Egyptian free-tailed bat
<i>Eptesicus capensis</i>	-	Cape serotine bat
<i>Nycteris thebaica</i>	-	Common slit-faced bat
<i>Rhinolophus clivosus</i>	-	Geoffroy's horseshoe bat
<i>Papio ursinus</i>	-	Chacma baboon
<i>Tatera lencogaster</i>	-	Bushveld gerbil
<i>Tatera brantsii</i>	-	Highveld gerbil
<i>Gerbillurus paeba</i>	-	Hairy-footed gerbil
<i>Desmodillus auricularis</i>	-	Short-tailed gerbil
<i>Mus musculus</i>	-	Domestic mouse
<i>Rhabdomys pumilio</i>	-	Striped field-mouse
<i>Saccostomus campestris</i>	-	Pouched mouse
<i>Malacothrix typica</i>	-	Large-eared mouse (on calcrete)
<i>Graphiurus ocellatus</i>	-	Spectacled dormouse
<i>Mus minutoides</i>	-	Pygmy mouse
<i>Aethomys namaquensis</i>	-	Namaqua rock mouse
<i>Parotomys brantsii</i>	-	Bronts' whistling rat
<i>Otomys unisulcatus</i>	-	Karoo bushrat
<i>Thallomys nigricauda</i>	-	Black-tailed tree rat (camel-thom)
<i>Cryptomys hottentotus</i>	-	Common mole rat
<i>Rattus rattus</i>	-	Domestic rat
<i>Lepus capensis</i>	-	Cape hare
<i>Lepus saxatilis</i>	-	Shrub hare
<i>Pedetes capensis</i>	-	Springhare
<i>Pronolagus rupestris</i>	-	Smith's red rock rabbit
<i>Helogale parvula</i>	-	Dwarf mongoose
<i>Cynictis penicillata</i>	-	Yellow mongoose
<i>Atilax paludinosus</i>	-	Water mongoose
<i>Galerella sanguinea</i>	-	Slender mongoose
<i>Ictonyx striatus</i>	-	Striped polecat
<i>Genetta genetta</i>	-	Small spotted genet
<i>Xerus inauris</i>	-	Ground squirrel
<i>Funisciurus congicus</i>	-	Striped ground squirrel
<i>Atelerix frontalis</i>	-	Cape hedgehog
<i>Felis caracal</i>	-	Caracal
<i>Felis lybica</i>	-	African wild cat
<i>Felis nigripes</i>	-	Small spotted cat
<i>Otocyan megalotis</i>	-	Bat-eared fox
<i>Vulpes chama</i>	-	Cape fox
<i>Canis mesomelas</i>	-	Black-backed jackal
<i>Pronolagus rupestris</i>	-	Smith's red rock rabbit
<i>Hystrix africaeaustralis</i>	-	Porcupine

Orycteropus afer	-	Aardvark
Phacochoerus aethiopicus	-	Warthog
Manis temniinckii	-	Cape pangolin
Suricata suricatta	-	Meerkat
Sylvicapra grimmia	-	Common duiker
Raphicerus campestris	-	Steenbok
Tragelaphus strepsiceros	-	Kudu
Oryx gazella	-	Gemsbok
Antidorcas marsupialis	-	Springbok
Taurotragus oryx	-	Eland
Equus burchelli	-	Bontkwagga

5.7.4 Endangered species

Endangered species that are found in the area according to the Red Data Book - Birds (Barnes, Keith N, 2000) and the Red Data Book - Mammals (Smithers 1989 & Branch 1988):

Mammals:	State
Aonyx capensis (Cape clawless otter)	- unknown
Felis lybica cafra (African Wild Cat)	-vulnerable
Manis temminckii (Cape pangolin)	-vulnerable
Orycteropus afer (Antbear)	-vulnerable
Atelerix frontalis (Cape hedgehog)	-rare
Naja nigricollis woodi (Black spitting cobra)	- rare
Proteles cristatus cristatus (Aardwolf)	-rare
Felis nigripes nigripes (Small spotted cat)	-rare

Birds:	State
Cape Vulture – Gyps coprotheres	-vulnerable
African Whitebacked Vulture – Gyps africanus	-vulnerable
Lappetfaced Vultures – Torgos tracheliotos	-vulnerable
Tawny Eagle – Aquila rapax	-vulnerable
Martial Eagle – Polemactus bellicosus	-vulnerable
Blue Crane – Anthropoides paradiseus	-vulnerable
Kori Bustard – Ardeotis kori	-vulnerable
Ludwig’s Bustard – Neotis ludwigii	-vulnerable

(The above list is not complete and only includes the bird species most at risk of electrocution and collision with high rising structures)

Vulnerable means: Taxa of which all or most populations are decreasing because of overexploitation, extensive destruction or degradation of their habitat or other environmental disturbances. All this means that the specie is considered to facing a high risk of extinction in the wild.

Rare means: Taxa with small populations which are not presently endangered or vulnerable, but which are potentially at risk.

