as sweep netting for juveniles (tadpoles). Reptiles were actively searched for and identified by actual specimens or observations of specimens. The data was supplemented by previous surveys conducted in the Ogies-Secunda-Evander areas (1998-2015), literature investigations, personal records and historic data. Different habitats were explored to identify any sensitive or specialised species. Mammal names are as used by Skinner and Chimimba (2005), bird names by Hockey, Dean & Ryan (2006); reptile names by Bates *et al.* (2014); amphibian names by Du Preez and Carruthers (2009).

4.1 Existing Impacts on the Fauna associated with the Ogies Area

- Current mining activities occur throughout the area with several large collieries.
- Previous as well as current agricultural activities have occurred on and surrounding the site have transformed the majority of the remaining Eastern Highveld grasslands.
- Remnant patches of moist grasslands or seepage wetland occurs adjacent to the broad un-channelled valley bottom wetlands. These grasslands are heavily utilized for livestock grazing activities.
- The remaining open grassland habitat on the site is in various stages of degradation due to poor grassland management and livestock grazing and trampling along the channelled valley bottom wetlands.
- Invasion of exotic tree species (*Syringa, Melia azedarach*, Black Wattle, *Acacia mearnsii*, Grey Poplar (*Populus x canescens*, Weeping Willow (*Salyx babylonica*) and *Eucalyptus* sp.) and plant/grass species including Kikuyu, *Pennisetum clandestinum* and Pom Pom Weed (*Campuloclinium macrocephalum**).
- The majority of the areas adjacent to Ogies are poorly fenced allowing for easy access. Fences along the mine conveyor belts and certain mines severely restrict the migratory movement of larger animal species as well as result in potential injuries from the razor wire fence.
- Extensive rubble piles as well as recent rubble pits were observed around the access roads adjacent to Ogies.
- Frequent fires, at the incorrect time of the year (spring, summer and winter burns), has disturbed the underlying grass and forb vegetation layer which is now dominated by weedy species. Massive stands of Black-Jacks, *Bidens pilosa*, Khaki Weed, *Tagetes minuta* and *Cosmos bipinnatus* are found within the heavily degraded and disturbed sections of the site. Frequent burning of remaining grasslands reduces refuge habitat as well as potential foraging habitat for remaining animal species.
- Surrounding main roads with high vehicular traffic (large mining trucks) as well as secondary dirt roads increase the possibility of road fatalities of migrating species and especially nocturnal species such as Owls and Bullfrogs, which are attracted to the open roads. Primary and secondary roads are located around the entire site.
- Hunting with dogs as well as wire snares within adjacent open areas. Several wire snares were observed within the *Eucalyptus* plantations as well as along guineafowl tracks within the maze lands.

- Removal of certain plant species (bulbous geophytes); thatch harvesting, wood harvesting and collecting.

Previous and current agricultural activities (oldlands) have transformed large areas of the central and northern portions of the site. Agricultural activities place pressure on the environment in the following ways:

- Change in land use: natural grasslands containing a diversity of vertebrate and invertebrate fauna are converted to monocultures of one particular crop leading to considerable loss of faunal biodiversity.
- Small tracts of indigenous grassland become surrounded by monocultures causing fragmentation of previously intact natural habitats.

Current and previous mining activities occurred on the site as well as surrounding areas. Drainage waters from the mines have serious effects on receiving water quality (both surface and ground water) and thus on aquatic ecosystems.

- Deterioration in water quality including increases in total dissolved solids and total suspended solids (TDS, TSS), sulphate, hardness and trace metals and reduction in dissolved oxygen and pH.
- The deleterious effects of this drainage water may be evident a significant distance from the source of pollution and for many years after the closure of the mine (Dallas & Day 2004).

4.1 Mammals

Mpumalanga is faunally diverse with approximately 163 mammal species consisting of 98 smaller and 64 larger species. It is the objective of Mpumalanga Tourism and Parks Agency (MTPA) to conserve all of these species *in situ.* The grassland and forest biomes sustain many endemic and red data mammal species. The grassland biome is one of the biomes in which Red Data Book (RDB) insectivore richness is concentrated (Gelderblom, Bronner, Lombard & Taylor, 1995). High mammalian species richness occurs in savannahs, which could be as a result of the wide variety of habitats available. In Mpumalanga Province, savanna areas with the availability of sufficient cover, karst areas, wetlands, pans and a well-managed mosaic of short and tall grassland, are habitats that significantly contribute towards the ecological requirements of certain mammal species.

Certain species in Mpumalanga, towards which conservation efforts for habitat protection should be directed, have been identified. Priority species can be used to flagship or emphasize key habitats, which are of conservation concern. These species thus contribute towards identifying priority areas of conservation importance and in determining the conservation value of land. Anthropogenic land conversion and habitat degradation and fragmentation mainly due to agricultural and mining activities are major threats to the continued existence of endemic and threatened fauna in the province.

The current coal mining and agricultural activities and dense human settlements within Ogies and associated hunting and poaching; limits the suitability of the site for larger mammal species. High levels of hunting were noted surrounding the proposed new servitudes with the use of dogs and wire snares as well as several empty shotgun cartridges. The collection or harvesting of grass (thatch) and clearing of any rock material from agricultural lands, overgrazing by livestock as well as the frequent burning of the grassland vegetation reduces available refuge habitat and exposes remaining smaller terrestrial mammals to increased predation levels. The use of wire snares for high intensity poaching activities will significantly affect remaining smaller mammal species such as rabbits and mongooses. Secondary access roads and vehicles (motor cars, motor cycles, quad bikes) which transverse and bisect the grasslands increase access to the site as well as potential road fatalities. Major road networks with high vehicular traffic (heavy mining trucks) increase the risk of road fatalities (hedgehogs, hares) of mammals.

Smaller mammal species are extremely vulnerable to feral cats and dogs. Limited animal burrows (Yellow Mongoose, Highveld Gerbil, Multimmamate Mouse) and African Molerat were observed around the sandy sections of the open grasslands adjacent to the existing powerline servitude. Several Scrub Hares were flushed from the moist grasslands adjacent to the un-channelled valley bottom wetland. Several Slender Mongooses as well as Yellow Mongooses were observed darting across the informal access roads. No indigenous tree species occur on within the existing and proposed new 7km 88kV alignments. Tree species adjacent to the site are exotics and mainly highly invasive species (category 1 and 2)*;* hence the absence of arboreal (such as lesser bushbabies, tree rats and woodland dormice) on and surrounding the site.

No major rocky outcrops or extrusions occur within the alignments; hence the absence of rupicolous mammals (rock rabbits, elephant shrews).

Figure 9: Collage of photographs displaying the small mammal species observed within the study area

- **A:** A Slender Mongoose (*Herpestes sanguineus*) was observed darting across the informal access roads. Several scats were observed along the dirt roads.
- **B:** Yellow Mongoose (*Cynictis penicillata*) was observed within the open grassland adjacent to the valley bottom wetland.
- **C:** A Four-striped Mouse (*Rhabdomys pumilio*) was observed within the remnant patch of sour grassland under the existing powerline servitude.
- **D:** Several Scrub Hares (*Lepus sextalis*) were flushed from the moist *Setaria nigrirostris, Setaria sphacelata* grasslands.

The current and historic agricultural lands represents suitable foraging areas for certain rodent species such as African Molerat, Highveld Gerbil and Multimammate Mouse through the tilling opening up the soil surface, making many insects, seeds, bulbs and other food sources are suddenly accessible. Rodents construct burrows in the sandier soils and attract other predators such as the Yellow and Slender Mongoose. Low mammal diversity is expected from the transformed agricultural lands, transformed and degraded grasslands within the two new 7km 88kV alternative alignments. Species likely to occur include urban exploiters such as Feral Cats, House Rat and House mouse.

4.1.1 Habitat available for Sensitive or Endangered Species

According to the "*The Red Data Book of the Mammals of South Africa: A Conservation Assessment*" (Friedmann Y. and Daly B, (editors) 2004) and Skinner and Smithers (1990) as well as *The Mammals of the Southern African Subregion* (Skinner and Chimimba 2005) the study area falls within the distribution ranges of species which are placed into one of known threatened species ((0) Critically Endangered; (0) Endangered, (0) Vulnerable and (2) Near-threatened). Due to the high level of human activity within the study area it is however unlikely that the study area comprises significant habitat for any species of threatened larger mammals. Larger mammals such as Black-backed Jackal may occasionally utilize the servitudes for exploratory or foraging movements. Evidence (spoor) of Common Duiker as well as a burrow of Cape Porcupine were observed within the *Eucalyptus* plantations.

Table 5: Mammal species of conservation importance possibly occurring on the site (using habitat availability as an indicator)

Family	Common name	Genus	Species	Red list category	Atlas region endemic
Erinaceidae	Southern African Hedgehog	*Atelerix*	*frontalis*	Near Threatened	Yes
Felidae	Serval	*Leptailurus*	*serval*	Near Threatened	Yes

No sensitive or endangered mammals were recorded within the study area during the brief field survey. The majority of larger mammal species are likely to have been eradicated or have moved away from the area, as a result of hunting and poaching as well as habitat alteration and degradation. Smaller mammal species are extremely vulnerable to snares and poaching activities as well as feral cats and dogs. The existing and proposed Grootpan-Brakfontein servitudes are situated mainly within completely transformed habitats which offer limited suitable habitat for any threatened mammal species. The adjacent open sour grassland and palustrine wetlands (especially the broad un-channelled valley bottom wetlands) offer suitable habitat for Serval as well as Southern African Hedgehog. Southern African Hedgehogs are extremely vulnerable to dogs and cats as well as road fatalities. It is high unlikely that the removal of the existing powerline and the proposed two new 7km 88kV alternative alignment constitutes significant habitat for any threatened mammal species or for mammals in general. Low mammal diversity is expected along the existing and new servitudes and a **medium-low negative impact** on remaining mammal species.

4.2 Avifaunal (bird) Survey

A comprehensive bird species list requires intensive surveys compiled over several years. Ninety (90) bird species have been recorded for the 2600_2900 pentad in which the powerline servitudes are situated (SABAP2). Twenty-five (25) bird species were recorded on the site during the brief field survey. Species recorded were common and widespread species indicative of transformed agricultural lands and degraded grasslands. The majority of species recorded were

granivorous species feeding of the maze and *Setaria* spp. seeds. Bird species recorded during the surveys a well as bird species that have been recorded in the vicinity of the proposed site during the current SA Bird Atlas Project 2; the Eskom's Red Data Book of Birds of South Africa, Swaziland and Lesotho as well as the latest Roberts Birds VII Edition (see Table 6).

Figure 10: Adult Lesser Flamingo observed at Grootpan

A single adult Lesser Flamingo was observed at Grootpan. The existing line bisects the northern section of the pan. No bird flappers or diverters were observed along the existing distribution lines which bisect this endorheic pan. Bird flappers or diverters should be installed on the existing powerlines which bisect Grootpan to prevent flamingos and other large waterbirds from possible collisions with the existing lines.

Table 6: Red Data List bird species that occur or could possibly within or in the vicinity of the study area due to suitable habitat

Robert's Nr.	Common Name	Scientific Name	Regional Red List Status (2014)	Habitat Requirements
96	Greater Flamingo	*Phoenicopterus ruber*	Near-Threatened	Highly nomadic and partially migratory and favours saline or brackish shallow water bodies such as salt pans, large dams and coastal mudflats.
97	Lesser Flamingo	*Phoenicopterus minor*	Near-Threatened	Primarily eutrophic shallow wetlands, especially salt pans. A single adult was observed at Grootpan.
165	African Marsh Harrier	*Circus ranivorus*	Endangered	Inland and coastal freshwater wetlands and adjacent moist grassland. Require large (>100 ha) wetlands in which to breed.
208	Blue Crane	*Anthropoides paradiseus*	Near-Threatened	Mostly found in natural grasslands but also in freshwater wetlands, cultivated pastures and croplands.
393	African Grass Owl	*Tyto capensis*	Vulnerable	African Grass Owls are found exclusively in rank grass, typically, although not only, at fair altitudes. African Grass Owls are secretive and nomadic breeding in permanent and seasonal vleis, which it vacates while hunting or post-breeding, although it will breed in any area of long grass and it is not necessarily associated with wetlands.
118	Secretarybird	*Saggitarius serpentarius*	Vulnerable	Favours open grassland with scattered trees or shrubs. They are territorial with home ranges of 20-230km^2 around the nest, usually an area of between 50-60km^2, is defended against

Robert's Nr.	Common Name	Scientific Name	Regional Red List Status (2014)	Habitat Requirements
				conspecifics. Nests are usually placed on top of a thorny tree, frequently in Black Thorn *Acacia melifera*, Umbrella Thorn *Acacia tortilis*, Sweet Thorn *Acacia karroo*, Common Hook Thorn *Acacia caffra*. They may also nest in exotic species such as Black Wattle *Acacia mearnsii* or Pine (*Pinus* sp.).

4.2.1 Habitat available for Sensitive Or Endangered Species

Limited Eastern Highveld Grassland and natural seepage/wetlands and valley bottom wetlands remain in the Ogies area. Numbers of bird species in the Ogies area have declined mainly due to increased levels of human disturbances (quad and off-road bikes); extensive habitat transformation due to mining and agricultural activities as well as severe habitat degradation. Human activity has transformed grasslands in South Africa to a point where few pristine examples exist (Low & Rebelo 1996; Barnes 1998). Factors such as agricultural intensification, intensive open cast mining, increased pasture management (overgrazing), decrease in grassland management due to frequent fires and land-use alteration (urbanisation). Continuing pressure on sensitive wetland and surrounding open grassland habitat are largely responsible for the decline of the above-mentioned avifaunal species.

No threatened bird species have been recorded for the 2900_2900 pentad during the on-going SABAP2 project. A single Lesser Flamingo was observed at Grootpan and suitable habitat occurs within the adjacent endorheic pans for both Lesser and Greater Flamingos. The channelled and un-channelled valley bottom wetlands on the site and neighbouring properties to the south offer occasional foraging arrays for African Marsh Harriers; especially on the Drakensberg River Frogs. The irrigated agricultural lands and remnant open grasslands offer occasional foraging arrays for Secretarybirds. They feed on locusts and grasshoppers within recently harvested lands.

The dense *Imperata cylindrica* patches as well as rank *Sporobolus africanus* grass patches within the broad channelled valley bottom wetlands offer suitable roosting and possible nesting habitat for African Grass Owls. African Grass Owls are found exclusively in rank grass, typically, although not only, at fair altitudes. African Grass Owls are secretive and nomadic breeding in permanent and seasonal vleis, which it vacates while hunting or post-breeding, although it will

breed in any area of long grass and it is not necessarily associated with wetlands. In wetlands it is usually outnumbered by the more common Marsh Owl (*Asio capensis*) by 10:1(Tarboton *et al.* 1987). African Grass Owls nest on the ground within a system of tunnels constructed in mostly tall grass; peak-breeding activity (February-April) tends to coincide with maximum grass cover (Steyn 1982). The burning of the grassland and especially the wetlands will have a negative impact on any remaining African Grass Owls. The current cattle grazing and drinking along the adjacent valley bottom wetlands as well as major road networks and driving of off-road vehicles through the grasslands are potential threats to remaining African Grass Owls.

A single Marsh Owl was flushed during the brief field survey as well as a Spotted Eagle Owl adjacent to the *Eucalyptus* plantations. The proposed two new 7km 88kV alignments provide no suitable habitat for any of the above-mentioned threatened bird species due to high levels of habitat transformation and degradation as well as anthropogenic activities around the proposed new alignments. The proposed removal of the existing powerlines and two new 7km 88kV alternative alignment will most likely have a **low**, negative impact on any threatened bird species which may occur in the area. No bird flappers or diverters were observed along the existing distribution lines which bisect valley bottom wetlands as well as endorheic pans. Bird flappers or diverters should be installed on the existing powerlines which bisect Grootpan to prevent flamingos and other large waterbirds from possible collisions with the lines.

4.3 Reptiles

Reptile lists require intensive surveys conducted for several years. Reptiles are extremely secretive and difficult to observe during field surveys. The majority reptile species are sensitive to severe habitat alteration and fragmentation. Due to human presence in the Ogies township, coupled with increased habitat destruction and disturbances around the collieries and agricultural areas; are all causal factors in the alteration of reptile species occurring on the site and surrounding areas Limited termite mounds were observed within the existing powerline servitudes and degraded grasslands and planted pastures on the site. Termite mounds offer important refuges for numerous frog, lizard and snake species.

Large number of species of mammal, birds, reptiles and amphibians feed on the emerging alates (winged termites). These mass emergences coincide with the first heavy summer rains and the emergence of the majority of herpetofauna. Termite mounds also provide nesting site for numerous snakes, lizards (varanids) and frogs. No indigenous tree species occur on the site; hence the lack of arboreal reptiles (chameleons, snakes, agamas, geckos and monitors). The indiscriminate killing of all snake species on the site as well as adjacent areas reduces snake populations drastically. The annual harvesting of the maize and planted pastures on the site will have a high impact on remaining reptiles due to limited vegetative cover. Fires during the winter months will severely impact on remaining reptile species undergoing brumation and are extremely sluggish. Fires during the early summer months destroy the emerging reptiles as well as refuge areas increasing predation risks.

The removal of rock material from the agricultural lands severely restricts refuge areas during fires. The majority of reptile as well as amphibians use animal burrows and moribund termite mounds to escape fires in open grasslands. No major animal burrows occur within the existing and proposed two new 7km 88kV alternative alignments. Two reptile species was recorded on the site during the brief field survey namely a shredded skin of a Mole Snake (*Pseudaspis cana*) and Montane Speckled Skink (*Trachylepis punctassima*). Low reptile diversity is expected from the existing and proposed two new 7km 88kV servitudes due to extensive habitat transformation and degradation as well as high levels of anthropogenic disturbances around the alignments. Smaller reptile species are extremely vulnerable to feral cats.

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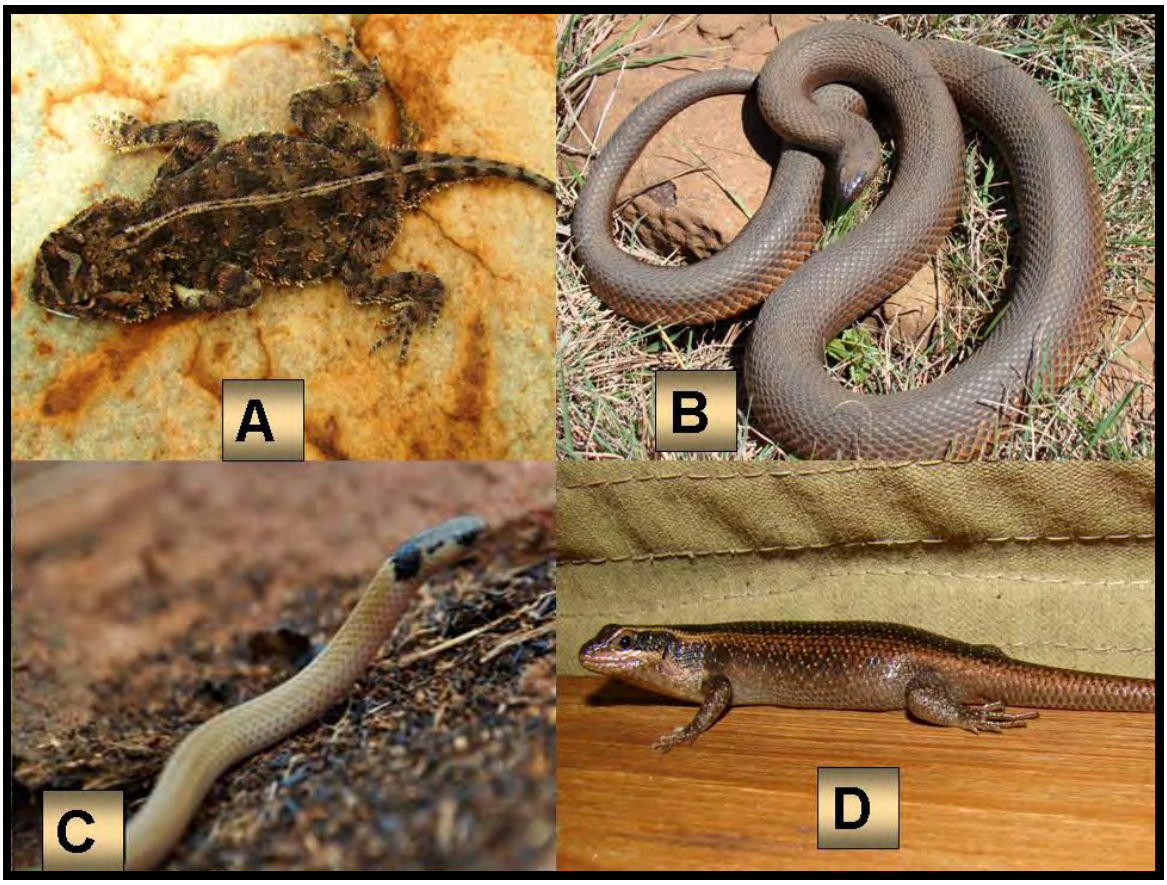

Figure 11: Reptile species likely to occur on the site and adjacent areas

- **A:** Distant's Ground Agama (*Agama aculeata distanti*).
- **B:** Mole Snake (*Pseudaspis cana*).
- **C:** Cape or Blackheaded (*Aparallactus capensis*).
- **D:** Speckled Rock Skink (*Trachylepis punctatissima*).

Table 7: Reptile species recorded from the 2629 AA QDGC according to ReptileMAP

Family	Common name	Genus	Species	Subspecies	Red list category	Atlas region endemic
Atractaspididae	Black-headed Centipede-eater	*Aparallactus*	*capensis*		Least Concern (SARCA 2014)	No
Colubridae	Brown Water Snake	*Lycodonomorphus*	*rufulus*		Least Concern (SARCA 2014)	No
Colubridae	Short-snouted Grass Snake	*Psammophis*	*brevirostris*		Least Concern (SARCA 2014)	No
Leptotyphlopidae	Eastern Thread Snake	*Leptotyphlops*	*scutifrons*	*conjunctus*	Not listed	No
Scincidae	Thin-tailed Legless Skink	*Acontias*	*gracilicauda*		Least Concern (SARCA 2014)	Yes
Scincidae	Speckled Rock Skink	*Trachylepis*	*punctatissima*		Least Concern (SARCA 2014)	No
Typhlopidae	Bibron's Blind Snake	*Afrotyphlops*	*bibronii*		Least Concern (SARCA 2014)	No

4.3.1 Habitat available for Sensitive Or Endangered Species

No threatened reptile species have been recorded for the 2629 AA QDGC (SARCA 2014) or are likely to occur within the existing and new 7km 88kV alternative alignments. The proposed removal of the existing powerline and new 7km 88kV alternative alignment will most likely have a **low-negligible**, negative impact on any threatened reptile species which may occur in the area.

4.5 Amphibians

Breeding in African frogs is strongly dependent on rain, especially in the drier parts of the country where surface water only remains for a short duration. The majority of frog species in the Mpumalanga Province can be classified as explosive breeders. These frog species only emerge after the first heavy summer rainfalls and are dormant during the cold winter months. Explosive

breeding frogs utilise ephemeral pans or inundated grasslands for their short duration reproductive cycles.

As the survey was undertaken during the late summer or autumnal months (April) the majority of amphibians had initiated their short duration breeding events on the site. Two frog species were recorded during the brief field survey including Drakensberg River Frog (*Amietia quecketi*) and several calling Striped Stream Frog (Strongylopus fasciatus) males. Comprehensive herpetological surveys can only be undertaken throughout the duration of the wet season (November-March). It is only during this extended period that accurate frog lists can be compiled for the area. Extremely limited breeding habitat occurs within the section of powerline which is being removed as well as the proposed new 7km 88kV alternative alignment. A small seasonally inundated depression occurs adjacent to the existing powerline which will be removed. The current water quality within the seasonal palustrine wetlands will determine the biodiversity of amphibians adjacent to the powerline alignments. Grootpan is highly eutrophic and offers limited suitable habitat for remaining frog species as the pan contains permanent fish predators.