5.8 Water

5.8.1 Surface water

There are no rivers or watercourses within 500 meters of the quarry activities.

The rainwater from the quarry is pumped into a surface dam situated at the entrance to the mining area for the main purpose of irrigating the gardens at OMV. No ground water is used for the gardens at OMV.

The water from the quarry, although of potable quality is not used for potable purposes. The quality of the water tested in July 2000 from the quarry is tabulated below~

TABLE 5.1 – THE QUALITY OF THE WATER			
	Quarry H ² O Sample	SABS Standards - 241	
		Recommended Max	Allowable Max.
Suspended Solids	17.2		
M – Alkalinity as CaCO ³	82	250	600
P – Alkalinity as CaCO ³	Nil		
Conductivity in mS/m	99.0	70	300
pH - Value	7.71	6.0 – 9.0	5.5 - 9

The only surface water use is from the water accumulated in the quarry after rains. There is no watercourse present near the mining site and no party has been identified who draws water from the affected watercourse within a radius of 10 km. The water from the quarry and borehole will be tested annually to determine the quality of the water collected in the quarry and that of the borehole.

The water authority and the irrigation board concerned are:

- The Department of Water Affairs in Kimberley.
- Registration of the boreholes and licensing of water abstraction was done with the Department of Water Affairs in Kimberley.

Wetlands

No natural wetlands or dry pans occur on the mining area.

5.8.2 Groundwater

Mean depth of the water table varies with the annual rainfall. The mean water depth of the water table in summer is approximately 300 m. The mean water depth of the water table in winter is approximately 100 m. The quarry floor is currently 30 m below surface and no ground water has been intersected in the quarry because the quarry is well above the water table.

Ground water is withdrawn within a radius of one kilometre of the site by OMV. The water is used for the game in the game area as drinking water. The average volume of water withdrawn during any 24 hour period is not more than 1 000 L/h. (DWA Certificate no 25057704)

The artificial aquatic pan near the main entrance to OMV is fed through the rainwater being pumped from the quarry and the run off rainwater from the paved area around the workshop and office areas at OMV Engineering.

Processed water

The processed water and mine residue deposits will form part of a closed dirty water system and will not be allowed back into the environment. Water for processing operations is sourced from the Municipality via pipeline as part of the Verdino 192 (Pty) Ltd t/a Rustic Water Users' Association.

5.9 Air quality

With reference to the Scheduled processes under the Second Schedule to the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965): No scheduled process relates to any proposed mining activity on the farm. The air quality in the Kimberley area is generally good. Dust is generated through quarrying, mining, blasting and stockpiling operations. During incidence of high winds the ambient dust level significantly increases.

5.9.1 Existing sources

The current source of air pollution in the area stems from vehicles traveling on the gravel roads of the area. Farming activity, especially ploughing of the irrigation fields, may generate dust during certain periods of the year.

5.9.2 New source

The source of air pollution on the farm will be nuisance dust generated by the opencast mining process. Dust is generated through quarrying, mining, blasting and stockpiling operations as well as from the movement of trucks and vehicles on the mining roads. Gas emissions from machinery will be within legal limits.

5.9.3 Areas of impact

The mean wind direction is northerly and the average speed is moderate. Weather systems and rainfall are driven by northerly winds. There is a potential for fall-out dust to impact on the surrounding farm properties – which can be described as the nearest potential area of impact. The dust management programme recommended should include daily watering of access roads and stockpile areas.

If dust is generated, it is expected to be visible from the surrounding farmland or N12 that runs along the boundary of the Mining Area.

5.10 Noise

5.10.1 Existing sources:

The quarry is situated next to the N12 and main railway line between Kimberley and De Aar. The noise from the traffic on the national road has an effect on the community adjacent to the quarry. The noise levels of the traffic measured at the boundary are higher than the noise generated from the quarry activities. The noise levels generated by the trains passing by are high but for a relative short period.

Noise on site will come from the large vehicles and from the blasting activities. Noise impact from blasting is high, but is limited to very short, infrequent periods of occurrence. The Mine manager on site informs all surrounding farmers and other interested and affected parties prior to any blasting activities taking place.

Although the operation does generate noise the overall impact can be described as negligible.

5.11 Areas of cultural-historical or archaeological interest.

The archaeological staff from the McGregor Museum was contracted to inspect the mining site for any sites of archaeological and cultural interest. The attached report from Mr. D. Morris indicates that the quarry site is heavily disturbed and that no sites of archaeological and cultural interest were identified or found to be present in the quarry area on the farm Spijfontein.

Sites of archaeological and cultural interest were however identified on the game farm section of the farm Spijfontein and these sites will be protected for future generations.

5.12 Sensitive Landscapes

No sensitive landscapes under statutory protection occur on the site.