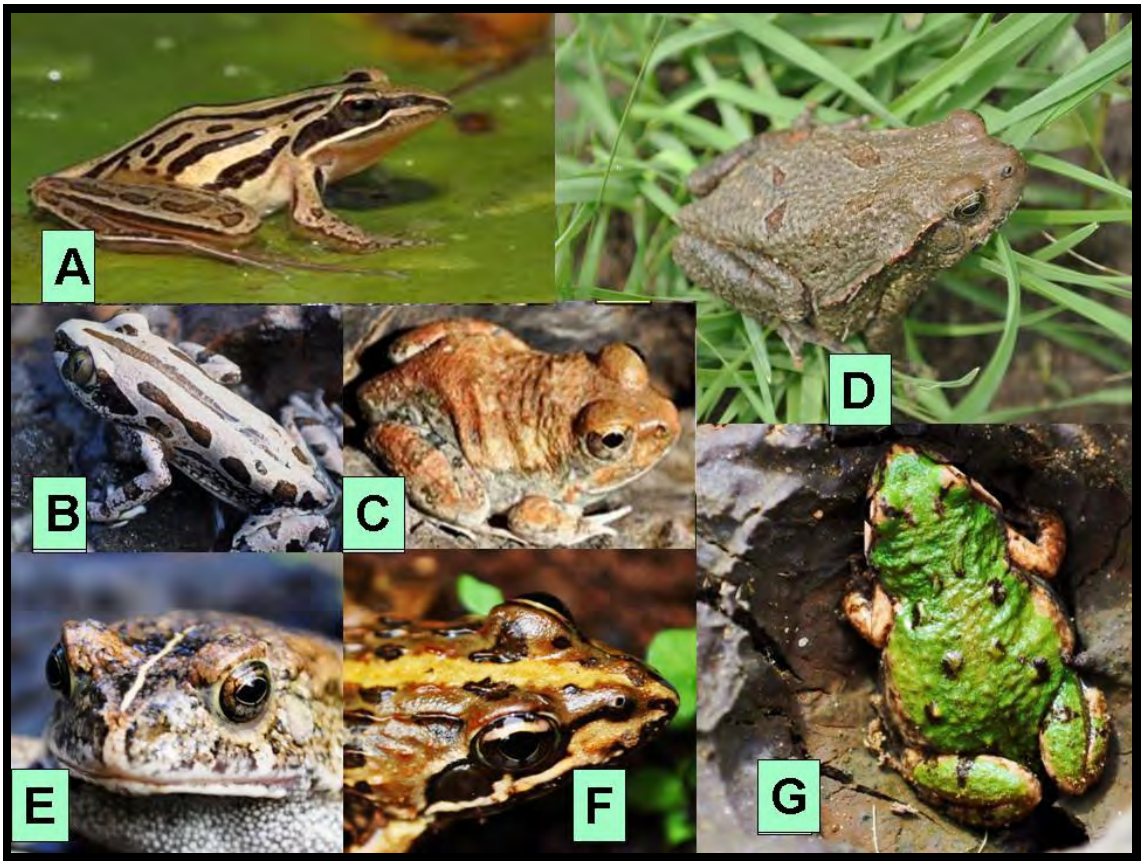

Figure 12: Conglomerate of photographs displaying frog species recorded in the Ogies area

- **A:** Striped Stream Frog (*Strongylopus fasciatus*)*.
- **B:** Bubbling Kassina (*Kassina senegalensis*);
- **C:** Tremelo Sand Frog (*Tomopterna cryptotis*);

- **D:** Red Toad (*Schismaderma carens*);
- **E:** Guttural Toads (*Amietophrynus gutturalis*);
- **F:** Drakensberg River Frog (*Amietia quecketti*)* and
- **G:** Common or Boettger's Caco (*Cacosternum boettgeri*).

Table 8: Frog species recorded from the 2629 AA QDGC according to Frog Map

Family	Common name	Genus	Species	Red list category	Atlas region endemic
Bufonidae	Guttural Toad	*Amietophrynus*	*gutturalis*	Least Concern	No
Bufonidae	Raucous Toad	*Amietophrynus*	*rangeri*	Least Concern	No
Hyperoliidae	Bubbling Kassina	*Kassina*	*senegalensis*	Least Concern	No
Hyperoliidae	Rattling Frog	*Semnodactylus*	*wealii*	Least Concern	No
Pipidae	Common Platanna	*Xenopus*	*laevis*	Least Concern	No
Pyxicephalidae	Cape River Frog	*Amietia*	*fuscigula*	Least Concern	No
Pyxicephalidae	Drakensberg River Frog	*Amietia*	*quecketti*	Least Concern	Yes
Pyxicephalidae	Common Caco	*Cacosternum*	*boettgeri*	Least Concern	No
Pyxicephalidae	Giant Bull Frog	*Pyxicephalus*	*adspersus*	Near Threatened	No
Pyxicephalidae	Striped Stream Frog	*Strongylopus*	*fasciatus*	Least Concern	No
Pyxicephalidae	Natal Sand Frog	*Tomopterna*	*natalensis*	Least Concern	No

* recorded during current survey (April 2015)

Figure 13: The red listed 'near-threatened' Giant Bullfrog (*Pyxicephalus adspersus*)

The red listed 'near-threatened' Giant Bullfrog (*Pyxicephalus adspersus*) has been recorded from the 2629 AA QDGC.

4.5.1 Habitat available for Sensitive Or Endangered Species

One threatened amphibian species namely the Giant Bullfrog (*Pyxicephalus adspersus*) has been recorded in the 2629AA QDGC according to FrogMAP (SAFAP). The Giant Bullfrog is currently assigned as a near-threatened species (IUCN Red List category). The predicted distribution of *P. adspersus* was determined using environmental variables such as elevation (800 to 1700m a.s.l.) and mean annual rainfall of less than 750mm. It is absent from high lying areas with high rainfall. These habitats are estimated to be more than 40% transformed. Loskopdam Nature Reserve is the only provincial protected reserve where the Giant Bullfrog was recorded (Jacobsen *et al.* 1986). For this reason the species is considered **Vulnerable** in the Mpumalanga Province.

A major causal factor in the decline in Giant Bullfrog populations in the Ogies-Kendal area is massive habitat destruction by previous agricultural activities (draining wetlands, ploughing of grasslands) and recently by extensive coal mining activities. Major and secondary road networks bisect suitable breeding and foraging areas resulting in mass road fatalities of migrating adult and juvenile bullfrogs.

Fences and walls also prevent the natural migration of adult and juveniles from foraging areas and suitable breeding sites (habitat fragmentation). Habitat deterioration due to changes in the seasonality of wetland sites (damming), deterioration of water quality due to surface water contamination with pesticides and pollutants and weed and reed invasion lead to the disappearance of bullfrog populations. Human predation of adult bullfrogs is another causal factor in population declines. This is especially prevalent in the rural parts of Southern Africa

(Hammanskraal, Seshego) as well as around larger informal settlements such as Diepsloot (*pers.obs*.). Bullfrogs are also caught illegally for the local and international pet industry.

Specimens recorded were of road fatalities, migrating adult males as well as juveniles within the Ogies area (pers. comm. A. De Castro). Bullfrog density commonly varies within certain habitats (open grassland habitat). High densities are often associated with specific microhabitats or patches (hygrophytic or aquatic ephemerophytic grass and sedge dominated temporary pans) that can be identified and randomly sampled. Emphasis must be placed on remaining natural open grassland habitats (important migratory and foraging areas) as well as seasonal wetlands (pans, valley bottom wetlands and marshland vegetation) around the existing and proposed new 7km 88kV alternative alignments.

The seasonal wetland habitats including seasonally inundated depressions adjacent to the valley bottom wetlands offer the most suitable breeding habitat for Giant Bullfrogs in the area. The open moist grasslands adjacent to the valley bottom wetlands offer favourable foraging and possible aestivation habitat for remaining Giant Bullfrogs (if any). No major Giant Bullfrogs populations are expected from the existing powerline servitudes and highly unlikely to occur within the proposed new 7km 88kV alternative alignments or immediately surrounding areas due to extensive habitat transformation (mining and agricultural activities; major road networks bisecting foraging and breeding habitats) as well as degradation (massive deterioration in surface and groundwater quality).

5. SENSITIVE HABITATS ON THE SITE AND ADJACENT AREAS

From a desktop study using inter alia aerial photographs and Google Earth ™ imagery as well as a preliminary site investigation (21st - 23rd of April 2015) the following four sensitivity categories of areas were identified:

High: Areas with high species richness and habitat diversity comprising natural indigenous plant species. These areas are ecologically valuable and important for ecosystem functioning.

Medium-High: An area with a relatively natural species composition; a threatened or unique ecosystem; moderate species and habitat diversity. These areas are ecologically valuable and important for buffering adjacent ecosystem functioning (valley bottom wetlands).

Medium-Low: An area with a relatively natural species composition; not a threatened or unique ecosystem; moderate species and habitat diversity but is currently degraded. Could be developed with mitigation and expected low impact on adjacent ecosystems.

Low: A totally degraded and transformed area with a low habitat diversity and ecosystem functioning; no viable populations of natural plants. Development could be supported with little to no impact on the adjacent natural vegetation / ecosystem.

The Mpumalanga Biodiversity Sector Plan (MBSP) has been jointly developed by the Mpumalanga Tourism and Parks Agency (MTPA) and the Department of Agriculture and Land Administration (DALA). The MBSP is a spatial biodiversity plan for Mpumalanga that is based on scientifically determined and quantified biodiversity objectives, intended to guide conservation and land-use decisions in support of sustainable development.

The MBSP mapped the distribution of Mpumalanga's known biodiversity into six categories, namely:

(a) Protected areas (already protected and managed for conservation);

(b) Irreplaceable areas (no other options available to meet targets – protection is crucial);

(c) Highly Significant areas (protection needed, very limited choice for meeting targets);

(d) Important and Necessary areas (protection needed, greater choice in meeting targets);

(e) Ecological Corridors (mixed natural areas with most choices, including for development);

(f) Areas of Least Concern (natural areas with most choices, including for development);

(g) Areas with No Natural Habitat Remaining (transformed areas that make no contribution to meeting targets).

The MBSP is accompanied by land-use planning guidelines to guide planning and development within each of the biodiversity conservation categories throughout the Province. In each category there are different land use and development consequences. The Grootpan-Brakfontein existing and proposed new alternative alignments are situated mainly within areas classified as "Modified" as well as 'Natural' areas which comprise valley bottom wetlands according to the Mpumalanga Biodiversity Sector Plan (MBSP, 2014). The proposed new 88kV alignment bisects an area classified as 'Natural" but the area immediately to the south of Ogies comprises transformed old agricultural and mining areas (see Figure 14).

The **Degraded and Transformed Grasslands** are influenced by various factors namely dumping of soil and waste products, ploughing, and alien vegetation invasion. These effects has led the area to become totally degraded with pioneer weedy and declared invasive weeds dominating the vegetation. There is no resemblance to natural vegetation and the area is transformed. Low faunal diversity is expected from these heavily degraded areas on the site. From vegetation and faunal perspective the existing servitudes and new 7km 88kV alternatives have a **low sensitivity and conservation potential/value** as well as **ecosystem functioning.**

Agricultural lands have been used for crop production and planted pastures for many years. As a result the land has previously been ploughed and disked and grass, soya beans and maize seeds sown. **Pasture lands** has been used as a planted pasture for many years. As a result the land has previously been ploughed and disked and grass seeds sown. The natural vegetation has been displaced with no remnants of the original vegetation remaining. The few natural species

present are all pioneer and weedy species while many individuals of alien invasive weeds are present as would be expected on pasture lands where continuous disturbance takes place. The area has low species richness and is uneven in terms of species diversity with *Eragrostis tef* dominant. The planted pastures and adjacent dumping site have a low faunal component due to the impoverished habitats on the site and adjacent areas. From vegetation and faunal perspective the site has a **low sensitivity and conservation value** as well as **ecosystem functioning.**

The **afforested plantations** are dominated by alien invasive *Eucalyptus* stands. The natural vegetation has been displaced with no remnants of the original vegetation remaining. The few natural species present are all pioneer and weedy species while many individuals of alien invasive weeds are present. The area has low species richness and is uneven in terms of species diversity with *Eucalyptus camaldulensis* dominant. The afforested plantations and adjacent transformed grassland have a low faunal component due to the impoverished habitats on the site and adjacent areas. From vegetation and faunal perspective the site has a **low sensitivity and conservation value as well as ecosystem functioning.**

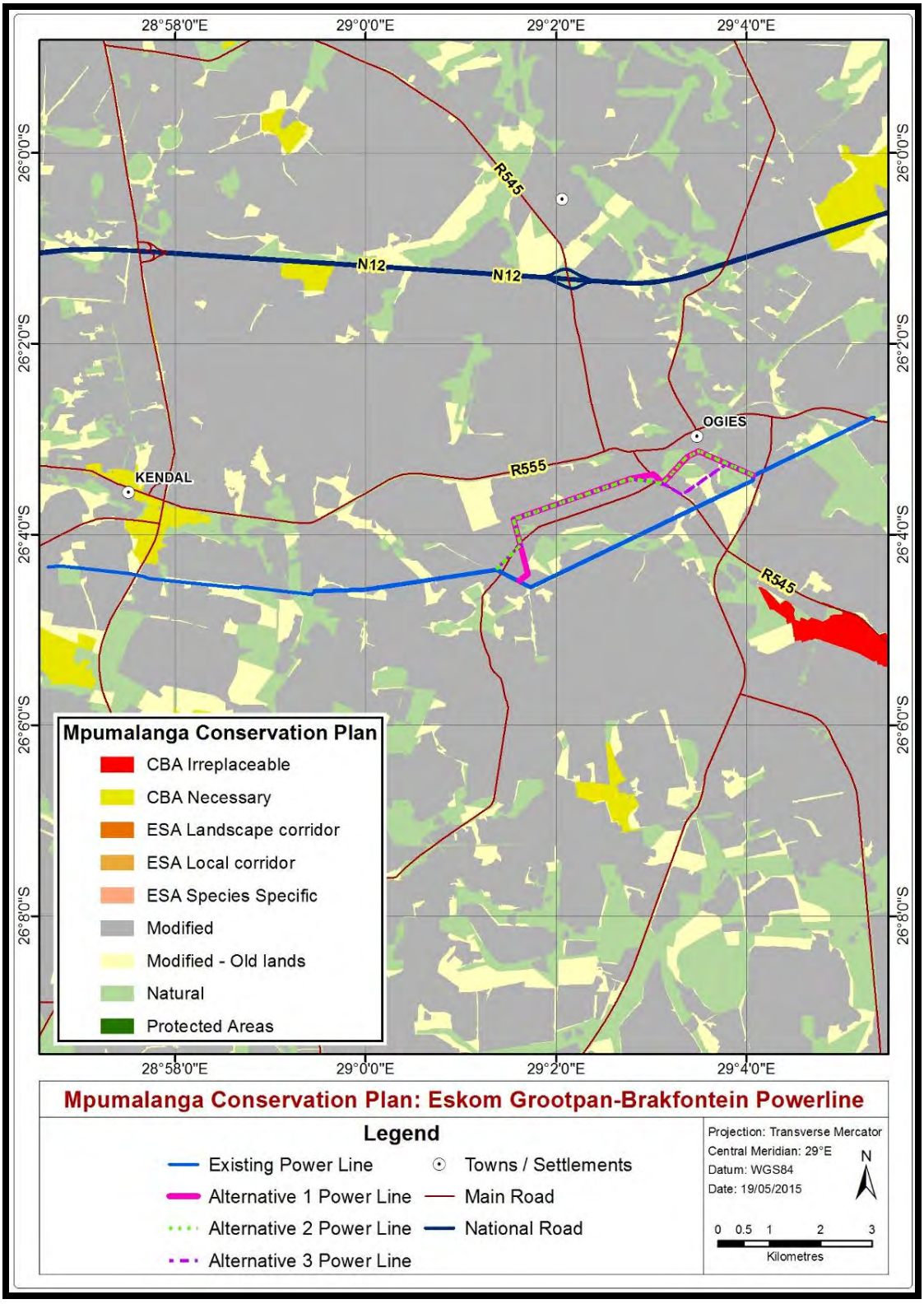

Figure 14: **Mpumalanga Biodiversity Sector Plan (MBSP) for the proposed Grootpan-Brakfontein powerline project**