"Sensitive environments" that have statutory protection are the following:

1. Limited development areas (section 23 of the Environment Conservation Act, 1989 (Act 73 of 1989).
2. Protected natural environments and national heritage sites.
3. National, provincial, municipal and private nature reserves.
4. Conservation areas and sites of conservation significance.
5. National monuments and gardens of remembrance.
6. Archaeological and palaeontological sites.
7. Graves and burial sites
8. Lake areas, offshore islands and the admiralty reserve.
9. Estuaries, lagoons, wetlands and lakes.
10. Streams and river channels, and their banks.
11. Dunes and beaches.
12. Caves and sites of geological significance.
13. Battle and burial sites.
14. Habitat and /or breeding sites of Red Data Book species.
15. Areas or sites of outstanding natural beauty.
16. Areas or sites of special scientific interest.
17. Areas or sites of special social, cultural or historical interest.
18. Declared national heritage sites
19. Mountain catchment areas
20. Areas with eco-tourism potential

5.13 Visual Aspects

Visibility of the mine from existing roads and visibility of the mine from tourist routes

The negative visual impacts of the quarry are high. The crushing plant and stockpile are partially visible from the existing N12. Trees were planted along the western boundary of the quarry to reduce the visible impact from the N12. The improvement in the visual impact of the quarry over the past 15 years is significant and very effective.

Visibility of the mine from residential areas

The quarry is situated on the east side of the hill and is therefore only partially visible from the properties situated to the west. The quarry is visible from the adjacent properties situated on the south and east boundaries. The properties are not frequented often and the effect of the visual impact there is low. Indigenous trees are being planted along the boundary to reduce the visible effect from the adjacent properties.

Visibility of dust being generated

Dust that is generated will be visible to the surrounding landowners.

5.14 Socio-economic structure of the region

5.14.1 Population density, growth and location

Northern Cape

The Northern Cape is the largest province and covers 29,7% of South Africa by area, but have only 2% of the total population (840 000- Census '96), of which 71,7% lives in urban areas and 28,3% in rural areas. The Northern Cape has a 49,1/50,9 male/female gender ratio. Kimberley is the provincial capital of the Northern Cape with an average summer temperature of 25,3° C and 10,8° C in the winter. The inhabitants of the Northern Cape have a life expectancy at birth of 62,7 years compared to the lowest of 59,7 years in the North West and the highest in the Western Cape of 67,7 years.

About 33% of the Northern Cape's population are African/ Black, 52% are Coloured, 0,3% are Indian/Asian and 13% are White. The province's Coloured population is the largest after that of the Western Cape. Among people aged 20 years and above, almost 21% have had no schooling at all, whilst more than 20% have had some primary education. Only 5,8% of the province's people have tertiary qualifications. More than 11% have a matric, almost 31% have had some secondary education and around 9% have completed their primary education.

Of all the people in the Northern Cape, 2,2% have sight disabilities, 0, 7% have hearing difficulties, 1,1% have physical disabilities, 0,5% have mental disabilities and 0,3% suffer from more than one disability.

Frances Baard District Municipality

The Frances Baard District Municipality (FBDM) is situated in the Northern Cape Province.

The Northern Border stretches to the Northwest Province while its eastern side borders on the Free State Province.

The Frances Baard District Municipality comprises the municipalities of

Dikgatlong,

Magareng,

Phokwane,

Sol Plaatje and

District Management Area (DMA)

The Municipal Area is characterized by a mixture of land uses of which agriculture and mining is dominant. The residential area varies from the city size Kimberley to small scattered rural communities.

Sol Plaatje Municipality

The Sol Plaatje Municipality resides within the boundaries of the Frances Baard District Municipality. Kimberley is the administrative centre of the Municipality.

Sol Plaatjes is the second largest local municipality within the Frances Baard District Municipality.

The municipal area comprises a large urban node in the form of Kimberley, villages and farms. The economic activities consist of several retailers, industries as well as mining and farming. The Municipality accommodates approximately 247 000 people.

The condition of the housing stock in the district is generally good. The housing stock consists of three types of dwelling houses: Formal dwelling houses 72,3%, informal dwelling houses 21,5%; traditional houses 3,5% and 1,8% of the housing stock consist of hostels and other undefined housing types.

The economic base of the Frances Baard District appears to be based either in agriculture or mining. However the contribution of these two sectors to the overall wealth of the district is minimal. The dominant sector however has been "community service"

Other important sectors are finance, transport and trade.

The economic active population in the district has been growing steadily. For example between 1990 – 2000 the labour force in the district increased by 28,3%. On the other hand, job opportunities in the formal and informal sectors decreased by 11,4% and 3,8% respectively in the same period. Consequently unemployment increased by 7,6% in the ten-year interval.

The economy of the Northern Cape Province is based on three major pillars:

- Agriculture
- Mining
- A large public sector

The Manufacturing sector is at present very small and there are no immediate signs that there will be an increase in size. However, such an expansion would be necessary to enable the province to provide its entire population with employment and reasonable standards of living.

It is estimated that there are about 69 448 households in the district. Statistics indicate that about 30% of the households are female-headed households. Household sizes vary considerably from one municipality to another. Magareng has the smallest household size, 4,1 and Phokwane has the highest household size 5,4. The average household size for the district is 4,8.

Frances Baard District Municipality has an estimated total population of 361 975 people (2001) of whom 55,9% live in Sol Plaatje Municipality. The

district is highly urbanized, with 81,9% of the people living in urban areas and only 18,1% in rural areas.

The population composition of the district is characteristic of populations in developing societies. The youth and children (0 – 19 years) are dominant accounting for over 43,2% of the total population. The economically active population (20 – 64 years) and pensioners >65 years represent 50,9% and 5,9% of the total population respectively. The male-female ratio is slightly biased against male; and 51,5% of the population are female and only 48,5% are male.

However one out of every five persons (20%) in the district cannot read or write. This poses a serious problem in the promotion of capacity building and sustainable development.

On the whole the area is experiencing a negative population growth. Some factors might be the following:

- Migration of skilled workers for jobs outside of the Province
- Migration of students to universities who do not return.
- Increasing death rate as a consequence of the spread of HIV/Aids.
- Declining employment levels obliging unskilled and semi-skilled to move to larger urban centres.
- There is also the suggestion that there is an increasing number of unemployed people or people on low incomes settling in informal settlements. However informal enquiries indicate that people are often coming from back yard dwellings (extended families) in the Municipal area and thereby not increasing the overall population.

The Local Economic Development report links the following constraints on the tourism development of the area: lack of conference facilities, small size of the town, distance from main centres, products not well packaged, limited access and infrastructure, not focused marketing and very limited game-hunting exploiting.

The LED therefore proposed a number of initiatives to be explored, and has consequently listed a few recommendations to develop the tourism market to become a bigger economic power within this region. These include recommendations like a new marketing and development strategy (and institution), training and capacity building on all levels of business and tourism industry, upgraded facilities using cultural and heritage tourism, better access and conference facilities.

The Sol Plaatje Tourism board has a schedule to promote tourism in general, but also has a large focus on the Galeshewe township tourism route, as this has been declared a presidential urban renewal node which is linked to tourism and job creation.

5.14.2 Major economic activities and sources of employment

In most of the areas the rural population is employed in agriculture as farm workers as well as on various mines in the district.

5.14.3 Estimated unemployment

With the high influx of unskilled workers in the area and the high population growth of more than 2%, the unemployment rate rises every year and is estimated to be as high as 40% for the men in the area and 60% for women in the more rural settlements around Kimberley. South Africa's official unemployment rate is currently at 38%.

5.14.4 Housing-demand and availability

The demand for housing in the Northern Cape Province is critical as can be seen in the number of informal settlements being built on an almost daily basis in the nearby towns and Kimberley.

5.14.5 Social infrastructure: schools, hospitals, sport- and recreation facilities, shops, police and civil administration

There is no formal infrastructure such as schools, hospitals, sport- and recreation facilities and shops within the immediate surrounding area, the nearest infrastructure is situated in Kimberley.

5.14.6 Water supply

Water is available to almost 50% of the population in the Northern Cape in the form of water piped to their dwelling. The next most used source of water supply is piped water on-site or in yards, which is available to around 33% of the population.

Surface water from the Riet-, Vaal- and Orange River is the major source of water in the region, although some smaller communities are totally dependent on groundwater for supply. The source of production and domestic water for the mine will be from the Municipality.

5.14.7 Power supply

The Mine will make use of Municipal power as a main power supply

6 ANTICIPATED IMPACTS

The following significance rating will be used to describe the anticipated impacts with a certainty rating of POSSIBLE (Only over 40% sure of a particular fact or of the likelihood of an impact occurring). As this is only a Scoping Report the duration of the impact is taken as occurring over a

period of one year and will be rated as occurring only within the mine boundaries. The degree of certainty will improve as more information becomes available during the Environmental Impact Assessment study.

Very high Of the highest order possible within the bounds of impacts which could occur. In the case of negative impacts, there would be no possible mitigation and/or remedial activity to offset the impact at the spatial or time scale for which it was predicted. In the case of positive impacts, there is no real alternative to achieving the benefit.

High Impacts of a substantial order. In the case of negative impacts, mitigation and/or remedial activity would be feasible but difficult, expensive, time-consuming or some combination of these. In the case of positive impacts, other means of achieving this benefit would be feasible, but these would be more difficult, expensive, time-consuming or some combination of these.

Moderate Impact would be real but not substantial within the bounds of those which could occur. In the case of negative impacts, mitigation and/or remedial activity would be both feasible and fairly easily possible. In the case of positive impacts, other means of achieving these benefits would be about equal in time, cost and effort.

Low Impact would be of a low order and with little real effect. In the case of negative impacts, mitigation and/or remedial activity would be either easily achieved or little would be required, or both. In case of positive impacts, alternative means for achieving this benefit would likely be easier, cheaper, more effective, less time-consuming, or some combination of these.

Very low Impact would be negligible. In the case of negative impacts, almost no mitigation and/or remedial activity would be needed, and any minor steps, which might be needed, would be easy, cheap and simple. In the case of positive impacts, alternative means would almost all likely to be better, in one or a number of ways, than this means of achieving the benefit.