5.1 Eastern Highveld Grasslands (Gm12)

The remaining sour and moist Eastern Highveld Grasslands (Gm12) are considered to be of **high conservation importance** and **sensitivity** at a local and national scale for the following reasons:

- Eastern Highveld Grasslands are considered to be **Endangered** in South Africa (Mucina & Rutherford, 2006). Some 44% is already transformed by cultivation, plantations, urban sprawl, mining and building of road and dam infrastructure. The majority of open grasslands are transformed and degraded around the Ogies area. This Vegetation types are under severe threat from urbanization, mining activities and agriculture activities (ploughing and cultivation) within a local Ogies scale.
- Open grassland is an animal habitat which is under severe pressure at a local (Ogies) and provincial (Mpumalanga) and national (South Africa) scale. Grasslands originally covered 61% of Mpumalanga, but 44% of this has been transformed by agriculture and other development. This substantial and irreversible reduction of the biome is due mainly to cultivation, especially industrial scale agriculture and timber growing. These land uses destroy biodiversity but extensive livestock grazing can be reasonably biodiversity-friendly, provided good management and safe stocking rates are applied.
- Provides important buffering habitat for adjacent valley bottom wetlands as well as suitable occasional foraging habitats for certain threatened fauna species such as Giant Bullfrog, Serval, South African Hedgehog, Secretarybird, Southern Bald Ibis as well as African Grass Owl.

5.2 Palustrine Wetands

Figure 15: Palustrine wetlands in the study area

The channelled and un-channelled valley bottom wetlands and seasonally inundated depressions are considered to be of **High conservation** importance and **Sensitivity** for the following reasons:

- The indigenous hydrophilic vegetation of the seasonal wetland wetlands within the Mpumalanga Province, and wetlands in general throughout the Grassland Biome are restricted habitats offer critical habitat to any threatened plant and animal species. All wetlands and associated marshland vegetation within Mpumalanga must therefore be regarded as of high conservation importance.
- Wetlands throughout the world, and especially in South Africa, have been widely abused and even destroyed. A combination of agriculture, afforestation and urban/industrial alteration of wetlands has resulted in 50% of them being transformed and rendered dysfunctional. This is mostly an irreversible loss, which contributes significantly to the national water crisis. All wetlands are protected by law (National Water Act, 36 of 1998) because of their importance as water management and storage areas and their vulnerability to damaging impacts
- Indigenous marshland vegetation such as that found within the study area, comprises a habitat which is restricted in extent, highly productive and which contains a high diversity of plants and animals, many of which are restricted or heavily dependent on such habitat. The marshland or seepage vegetation and seasonal wetlands and remnant patched of *Leersia hexandra, Leersia hexandra, Eleocharis dregeana, Echinochloa colona, Paspalum urvillei* comprises the most important habitats, within the study area, for remaining threatened faunal species which may possibly occur, e.g.: Giant Bullfrog, African Marsh harrier and the African Grass Owl. *Leersia hexandra* is the larval food-plant for the threatened Marsh Sylph (*Metisella meninx*) butterfly. Any activity within the valley bottom wetlands and seasonally inundated depression must be strictly regulated (see Wetland Delineation and Functional Assessment Report).

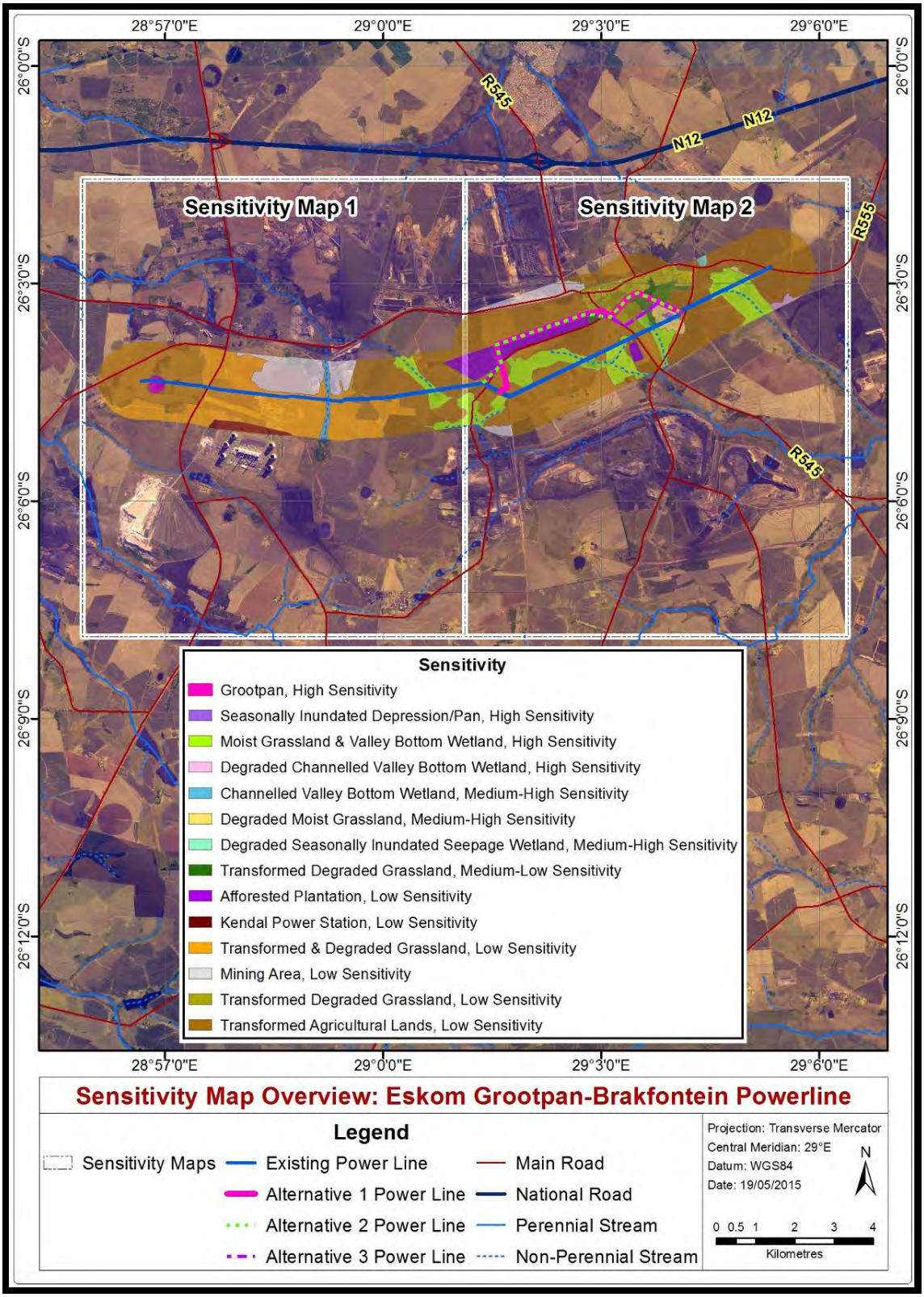

Figure 16: Preliminary sensitivity map for the proposed Grootpan-Brakfontein powerline project

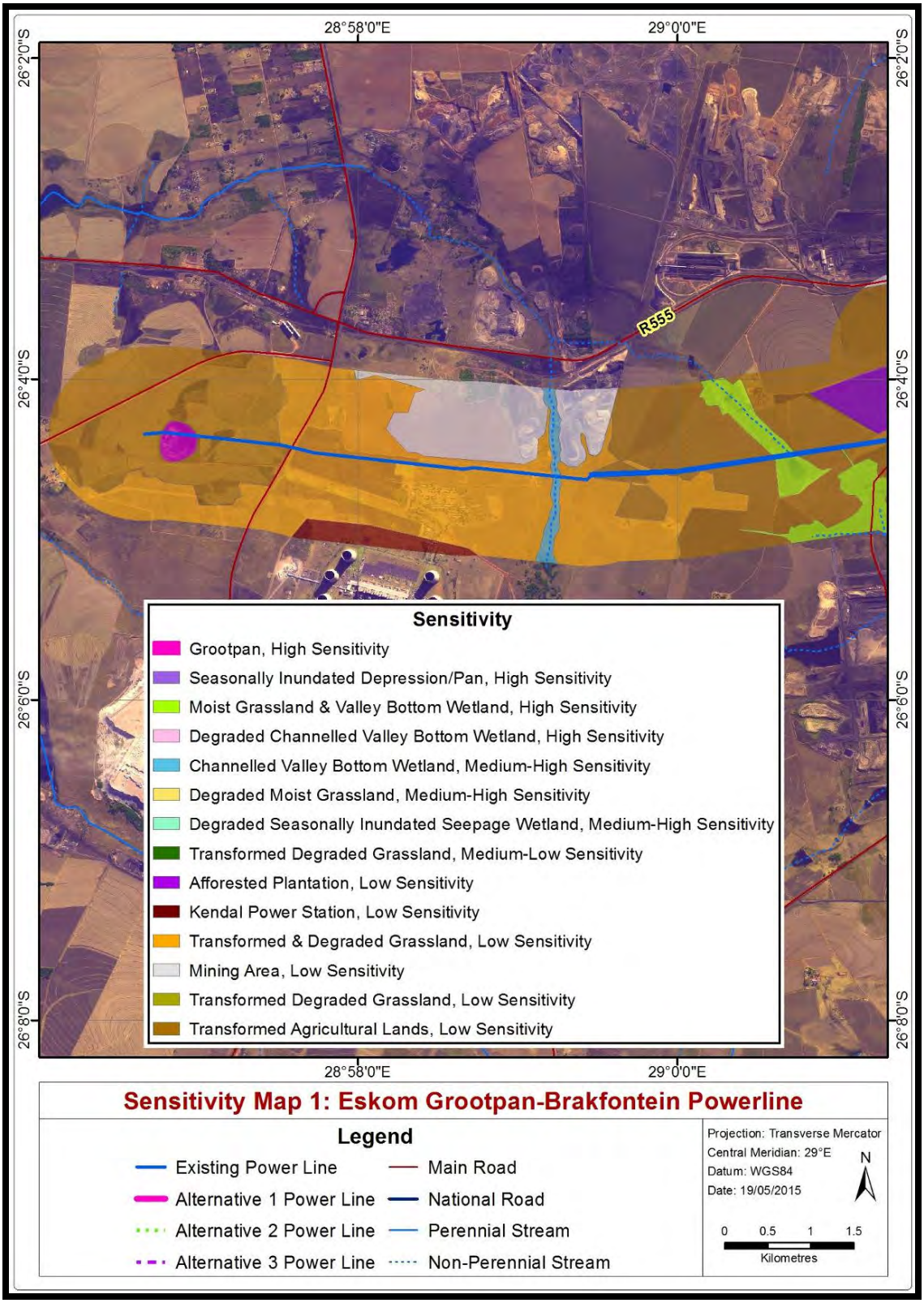

Figure 17: Sensitivity Map 1 -Preliminary sensitivity map for the proposed Grootpan-Brakfontein powerline project