No effect There would be no impact at all - not even a very low impact on the system or any of its parts.

SCOPING MATRIX

ENVIRONMENTAL ASPECTS	SIGNIFICANCE	POSITIVE OR NEGATIVE IMPACT	COMMENTS
GEOLOGY	Moderate	Negative	
CLIMATE	No effect		
TOPOGRAPHY	Moderate	Negative	
SOIL	Moderate	Negative	
LAND USE	Moderate	Negative	
PLANTS	Low	Negative	
ANIMALS	Low	Negative	
SURFACE WATER	Moderate	Negative	
GROUNDWATER	Low	Negative	
AIR – DUST & NOISE	Low	Negative	
CULTURAL/ ARCHAEOLOGY	Low to Moderate	Negative	Archaeological study was done in the area – see attached report.
SENSITIVE ENVIRONMENTS	Low to Moderate	Negative	
VISUAL	Very Low	Negative	
SOCIAL	High	Positive	

6.1.1.1 ALTERNATIVES

Alternatives will be identified by using a series of overlay maps that indicate the different environmental and social-economic factors, by using brainstorming, the nominal group technique and the Delphi technique. The alternatives will also be categorised into the following:

- Demand alternatives
- Activity alternatives
- Location alternatives
- Process alternatives
- Scheduling alternatives
- Input alternatives

6.1.1.2 LAND USE OR DEVELOPMENT ALTERNATIVES

Mining operations are currently taking place in the area and once rehabilitated the land use can revert back to grazing or agricultural potential.

6.1.1.3 ALTERNATIVE MINING METHODS

The mining method using open cast mining is the only economic viable method currently being used by the crushers. There is no alternative mining method

6.1.1.4 CONSEQUENCE IF NOT PROCEEDING WITH THE OPERATION

The current operation makes provision for 75 - 90 job opportunities. This will be lost if the project does not proceed. Substantial tax benefits to the state and local government will also be lost as well as trade with local suppliers.

6.1.1.5 MOST APPROPRIATE PROCEDURE TO PLAN AND DEVELOP THE MINING OPERATION

- a) All historical and potential impacts (environmental and social) will first be addressed to the satisfaction of the relevant state departments.
- b) The social and labour plan of the mine will address and spread the economic benefits of the mining operation.
- c) A rehabilitation plan will address the continual upgrading of the current state of the environment over the life of the mine.
- d) A mining right (conversion of an old order right) must then be obtained over a long enough period to justify the capital expenditure of the new operations.

7 INTERESTED AND AFFECTED PARTIES PROCESS

- a) The consultation process with interested and affected parties (neighbouring farmers and land owners) was completed as this was a prerequisite prior to commencing the current mining operations on site. The process has been started again and registered letters were mailed to all parties.
- b) Regular contact sessions are held with the neighbouring farmers and land owners which are currently affected by the mining operations. All neighbours are also members of the Verdino Water authority and regular meetings are held. OMV is a founder member and main sponsor of the Verdino Water authority.
- c) Records are kept of the complaints and the mitigatory measures have already been implemented.
- d) An advertisement has been placed in an Afrikaans and English newspaper on the 08 and 09 November 2010 to notify and invite all other interested parties and affected parties.

8 FURTHER INVESTIGATIONS REQUIRED

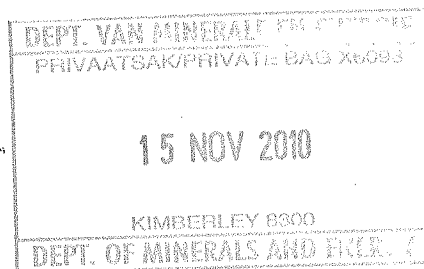
Environmental Component	Data Type	Data Source
Climate	Qualitative	Literature
Air Quality	Qualitative	Literature and sampling
Geology	Quantitative and Qualitative	Literature and site visit
Topography	Quantitative and Qualitative	Visual Impact Assessment and literature
Soils	Quantitative and Qualitative	Site assessment and literature
Surface and Ground water	Quantitative and Qualitative	Literature and sampling
Flora and Fauna	Qualitative	Site visit and literature
Archaeology	Quantitative and Qualitative	Expert Report by Mr. David Morris
Visual Characteristics	Quantitative	Visual Impact Assessment
Land Use, Tenure and Capability	Qualitative	Assessment and Literature
Background Noise Levels	Quantitative and Qualitative	Assessment and Literature

PRELIMINARY ARCHAEOLOGICAL SPECIALIST REPORT

FOR PURPOSES OF AN EMP

David Morris
McGregor Museum
P.O. Box 316
Kimberley
8300

2 June 2000



Introduction

The McGregor Museum, Kimberley, was contacted to assess archaeological traces on the property of Record Stone Crushers, a portion of the original farm Spijt Fontein ("Remainder of Portion 36 Blaauwboschput A"). The property was visited on 25 May 2000. Observations are summarised below. Archaeological sites and traces dating from the Stone Age to early twentieth century were noted. One site containing well preserved Fauresmith material, circa 250 000 years old, requires to be salvaged. Limited records on the old Spytfontein or Wimbledon Mine are collated in the report.