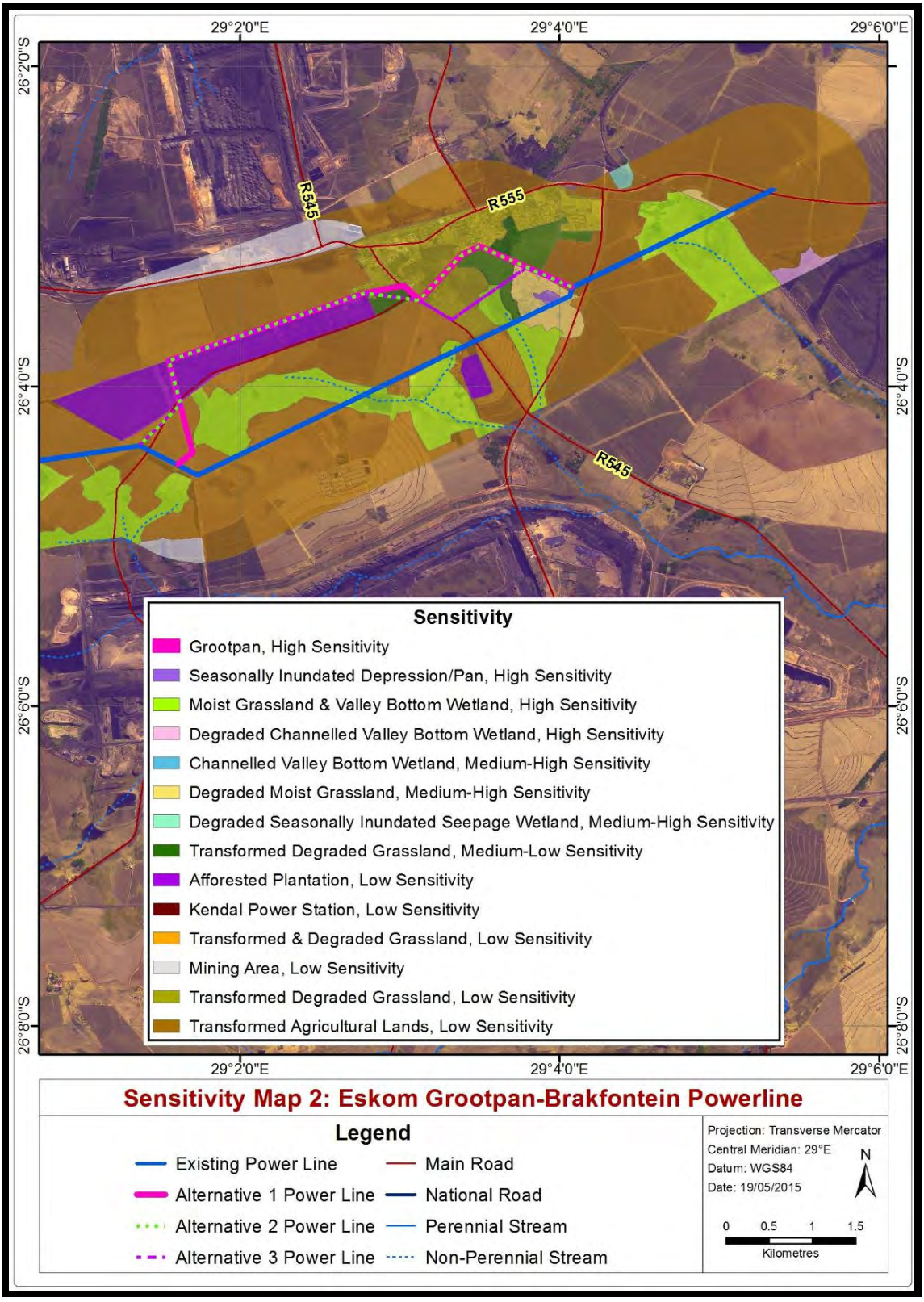

Figure 18: Sensitivity Map 2 - Preliminary sensitivity map for the proposed Grootpan-Brakfontein powerline project

6. EVALUATION OF THE TWO NEW 88kV ALTERNATIVE ALIGNMENTS

As mentioned previously, three potential alignments have been identified for the two new 7km 88kV alternative alignment. Factors considered in evaluating and determining the order of preference of the three corridors in terms of vegetation and faunal impacts are listed and discussed below:

6.1 Line Option 1:

- From the existing line the alignment runs in a north-westerly direction for approximately 1km towards Ogies. This section of the alignment is dominated by transformed agricultural lands as well as heavily degraded grasslands adjacent to Ogies.
- The alignment heads in a westerly direction for approximately 890m through transformed and degraded grassland son the outskirts of Ogies.
- The alignment continues in a westerly direction for 2.6km following and existing access road servitude. The vegetation comprised heavily transformed and degraded grasslands as well as the outer edge of a *Eucalyptus* plantation.
- The alignment heads in a southerly direction for 1.36km following the existing mine conveyor belt and access road. The alignment bisects a narrow (10m) artificially created drainage channel which feeds into the broad valley bottom wetland to the east.
- This is the preferred option with Option 2 from an ecological perspective as the entire alignments are situated within transformed and heavily degraded vegetation units as well as impoverished faunal habitats. Vegetation clearance will be restricted to the removal of alien invasive tree species.

6.2 Line Option 2:

- From the existing line the alignment runs in a north-westerly direction for approximately 1km towards Ogies. This section of the alignment is dominated by transformed agricultural lands as well as heavily degraded grasslands adjacent to Ogies.
- The alignment heads in a westerly direction for approximately 915m through transformed and degraded grassland son the outskirts of Ogies.
- The alignment heads in a northerly direction towards Ogies and follows the R545 road reserve.
- The alignment continues in a westerly direction for 2.6km following and existing access road servitude. The vegetation comprised heavily transformed and degraded grasslands as well as the outer edge of a *Eucalyptus* plantation.
- The alignment heads in a southerly direction for 1.36km following the existing mine conveyor belt and access road. The alignment bisects a narrow (10m) artificially created drainage channel which feeds into the broad valley bottom wetland to the east.
- This is also a preferred option from an ecological perspective as the entire alignment is situated within transformed and heavily degraded vegetation units as well as impoverished faunal habitats. Vegetation clearance will be restricted to the removal of alien invasive tree species.

6.3 Line Option 3:

- From the existing line the alignment runs in a north-westerly direction for approximately 530m towards Ogies. This section of the alignment is dominated by transformed agricultural lands as well as heavily degraded grasslands adjacent to Ogies.
- The alignment turns in a south-westerly direction towards the R545 for approximately 980m. The alignment bisects the degraded upper sections of a broad channelled valley bottom wetland. The alignment bisects an approximately 400m section and towards will have to be situated within the temporary wet zones.
- The alignment heads in a north-westerly direction for 960m along the R545 road reserve and bisecting transformed agricultural lands as well as degraded grasslands. Passes through relatively undisturbed grassland areas as well as within close proximity to two artificially created dams along the valley bottom wetlands.
- The alignment turns towards the west and follows and existing access road and is situated within the outer edge of a *Eucalyptus* plantation for 3.52km.
- The alignment turns in a south-easterly alignment for approximately 970m to join the existing Grootpan-Brakfontein lines.
- This is the second preferred option from an ecological perspective due to the bisecting of the degraded upper sections of a broad un-channelled valley bottom wetland.

In order to rank these alternatives a table was compiled and the three corridors given a rating on a scale of 1 to 5, with 1 being the least preferred and 5 being the most highly preferred option.

Table 9: Preference rating for the 3 alternatives alignments

Line Option	Preference Rating
1	**5**
2	**5**
3	**3**

As can be seen from the discussions and table above, line Option 1 and 2 are slightly preferred over Option 3. Option 3 bisects an approximately 400m section of the degraded upper section of a broad un-channelled valley bottom wetland system. Option 1 and Option 2 are the preferred options from an ecological perspective as the entire alignments are situated within transformed and heavily degraded vegetation units as well as impoverished faunal habitats. Vegetation clearance will be restricted to the removal of alien invasive tree species.

7. IMPACT RANKING OF POTENTIAL IMPACTS TO ASSOCIATED VEGETATION AND FAUNA

Table 10: The impact rating criteria used for determining potential impacts of the Grootpan-Brakfontein powerline project

Descriptive criteria		
Nature	**Include a descriptive sentence**	
Probability	**Categories 1 – 5**	
	1	Improbable (less than 24% chance of occurring)
	2	Probable (25 – 49%)
	3	Likely (50 – 69%)
	4	Very likely (70 – 89%)
	5	Definite (90 – 100%)
Frequency	Categories 1 – 5	
	1	Very rare to remote (once or twice a decade)
	2	Unusual to occasional (once or twice every 5 years)
	3	Frequent (a few times a month)
	4	Very frequent (a few times a week, to daily)
	5	Continuous (daily to a significant percentage of every day)
Extent	Categories 1 – 5	
	1	Footprint / site
	2	Local
	3	Regional
	4	National
	5	International (trans-boundary)
Duration	Categories 1 – 5	
	1	Short (few days to a few months, less than a phase)
	2	Short (few months, or less than a phase in total)
	3	Medium (a few years, significant part of a phase)
	4	Long (lifespan of development (i.e. all of operation)
	5	Permanent
Intensity	Categories 1 – 5	
	1	Very low – natural processes not affected
	2	Low – natural processes slightly affected
	3	Medium – natural processes continue but in a modified manner
	4	Medium-high – natural processes are modified significantly
	5	High – natural processes disturbed significantly so that they cease to occur (temporarily / permanently)
Significance	**Significance = P + F + E + D + I** Minimum value of 5, maximum of 25 Status determines if positive / negative	
	Any positive value	No impact High to low consequence, probability not an issue as positive, **no mitigation required**
	– 5	Low-Low consequence, probably, **minimal mitigation may be required**
	– 6 to 10	Medium-Medium consequence, probably, **mitigation is advised / preferred**
	– 11 to 15	Medium to high-Medium to high consequence, probably to very probable, **mitigation is necessary**
	– 16 to 20	High-High consequence, probably / definite, **mitigation is essential**

Descriptive criteria		
Nature	**Include a descriptive sentence**	
	– 21 to 25	Extreme-Very high consequence, definite, **Fatal flaw!**

Table 11: Summary table of the potential impacts of the decommissioning or removal of the section of the Grootpan-Brakfontein powerline project

Nature of Impact	Probability	Frequency	Extent	Duration	Intensity	Significance
Habitat destruction with transformation of natural vegetation and habitats within the proposed alignments	Improbable (less than 24% chance of occurring)	Short only during de-commissioning Phase	Local Footprint / site	Short only during de-commissioning Phase	Very low – natural processes not affected	Low-Low consequence, probably, **minimal mitigation may be required**
Destruction of suitable habitat for red listed plants and animals	Improbable (less than 24% chance of occurring)	Short only during de-commissioning Phase	Local Footprint / site	Short (few days to a few months, less than a phase)	Very low – natural processes not affected	Low-Low consequence, probably, **minimal mitigation may be required**
Erosion and sediment from removed towers.	Improbable (less than 24% chance of occurring)	Short only during de-commissioning Phase	Local Footprint / site, but eroded soil could be washed onto other ecosystems	Short (few days to a few months, less than a phase)	Very low – natural processes not affected	Low-Low consequence, probably, **minimal mitigation may be required**

Table 12: Summary table of the potential impacts of the two new 88kV alternative alignments of the Grootpan-Brakfontein powerline project (all three alternatives will result in the similar impacts)

Nature of Impact	Probability	Frequency	Extent	Duration	Intensity	Significance
Habitat destruction with transformation of natural vegetation and habitats within the proposed site	Improbable (less than 24% chance of occurring)	Very rare to remote (the majority of vegetation is completely transformed)	Local Footprint / site	Long (lifespan of development (i.e. all of operation)	Very low – natural processes not affected	Low-Low consequence, probably, **minimal mitigation may be required**
Destruction of suitable habitat for	Improbable (less than 24% chance		Local Footprint / site	Short (few days to a few months, less than a	Very low – natural	Low-Low consequence, probably, **minimal mitigation may be required**

Nature of Impact	Probability	Frequency	Extent	Duration	Intensity	Significance
red listed plants and animals	of occurring)			phase)	processes not affected	
Erosion and sediment from removed towers.	Improbable (less than 24% chance of occurring)	Short only during the construction Phase	Local Footprint / site, but eroded soil could be washed onto other ecosystems	Short (few days to a few months, less than a phase)	Very low – natural processes not affected	Low-Low consequence, probably, **minimal mitigation may be required**

8. GENERIC DESCRIPTION OF POTENTIAL IMPACTS OF POWER LINES ON ASSOCIATED FAUNA

Because of their size and prominence, electrical infrastructures constitute an important interface between wildlife and man. Negative interactions between wildlife and electricity structures take many forms, but two common problems in Southern Africa are electrocution of birds (and other animals) and disturbance and habitat destruction during construction and maintenance activities.

8.1 Habitat Destruction and Disturbance

During the construction phase and maintenance of powerlines, some habitat destruction and alteration inevitably takes place. This happens with the construction of access roads, and the clearing of servitudes. Servitudes have to be cleared of excess vegetation at regular intervals in order to allow access to the line for maintenance, to prevent vegetation from intruding into the legally prescribed clearance gap between the ground and the conductors and to minimize the risk of fire under the line which can result in electrical flashovers. These activities have an impact on fauna breeding, foraging and roosting in or in close proximity of the servitude, both through modification of habitat and disturbance caused by human activity.

8.1.1 Mitigation and Recommendations

The following general recommendations are made to minimise the impacts of pipeline construction on **threatened fauna**:

- Close site supervision must be maintained during construction as well as de-commissioning phase.
- During the **CONSTRUCTION** phase workers must be limited to areas under construction and the existing servitude during the removal of existing lines and access to the undeveloped areas, especially the surrounding open grassland and valley bottom wetlands areas must be strictly regulated ("no-go" areas during construction and removal activities).
- Provision of adequate toilet facilities must be implemented to prevent the possible contamination of ground (borehole) water in the area. Mobile toilets must be provided in order to minimise unauthorised traffic of construction workers outside of the designated areas.
- All temporary stockpile areas including litter and dumped material and rubble must be removed on completion of construction. The dismantled towers and powerline must be removed from the site. All alien invasive plant should be removed from the existing and new servitudes to prevent further invasion.
- Access to the new powerline servitudes must be restricted. Access to the powerline servitude should ideally be fenced off and gated along the main access roads. No quad-bikes, motorcycles or off road vehicles and illegal hunting should be permitted in the adjacent properties.
- Firearms or any other hunting weapons must be prohibited on site.
  - Contract employees must be educated about the value of wild animals and the importance of their conservation.

- Educational programmes for the contractor's staff must be implemented to ensure that project workers are alerted to the possibility of snakes being found during vegetation clearance. The construction team must be briefed about the management of snakes in such instances. In particular, construction workers are to go through ongoing refresher courses to ensure that threatened snakes, such as striped-harlequin snake, are not killed or persecuted when found.
- Severe contractual fines must be imposed and immediate dismissal on any contract employee who is found attempting to snare or otherwise harm wild animals.
- No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.

8.2 Vegetation/Flora

Protected or endangered species may occur along the line route. Special care should be taken not to damage or remove any such species unless absolutely necessary. Permits for removal must be obtained from Provincial Nature Conservation should such species be affected. All plants not interfering with the operation of the line shall be left undisturbed. Collection of firewood and traditional medicinal plants is strictly prohibited. No area should be cleared of trees, bushes and other vegetation for the purpose of a camping site.

8.2.1 Management Objective

- Minimal disturbance to vegetation where such vegetation does not interfere with construction and operation of the line.
- No unnecessary destruction to surrounding vegetation during the removal of the powerline.
- Protection of any protected or endangered plant species.
- Prevention of litigation concerning removal of vegetation.

8.2.2 Measurable Targets

- Adequate protection of any endangered or threatened plant or tree species.
- No litigation due to removal of vegetation without the necessary permits.

8.2.3 Mitigation and Recommendation

Remaining indigenous bulbous geophytes including *Hypoxis rigidula* and Aloes should be relocated away from any proposed tower site. The single *Hypoxis hemerocallidea* observed under the existing line should not be impacted on during the removal of the existing powerline. The single plant is positioned away from any towers. Where herbicides are used to clear vegetation, specimen-specific chemicals should be applied to individual plants only. General spraying should be prohibited.

All alien vegetation should be eradicated over a five-year period. Invasive species (*Acacia mearnsii, A. dealbata, Eucalyptus*) should be given the highest priority. No dumping of any materials in undeveloped open areas and neighbouring properties. Activities in the surrounding open undeveloped areas (especially open grasslands and valley bottom wetlands) must be strictly regulated and managed.

The construction of the proposed new 7km 88kV alternative Grootpan-Brakfontein powerlines could result in limited opening-up of the vegetal cover during the construction phase. As the majority of the alignment is situated within transformed agricultural lands and degraded grasslands vegetation removal will be restricted to the removal of alien invasive tree species. This impact is anticipated to be localised, of a short-long-term nature and of low significance, provided that appropriate mitigation measures are implemented (e.g. the limitation of vegetation clearance to the actual servitude).

Prior to construction and vegetation clearance a suitably qualified Environmental Control Officer (ECO) should closely examine the proposed construction areas (tower supports) for the presence of any animal burrows (including spiders and scorpions), rocky outcrops, logs, stumps and other debris and relocate any affected animals to appropriate habitat away from the servitude or tower.

8.3 Revegetation

Where necessary a suitable mixture of grass seed shall be used to re-seed damaged areas. Badly damaged areas shall be fenced in to enhance rehabilitation. Areas to be rehabilitated must be planted with a mixture of endemic pioneer grass species endemic to the area, as soon as the new growing season starts. To get the best results in a specific area, it is a good idea to consult with a vegetation specialist or the local extension officer of the Dept of Agriculture. Seed distributors can also give valuable advice as to the mixtures and amount of seed necessary to seed a certain area. Re-seeding, as well as fencing in of badly damaged areas, will always be at the discretion of the Environmental Control Officer, unless specifically requested by a Landowner.

8.3.1 Management Objective

- Minimise damage to topsoil and environment at tower positions.
- Successful rehabilitation of all damaged areas.
- Prevention of erosion.

8.3.2 Measurable Targets

- No loss of topsoil due to construction activities.
- All disturbed areas successfully rehabilitated within three months of completion of the contract.
- No visible erosion scars three months after completion of the contract.

A mixture of seed can be used provided the mixture is carefully selected to ensure the following:
a) Annual and perennial plants are chosen.
b) Pioneer species are included.
c) All the plants shall not be edible.
d) Species chosen will grow in the area without many problems.
e) Root systems must have a binding effect on the soil.
f) The final product should not cause an ecological imbalance in the area.

8.3.3 Construction & De-Commissioning Phase

- Disturbed areas of natural vegetation around the new and removed towers must be rehabilitated immediately to prevent soil erosion.
- Re-seeding shall be done on disturbed areas as directed by the Environmental Control Officer.

8.4 Surrounding Farming Activities

8.4.1 Domestic Livestock

Construction activities must be planned carefully so as not to interfere with the calving and lambing season for most animal species. The Contractor's workforce will have to be very careful not to disturb the animals as this may lead to fatalities which will give rise to claims from the Landowners. Interference with any wildlife without the applicable permits shall not be allowed. The Contractor shall under no circumstances interfere with livestock without the Landowner being present. This includes the moving of livestock where they interfere with construction activities. Should the Contractors workforce obtain any livestock for eating purposes, they must be in possession of a written note from the Landowner. Speed limits must be restricted especially on farm roads (30km/hr) preventing unnecessary road fatalities of surrounding livestock.

8.4.2 Management Objective

- Minimise disruption of surrounding farming activities.
- Minimise disturbance of fauna.
- Minimise interruption of breeding patterns of fauna.

8.4.3 Measurable Targets

- No hunting and poaching or intentional killing of animals (including snakes, scorpions, spiders).
- No stock losses where construction is underway.
- No complaints from Landowners or Nature Conservation Department.
- No litigation concerning stock losses and animal deaths.

8.5 Access Roads

Planning of access routes must be done in conjunction between the Contractor, Eskom and the Landowner. All access to private farmland must be negotiated in advance with land-owners. All agreements reached shall be documented in writing and no verbal agreements should be made. The condition of existing access / private roads to be used shall be documented with photographs.

The Contractor shall properly mark all access roads. Markers shall show the direction of travel as well as tower numbers to which the road leads. Roads not to be used shall be marked with a "**NO ENTRY**" sign. Unnecessary traversing of agricultural and natural open land is discouraged. Where required, speed limits shall be indicated on the roads (30km). All speed limits shall be strictly adhered to at all time.

Vehicle access to the powerline servitude must as far as possible be limited to existing roads. If a new access roads need to be constructed it should follow cleared areas such as cattle pathways. The following mitigation should also be undertaken:

8.5.1 Vegetation Clearance Management Objective

- Minimise damage to surrounding vegetation.
- Minimise damage to topsoil.
- Successful rehabilitation of barren areas.

8.5.2 Measurable Targets

- No damage to vegetation outside the road servitude.
- No loss of topsoil.
- No visible erosion three months after completion of the contract.
- All disturbed areas successfully rehabilitated three months after completion of the contract.

The objective of vegetation clearing is to trim, cut or clear the minimum number of trees and vegetation necessary for the safe mechanical construction and electrical operation of the transmission line. Only an 8m strip may be cleared flush with the ground to allow vehicular passage during construction. No scalping shall be allowed on any part of the servitude road unless absolutely necessary. The removal of all economically valuable trees or vegetation shall be negotiated with the Landowner before such vegetation is removed.

Vegetation clearing on tower sites must be kept to a minimum. Big trees with large root systems shall be cut manually and removed, as the use of a bulldozer will cause major damage to the soil when the root systems are removed. Stumps shall be treated with herbicide. Smaller vegetation can be flattened with a machine, but the blade should be kept above ground level to prevent scalping. Any vegetation cleared on a tower site shall be removed or flattened and not be pushed to form an embankment around the tower.

Trees and vegetation not interfering with the statutory clearance to the conductors can be left under the line. Dense vegetation under the line which could cause a fire hazard, particularly in the middle third of the span in the vicinity of the lowest point of the conductors, will be considered as a separate case. With permission of the landowner, the total servitude under the line and up to 5 m outside the outer phases can be cleared.

Protected or endangered species of plants shall not be removed unless they are interfering with a structure. Where such species have to be removed due to interference with a structure, the necessary permission and permits shall be obtained from Provincial Nature Conservation. All protected species not to be removed must be clearly marked and such areas fenced off if required. The single *Hypoxis hemerocallidea* does not need to be fenced off.

Disturbed areas of natural grassland vegetation around the removed and installed towers must be rehabilitated immediately to prevent soil erosion.

The use of herbicides shall only be allowed after a proper investigation into the necessity, the type to be used, the long-term effects and the effectiveness of the agent. Eskom's approval for the use of herbicides is mandatory. Application shall be under the direct supervision of a qualified technician. All surplus herbicide shall be disposed of in accordance with the supplier's specifications.

Upon completion of the stringing operations and before handover, the servitude must be inspected and all vegetation interfering with the safe operation of the line shall be removed / cut down. All alien vegetation in the total servitude and densifiers creating a fire hazard shall be cleared and treated with herbicides.

It is recommended that a contractor for vegetation clearing should comply with the following parameters:

- the contractor must have the necessary knowledge to be able to identify protected species as well as species not interfering with the operation of the line due to their height and growth rate.
- the contractor must also be able to identify declared weeds and alien species that can be totally eradicated.
- the contractor must be in possession of a valid herbicide applicators licence.

8.6 Fire Prevention

The frequent burning of the vegetation will have a high impact on remaining reptile species. Fires during the winter months will severely impact on the hibernating species, which are extremely sluggish. Fires during the early summer months destroy the emerging reptiles as well as refuge areas increasing predation risks.

8.6.1 Management Objective

- Minimise risk of veld fires.
- Minimise damage to grazing.
- Prevent runaway fires.

8.6.2 Measurable Targets

- No veld fires started by the Contractor's work force.
- No claims from Landowners for damages due to veld fires.
- No litigation.

8.6.3 Mitigation and Recommendations

No open fires shall be allowed on site under any circumstance. The Contractor shall have fire-fighting equipment available on all vehicles working on site, especially during the winter months.

8.7 Threatened Animals

At a local scale the study site and surrounding areas comprises little or no suitable habitat for any threatened animal species.

8.7.1 Mitigation and Recommendations

As a precautionary mitigation measure it is recommended that the developer and construction contractor as well as an independent environmental control officer (ECO) should be made aware of the possible presence of certain threatened animal species (Giant Bullfrog, African Grass Owl, Lesser Flamingo, South African Hedgehog) prior to the commencement of construction activities. In the event that any of the above-mentioned species are discovered relevant conservation authorities should be informed and activities surrounding the site suspended until further investigations have been conducted. If any Golden Moles are unearthed during any phase of the development, a mammologist should immediately be brought to the site to evaluate the importance of the record and recommend mitigation measures where necessary.

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APPENDIX D3

HERITAGE ASSESSMENT

Phase 1 Archaeological Impact and Heritage Assessment on portions of the farms Kleinzuikerboschplaat 5 IS, Klipfontein 3 IS and Zondagsvlei 9 IS, in respect of the proposed construction of a 88 kV Eskom Powerline, Ogies, Mpumalanga Province.

Compiled by:

KUDZALA antiquity cc

For **Royal Haskoning DHV**

Surveyor: Mr JP Celliers

6 May, 2015

I, Jean-Pierre Celliers as duly authorised representative of Kudzala Antiquity CC, hereby confirm my independence as a specialist and declare that neither I nor the Kudzala Antiquity CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.

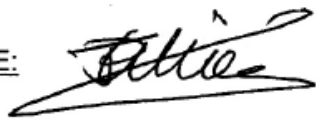
SIGNATURE: 

Table of Contents

Executive summary

Site name and location: Portions of the farms Kleinzuikerboschplaat 5 IS, Klipfontein 3 IS and Zondagsvlei 9 IS near Ogies, Mpumalanga Province.

Purpose of the study: An Archaeological and historic study in order to identify heritage resources in respect of a proposed 88 kV Eskom powerline construction which will affect sections of the farms Kleinzuikerboschplaat 5 IS, Klipfontein 3 IS and Zondagsvlei 9 IS.