Background

The region bounded by the Vaal and Orange Rivers is well known for its richness of archaeological sites, particularly stone age and rock art occurrences (eg. Goodwin & van Riet Lowe 1929; Beaumont & Morris 1990).

Stone Age material found in this area spans the Earlier, Middle and Later Stone Ages through Pleistocene and Holocene times. Sites of Pleistocene age have been described along the banks of the Vaal River and in pan-side settings near Kimberley (eg. Butzer 1983; Beaumont & Morris 1990), with Fauresmith material being common in the red Hutton Sands that occur in this vicinity. Later Stone Age sites occur widely in the region. "Type R" pastoralist settlements (Maggs 1971; Humphreys 1972) are known within the valley of the Riet River to the south.

The vicinity of Kimberley is also known for material traces relating to mining (Wagner 1914), and the Anglo Boer War (F. Barbour pers. comm.; Lunderstedt 1999).

Setting

The terrain investigated consists of largely undisturbed veld to the north of the existing quarry (some localised surface disturbance), which includes dolerite ridges and a mantling of Hutton sands overlying Karoo rocks between these hills. This portion of the

property is currently used as a game camp. Archaeological material could be expected to occur on or within these features. Disturbed areas in the vicinity of the Westphalia Park quarry were not investigated, where archaeological traces are presumed to have been destroyed, or covered over by stockpile dumps.

Archaeological and historical observations

Portions of the area were surveyed on foot. See numbering on map.

1. Sand quarry at north eastern end of property

This sand quarry is of some archaeological importance in that it has exposed a unit, approximately 2.5 m below the present surface, containing very well preserved stone tools probably of Fauresmith age (Early Middle Stone Age). Similar artefacts are exposed at the surface elsewhere on the property. The significance of this particular site is that its geological context is intact and can potentially be dated.

I am informed that this quarry is currently utilised (F. Weber pers.comm.), and it is thus recommended that measures be taken to mitigate further disturbance of the site within it. Some of the exposed artefacts are in an area that is particularly vulnerable.

2. South side of Wimbledon Ridge

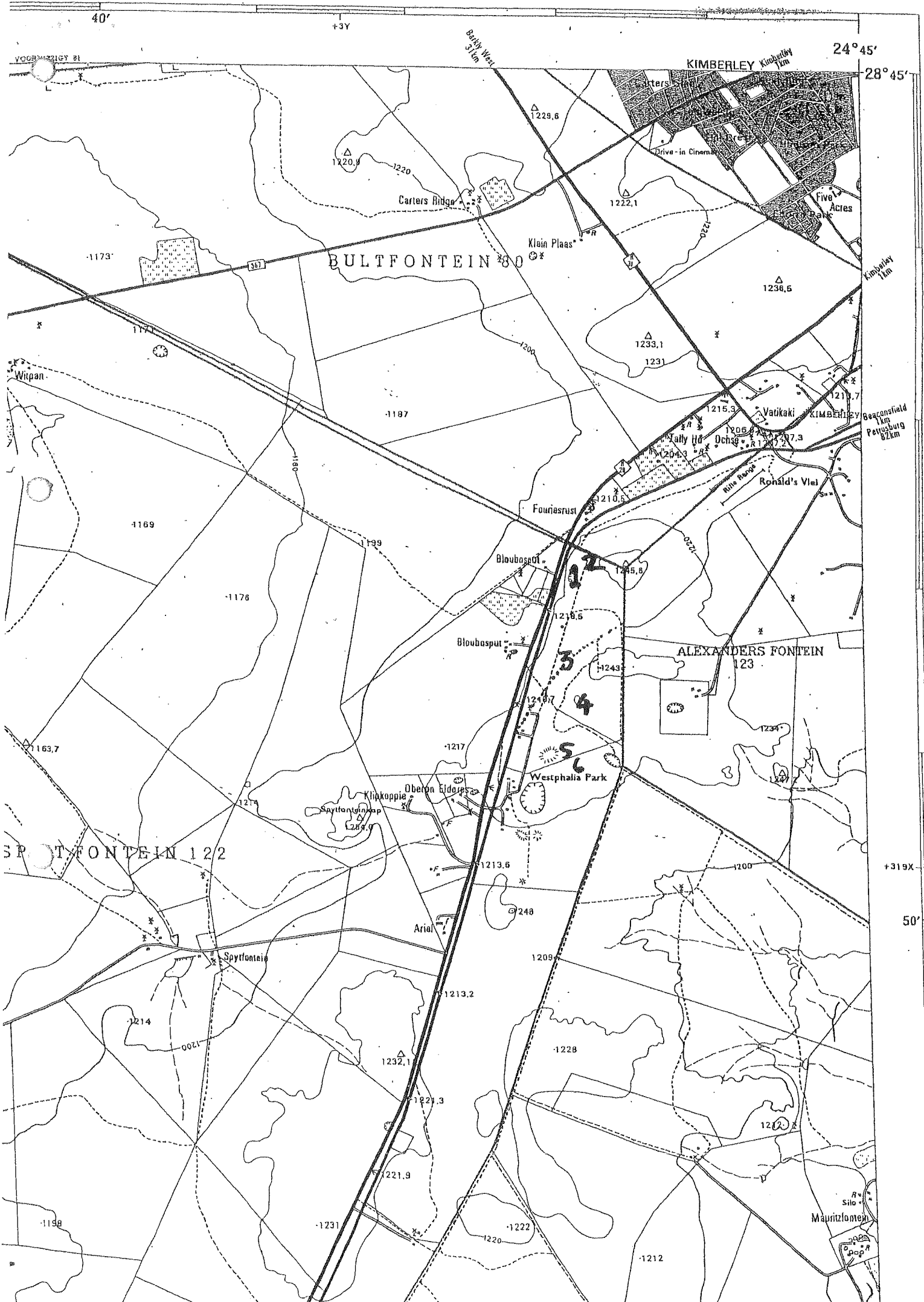
Portions of this ridge were examined for artefacts and rock engravings. No archaeological sites were found in the area investigated. In the event of this area being quarried in the future it is recommended that the whole ridge within the property be examined in greater detail.