1:50 000 Topographical Map: 2629 AA (1995)

EIA Consultant: Royal Haskoning DHV

Client: Eskom

Heritage Consultant: Kudzala Antiquity CC.
Contact person: Jean-Pierre (JP) Celliers Tel: +27 82 779 3748
E-mail: kudzala@lantic.net

Report date: 6 May 2015

Description and findings:

An Archaeological resource survey was undertaken by Kudzala Antiquity CC in respect of a proposed new 88 kV Eskom Powerline and dismantling of the existing line located close to the town of Ogies in Mpumalanga Province. The study was done with the aim of identifying sites which are of heritage significance in the vicinity of the new proposed powerline routes as well as the existing line and assessing their current preservation condition, significance and possible impact of the proposed action. This forms part of legislative requirements as appears in section 38 of the National Heritage Resources act (25 of 1999) and the NEMA (17 of 1998).

Current land use on the proposed area is mixed agriculture (maize and soy bean) and mining activity.

The survey was conducted on foot and with the aid of a motor vehicle in an effort to locate archaeological remains and historic sites, structures and features. A detailed archival study in combination with scrutiny of previous heritage surveys of the area formed the basis on which sites were identified, located and assessed.

A total of 15 sites were located or recorded and documented. A further 27 sites were recorded as survey orientation points along the existing and proposed new powerline routes.

There are three recorded graveyard sites (**sites OG 4, 10 and 12**) which were identified during the physical survey and with the help of previously located graveyards during heritage surveys. They are considered to be of high local social significance (**LS 3A, tables 5.1- 5.6).** Two historic

buildings (**sites OG 7 and OG 13**) is rated with medium significance (**GPB; table 5.1- 5.6**) but both are located outside of the proposed construction routes. Permitted recording is recommended if demolishing of these structures is planned. Another site which is considered to be of medium significance is **OG 8**. This is a Mosque and although the building is not older than 60 years, it is regarded as being of social and religious significance The remaining sites (**OG 1-3, 5, 6, 9, 11, 12, 15 &15)** comprise of farm worker's dwellings and associated infrastructure and small villages which have all been demolished and rated low significance (**GPC; table 5.1- 5.6**). They include some sites which were recorded in an earlier heritage study of the area (de Jongh et. al. 2007) but which have been demolished in the meantime (**sites OG 9, 14**).

To minimise possible impact on the graves it is recommended that the graveyards be fenced and any surviving relatives be allowed access. In the case where graves are older than 60 years they are protected under section 36 of the NHRA (25 of 1999) and therefore a permit must be issued by SAHRA before the graves may be relocated or exhumed. If the graves are younger than 60 years the Human Tissues Act 65 of 1983 applies whereby a registered funeral undertaker may facilitate exhumation and reburial.

1. Introduction

1.1. Terms of reference

Kudzala Antiquity CC was commissioned to conduct an Archaeological and Heritage resources survey on affected portions of the farms Kleinzuikerboschplaat 5 IS, Klipfontein 3 IS and Zondagsvlei 9 IS near Ogies in Mpumalanga Province. The survey was conducted in respect of the pontential impact on archaeological and heritage resources which may occur during the construction of two 88 kV powerlines and the dismantling of two 88 kV powerlines from Grootpan to Brakfontein south of Ogies in Mpumalanga (see detailed maps in Appendix C). The survey was conducted for Royal Haskoning DHV.

1.2. Legislative Framework

The National Heritage Resources Act (Act 25, 1999) and the NEMA (National Environmental Management Act No. 107 of 1998) requires of individuals (engineers, farmers, mines and industry) or institutions to have specialist heritage impact assessment studies undertaken whenever any development activities are planned. This report is the result of an archaeological and heritage scoping study in accordance with the requirements as set out in Section 38 (3) of the National Heritage Resources Act (25 of 1999) in an effort to ensure that heritage features or sites that qualify as part of the national estate are properly managed and not damaged or destroyed.

The study aims to address the following objectives:

- Analysis of heritage issues;
- Assess the cultural significance of identified places including archaeological sites and features, buildings and structures, graves and burial grounds within a specific historic context;
- Identifying the need for more research;
- Surveying and mapping of identified places including archaeological sites and features, buildings and structures, graves and burial grounds;
- A preliminary assessment of the feasibility of the proposed development or construction from a heritage perspective;
- Identifying the need for alternatives when necessary;
- Recommending mitigation measures to address any negative impacts on archaeological and heritage resources.

Heritage resources considered to be part of the national estate include those that are of Archaeological, Cultural or historical significance or have other special value to the present community or future generations.

The national estate may include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living
- heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and paleontological sites;
- graves and burial grounds including:
    - (i) ancestral graves;
    - (ii) royal graves and graves of traditional leaders;
    - *(iii)* graves of victims of conflict;
    - (iv) graves of individuals designated by the Minister by notice in the *Gazette;*
    - (v) historical graves and cemeteries; and other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to slavery in South Africa;
- movable objects including:

(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
(ii) objects to which oral traditions are attached or which are associated with living heritage
(iii) ethnographic art and objects;
(iv) military objects
(v) objects of decorative or fine art;
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Cultural resources are unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities (Van Vollenhoven 1995:3).

These would be any man-made structure, tool, object of art or waste that was left behind on or beneath the soil surface by historic or pre-historic communities. These remains, when studied in their

original context by archaeologists, are interpreted in an attempt to understand, identify and reconstruct the activities and lifestyles of past communities. When these items are disturbed from their original context, any meaningful information they possess is lost, therefore it is important to locate and identify such remains before construction or development activities commence.

1.3. Approach

An AIA (Archaeological Impact Assessment) consists of three phases, this document deals with the first phase. This (phase 1) investigation is aimed at getting an overview of cultural resources in a given area, thereby assessing the possible impact a proposed development may have on these resources.

When the archaeologist encounters a situation where the planned project will lead to the destruction or alteration of an archaeological site, a second phase in the survey is normally recommended. During a phase two investigation mitigation measures are put in place and detailed investigation into the nature and origin of the cultural material is undertaken. Often at this stage, archaeological excavation is carried out in order to document and preserve the cultural heritage.

Phase three consists of the compiling of a management plan for the safeguarding, conservation, interpretation and utilization of cultural resources (Van Vollenhoven, 2002).

Continuous communication between the developer and surveyor after the initial assessment has been carried out may result in the modification of a planned route or development to incorporate or protect existing archaeological and heritage sites.

2. Description of surveyed area

The study area falls within the Emalahleni Local Municipality, Mpumalanga Province. The survey was carried out in an area where the Eastern Highveld Grassland veld type predominates but which is extensively affected and altered previous and ongoing agricultural and mining activity. Limiting factors include the dense nature of the grass, dense alien invasive woods and dense weed growth which limited manoeuvrability. A deep trench and existing linear conveyor system also limited access to certain areas which were previously cultivated. These factors negatively influenced to access to certain areas and also limited to an extent the visibility of archaeological and heritage sites and features.

Veld type: The vegetation forms part of the Grassland Biome and classed in the Mesic Highveld Grasslands as Eastern Highveld Grassland. The landscape is characterised by slightly to moderately undulating plains including low hills and pan depressions. The vegetation is made up of short dense

grassland dominated by the usual Highveld grass composition with scattered small rocky outcrops and wiry sour grasses with some woody species (Mucina and Rutherford, 2009).

Geology and soils: Red to yellow sandy soils of the Ba to Bb land types found on shales and sandstones of the Madzaringwe Formation (Mucina and Rutherford, 2009).

3. Methodology

The study is built up of a desktop archival study in order to understand the study area in a historical timeframe, an archaeological background study which include scrutiny of previous archaeological reports of the area, obtained through the SAHRIS database, and published as well as unpublished written sources on the archaeology of the area, and a lastly a physical survey of the affected and immediate area.

SAHRA (South African Heritage Resources Agency) and the relevant legislation (Act 25 of 1999, National Heritage Resources Act) require that the following components be included in an Archaeological impact assessment:

- Archaeology
- Shipwrecks
- Battlefields
- Graves
- Structures older than 60 years
- Living heritage
- Historical settlements
- Landscapes
- Geological sites
- Paleontological sites and objects

All the above-mentioned heritage components are addressed in this report, except shipwrecks, geological sites and paleontological sites and objects.

The ***purpose*** of the archaeological and heritage study is to establish the whereabouts and nature of cultural heritage sites should they occur on the surveyed area. This includes settlements, structures and artefacts which have value for an individual or group of people in terms of historical, archaeological, architectural and human (cultural) development.

The ***aim*** of this study is to locate and identify such objects or places in order to assess whether they are of significance and warrant further investigation or should be protected. Mitogation measures can then be put in place when necessary.

3.1. Desktop study

The purpose of the desktop study is to compile as much information as possible on the heritage resources of the area. This helps to provide an historical context for located sites. Sources used for this study include published and unpublished documents, archival material and maps. Information obtained from the following institutions or individuals were consulted:

- Lydenburg Museum, Lydenburg
- Published and unpublished archaeological reports and articles
- Published and unpublished historical reports and articles
- Archival documents from the National Archives in Pretoria
- Historical maps
- SAHRIS database

3.1.1. Previous Archaeological studies in the area

A number of Archaeological Impact Assessments (AIA) and Heritage Impact Assessments have been done in the vicinity of the proposed development area.

A study done by de Jongh, Pistorius and Bakker which consolidates information compiled between 2005 and 2007 extensively describes archaeological, built environment and grave sites in the Ogies area. Most of these sites are however located south of the proposed impact area of this study and is therefore not relevant. Sites documented by the study of 2007 which are located nearby the proposed construction and dismantling areas of the powerline were visited and mentioned in this report. Most of these have been impacted upon since 2007 as evidenced by the demolition of a number of previous villages mentioned in the heritage report by the above-mentioned authors, entitled *"Archaeological and Heritage Impact Assessment Report: Proposed new Goedgevonden Colliery Expansion Project on the farms Goedgevonden 10 IS, Zaaiwater 11 IS and Kleinzuikerboschplaat 5 IS near Ogies, Emalahleni Local Municipality, Mpumalanga"*

Two studies conducted by J.A. van Schalkwyk in 2002 and 2003 respectively, contains information about the location of some graveyards and farmsteads. This information was valuable in locating the the gravesite on the farm Kleinzuikerboschplaat 5 IS (**site OG 10**). The 2002 study is entitled "A survey of cultural resources in the proposed Klipspruit Mining area, Witbank District, Mpumalanga". The remaining sites in his report are located south west of the proposed 88 kV powerline development area.

His 2003 study, "A survey of cultural resources in the Khutala Colliery Block a mining area, Witbank District, Mpumalanga Province" lists sites including graveyards and farmsteads among which are

demolished structures. Two sites correspond with the sites located during this survey being sites **OG 11** and **OG 12.**

McEdward Muribika conducted a study in 2006 entitled “Phase 1 Cultural and Archaeological Heritage Assessment Specialist Study for the proposed three borrow pits sites associated with the Rehabilitation and Upgrading of surfaced Road P52/3 between Kriel and Ogies in Emalahleni Local Municipality, Mpumalanga Province”.

He did not document any heritage resources during this survey.

3.1.2. Historical maps

Historical maps obtained during the archival study were scrutinized and features that were regarded as important in terms of heritage value were identified and if they were located within the boundaries of the project area they were physically visited in an effort to determine whether they:

(i) still exist
(ii) assess their current condition, and
(iii) significance

3.2. Heritage site significance

The South African Heritage Resources Agency (SAHRA) formulated guidelines for the conservation of all cultural resources and therefore also divided such sites into three main categories. These categories might be seen as guidelines that suggest the extent of protection a given site might receive. They include sites or features of local (Grade 3) provincial (Grade 2) national (Grade 1) significance, grades of local significance and generally protected sites with a number of degrees of significance.

For practical purposes the surveyor uses his own classification for sites or features and divides them into three groups, those of low or no significance, those of medium significance, those of high significance **(*Also see table 5.2.Significance rating guidelines for sites*).**

Values used to assign significance and impact characteristics to a site include:

- **Types of significance**

The site’s scientific, aesthetic and historic significance or a combination of these is established.

- **Degrees of significance**

The archaeological or historic site's rarity and representative value is considered. The condition of the site is also an important consideration.

- **Spheres of significance**

Sites are categorized as being significant in the international, national, provincial, regional or local context. Significance of a site for a specific community is also taken into consideration.

It should be noted that to arrive at the specific allocation of significance of a site or feature, the specialist considers the following:

- Historic context
- Archaeological context or scientific value
- Social value
- Aesthetic value
- Research value

More specific criteria used by the specialist in order to allocate value or significance to a site include:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)
- The preservation condition of the site
- Quality of the archaeological or historic material of the site
- Quantity of sites and site features

In short, archaeological and historic sites containing data which may significantly enhance the knowledge that archaeologists currently have about our cultural heritage should be considered highly valuable. In all instances these sites should be preserved and not damaged during construction activities. When development activities do however jeopardize the future of such a site, a second and third phase in the Cultural Resource Management (CRM) process is normally advised which entails the excavation or rescue excavation of cultural material along with a management plan to be drafted for the preservation of the site or sites.