Anglo Boer War sites must occur on top of and on the south side of Wimbledon Ridge, where Boers had a laager, and from which they fired on Kimberley during the siege (F. Barbour pers.comm.; Lunderstedt 1999). Hollows on the ridge may well represent gun positions. Debris possibly from this period was noted elsewhere on the property.

3. Old railway route and possible block house site

One of the roadways across the property runs along an old railway route, which is also shown as a disused railway on the 1941 topographical map of the area. Debris relating to the railway was found at places, including glass and ceramics probably thrown from train windows. There is a possible Anglo Boer War block house site at a cutting, but little debris was found to confirm this. It should be examined in closer detail if the area is intended to be quarried at any future date.

The old Wimbledon Station was situated on this property, but was not visited for purposes of this report. Spytfontein [Spijfontein] Station, further down the track, was a Telegraph Office and Post Office Agency in 1895 (Emms 1981). Further perusal of records may turn up similar information for Wimbledon, especially if there was an active, albeit small, mine nearby (see below).



40'

+3Y

24° 45'

28° 45'

VOERWINDIG B1

KIMBERLEY

Bosch West
31 km

Drive-in Cinema
Five Acres
Park

BULTFONTEIN 80

-1173

Klein Plaas

Witpan

-1197

Valkaki

Beaconsfield
1 km
Perenburg
82 km

-1169

Fouriesrust

Tally Ho

Dons

Rooi Berg

Ronald's Vlei

-1176

Bloubospuit

ALEXANDERS FONTEIN
123

-1163.7

-1217

Westphalia Park

SP. T. FONTEIN 122

Klikoppie
Snyfontein
287.9

Oberon Edgemoor

+319X

-1213.6

248

50'

Arial

1209

-1214

-1232.1

-1228

-1221.3

-1221.9

-1222

-1212

-1158

-1231

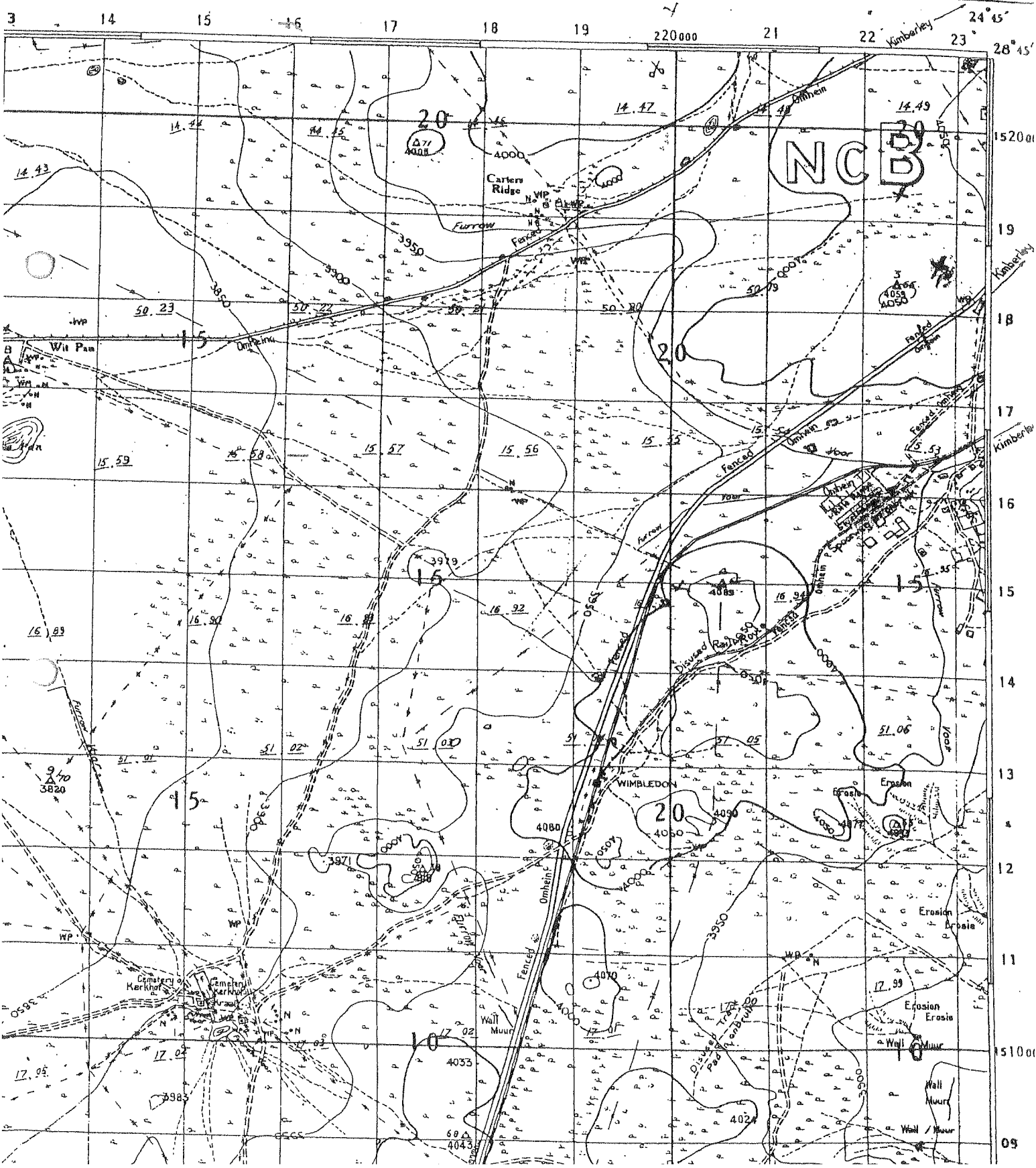
Mauritzfontein

Silo

1941

EID

SPYTFONTEIN



4. Dolerite ridge

This ridge was checked for archaeological traces and rock engravings. Pleistocene material, of Fauresmith, was found below the ridge to the south and east, as was a veneer of late nineteenth/early twentieth century debris such as porcelain, glass and metal. Some of the latter may date from the Anglo Boer War period. It is also possible, even likely, that some of the debris relates to the active life of the diamond mine situated half a kilometre to the south. There is of 20th century graffiti on the hill.

5. Old Wimbledon Mine/Spytfontein Mine

Four micaceous kimberlite pipes are known on Spytfontein (Wagner 1971; J. Robey pers.comm.: Appendix 1), of which the Wimbledon Mine (presumably the "Spytfontein Mine" mentioned in early records) is the only one to have been extensively dug in the past. All were discovered prior to 1906 (Wagner 1971:21 - citing Du Toit 1906; Appendix 1), but few records exist (a search by the Africana Library and De Beers Archives turned up no records apart from Wagner, while the information held by De Beers Geology is included here as Appendix 1). This pipe measures some 100 m across, with an excavation into it that is about 50 m across and some 10 m deep (Appendix 1). Robey remarks that "most of the diamonds registered in the old records appear to have come from this pipe". Today the edges of it are unstable, and it is apparently planned that the open pit would be rehabilitated in the near future. It is recommended that this feature be photographed for historical record purposes.

Micaceous kimberlite pipes (of which the Finsch Mine kimberlite is also an example) were intruded some 120 million years ago, and differ geochemically from the more famous kimberlites of Kimberley - De Beers, Big Hole, Du Toitspan, Bultfontein, Wesselton - which are also younger at about 90 million years (Appendix 1).

6. Dolerite koppie near existing quarry

This koppie was checked for archaeological traces and rock engravings. Part of the koppie has been disturbed already by quarrying and stock-piling. No archaeological traces were observed on the remaining portion of the ridge.

Likely impacts

Northward expansion of quarrying on this property would impact on archaeological traces. In the case of site 1, the sand quarry, further disturbance would destroy a potentially important Fauresmith site.

Recommendations

This survey represents a preliminary look at key features and serves to highlight the existence of sites of archaeological and cultural significance for purposes of a revised EMP.

It is recommended that Site 1 be investigated further and that the material presently exposed be salvaged before further damage occurs.

It is further suggested that Anglo Boer War and railway researchers be permitted to examine the Boer positions and possible railway blockhouse to verify the location/existence of these features.

In all other cases, it is recommended that more detailed investigation be undertaken if any form of land disturbance is envisaged in the future. The survey revealed that archaeological traces of varying age, from Stone Age to early twentieth century, are to be found over much of the property.

The National Heritage Resources Act of 1999 requires that a permit be obtained from the South African Heritage Resources Agency to disturb any archaeological material or site, or historical structure 60 or more years old, or any battlefield or material from a battlefield 75 or more years old.

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