Graves are considered very sensitive sites and should never under any circumstances be jeopardized by development activities. Graves and burial grounds are incorporated in the National Heritage Resources Act under section 36 and in all instances where graves are found by the surveyor, the recommendation would be to steer clear of these areas. If this is not possible or if

construction activities have for some reason damaged graves, specialized consultants are normally contacted to aid in the process of exhumation and re-interment of the human remains.

In section 5 of this document, ***Site descriptions, locations and impact significance assessment***, all the documented sites and features are described, assessed and possible impacts identified, valued and recommendations made. This includes the nature, extent, duration, intensity, probability, cumulative effects and the significance of the impacts of the proposed action.

4. History and Archaeology

4.1. Historic period

4.1.1. Early History

In Southern Africa the domestication of the environment began only a couple of thousands of years ago, when agriculture and herding were introduced. At some time during the last half of the first millennium BC, people living in the region where Botswana, Zambia and Angola are today, started moving southward, until they reached the Highveld and the Cape in the area of modern South Africa. As time passed and the sub-continent became fully settled, these agro-pastoralists, who spoke Bantu languages, started dominating all those areas which were ecologically suitable for their way of life. This included roughly the eastern half of modern South Africa, the eastern fringe of Botswana and the north of Namibia. Historians agree that the earliest Africans to inhabit in the Lowveld in Mpumalanga were of Sotho, or more particularly Koni-origin.

When writing about Mpumalanga Province, it is perhaps best to briefly glance back to prehistoric times, when coals formed in vast swamps from rotting forests between 200 and 300 million years ago. Massive seams of vast coal fields have been discovered and extracted in the southern areas in the province. The areas surrounding the towns of Witbank, Middelburg, Bethal, Hendrina, Ermelo and Carolina had long provided South Africa with an abundant source of cheap energy. This discovery has also had unfortunate effects on these areas, since the toxic by-products of burning coal in such quantities had severely polluted the soil and atmosphere in this area. (*Mpumalanga* 2007: 36-37)

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional histories. According to this source no signs of major Stone Age or Iron Age terrains are present in the vicinity of the Ogies area. The Ogies area was vacant of any settlement until the advent of the nineteenth century, when the Phuthing Tribe was prominent in the area to the north thereof (Bergh, 1999: 4-5, 7, 10).

In a few decades, the course of history in the old Transvaal province would change forever. The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. It came about in

response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes.

Mzilikazi and his raiders had moved from the Northern Nguni area to the area north of the Vaal River by 1821. It has been recorded that the Ndebeles first attacked the Phuthing tribe, which in turn migrated to the south of the Vaal River and joined groups of Southern Sotho speakers. The Phuthing and Southern Sotho tribes moved westward and northward and started raiding Tswana communities in the surrounding area. The Phuthing were commanded first by Chief Tshane, and later Ratsebe. As the Phuthing under Ratsebe moved eastwards along the Vaal River, they collided with Mzilikazi's Ndebele once more. The Phuthing and other raiding groups were finally taken captive in 1823 by Mzilikazi's men (Bergh, 1999: 14; 109-119).

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa – some as early as in the 1720's. One such an adventurer was Robert Scoon, who formed part of a group of Scottish travellers and traders who had travelled the northern provinces of South Africa in the late 1820s and early 1830s. Scoon had gone on two long expeditions in the late 1820s and once again ventured eastward and northward of Pretoria in 1836. During the latter journey, he passed by the area where Ogies is located today (Bergh, 1999: 13, 116-121).

By the late 1820's, a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. As can be expected, the movement of whites into the Northern provinces would have a significant impact on the black farmer - herders who populated the land.

By 1860, the population of whites in the central Transvaal was already very dense and the administrative machinery of their leaders was firmly in place. Many of the policies that would later be entrenched as legislation during the period of apartheid had already been developed (Ross 2002: 39; Bergh, 1999: 170).

Much can be said about the systematic oppression of black people in South Africa. In 1904 about half of the black population in the Transvaal was living on private land, owned by whites or companies. According to the Squatters' Law of 1895, no more than five families of "natives" could live on any farm or divided portion of a farm, without special permission of the Government in the Transvaal (Massie 1905: 97)

Black and white relations were however at times also interdependent in nature. After the Great Trek, when white farmers had settled at various areas in the northern provinces, wealthier individuals were

often willing to lodge needy white families on their property in exchange for odd jobs and commando service. These “bywoners” often arrived with a family and a few cows. He would till the soil and pay a minimal rent to the farmer from the crops he grew. The farmer did not consider him a laborer, but mostly kept black workers for hard labour on the farm.

After the Anglo-Boer War, many families were left destitute. Post war years of severe droughts and locust plagues did not ameliorate this state of affairs. All of these factors resulted in what became known as the ‘poor white problem’. On the advent of commercial farming in South Africa, white landowners soon found bywoners to be a financial burden, and many were evicted from farms. In many cases, wealthier landlords found it far more profitable to rent their land to blacks than to bywoners. This enabled them to create reservoirs of black labour (for which mine recruiting agencies were prepared to pay handsome commissions), while it was also possible to draw more rent from their black tenants. This was outlawed by the 1913 Natives Land Act, which forbade more than five black families from living on white farms as peasant squatters (Readers Digest 1992: 329-332).

4.1.2. History of the Anglo Boer War (1899-1902) in the area

The discovery of diamonds and gold in the Northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intensions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa’s history.

Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicized, and as a consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims (Du Preez, 1977).

During the British march into the Transvaal between February and September 1900, several troops passed by the area where Ogies is situated today. The battalions of Lieutenant Generals J. French, R. Pole-Carew and F. Roberts all travelled close by the Witbank area and through Middelburg. A railway line ran along this route at the time (Bergh, 1999: 51).

At the time of the War, two railway stations were located in the vicinity of the Witbank/Ogies area, and close to each a black concentration camp had been established. At Middelburg, about 20

kilometres to the east of Witbank, one white and one black concentration camp was also set up. No skirmishes took place in the direct vicinity of the Ogies area (Bergh, 1999: 54).

4.1.3. Historic maps of the study area

Since the mid 1800's up until the present, South Africa had been subdivided into various districts. Since 1945, the area where Ogies is located formed part of the Lydenburg district. As of 1872, the farm area was located within the Middelburg district. The Witbank district was however proclaimed in 1925, and the farms were located in this area. As of 1977 the properties fell under the jurisdiction of the Witbank Magisterial Area. This was still the case by 1994 (Bergh,1999: 17, 20-27).

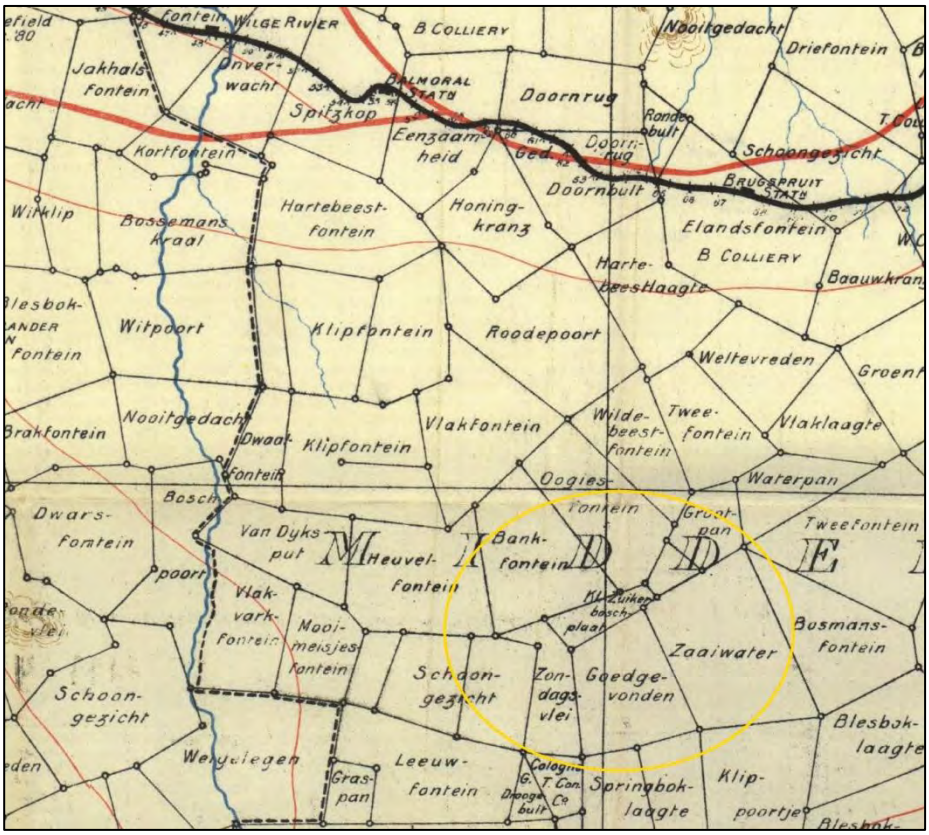


Fig. 4.1. Map of the Heidelberg District in 1900, The Imperial Map of South Africa. Encircled in yellow is the farms where the town Ogies is located today.

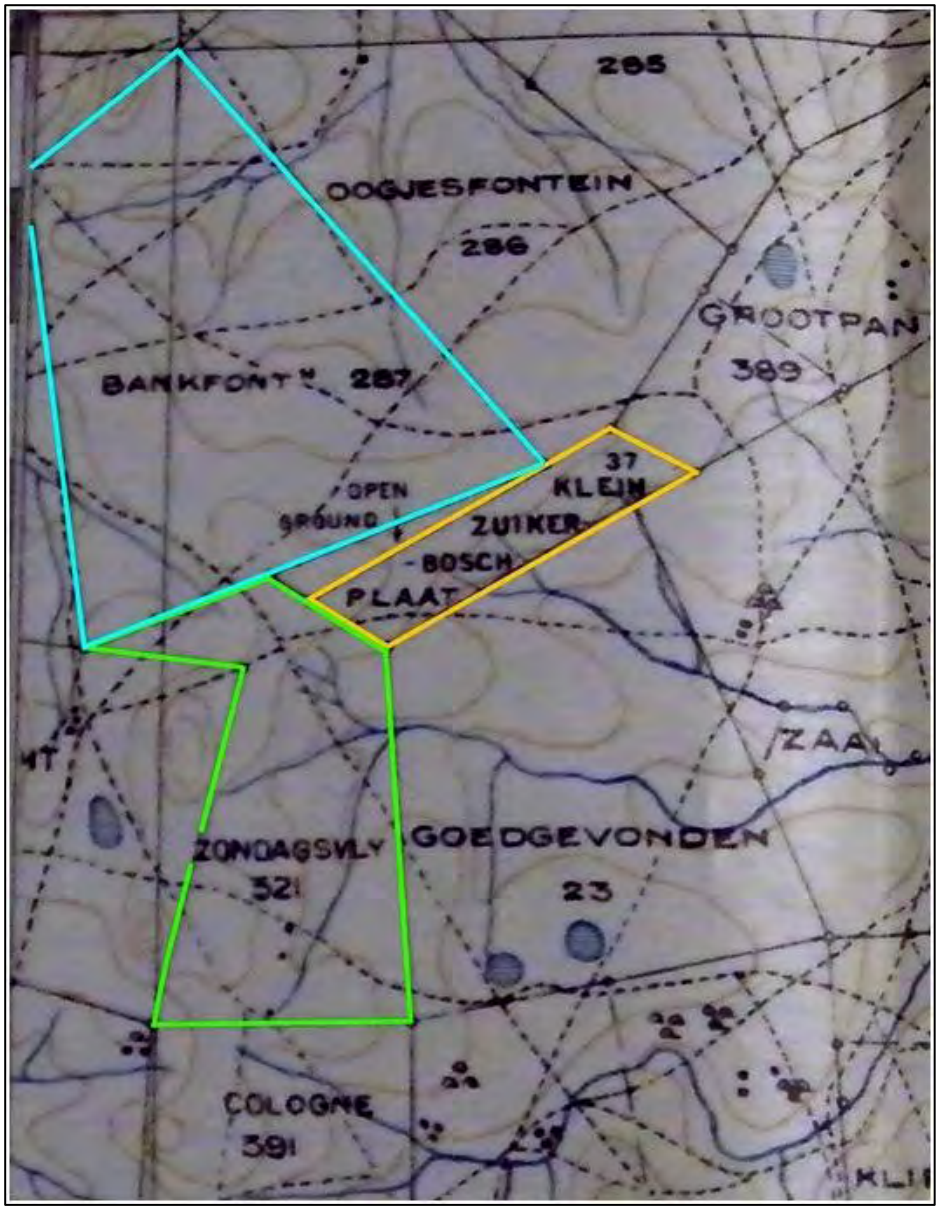


Fig. 4.2. Map of the Bethal district in 1905. The farms under investigation were known as Bankfontein 287, Kleinzuikerboschplaat 37 and Zondagsvly 321 at the time. (Major Jackson Series 1905)

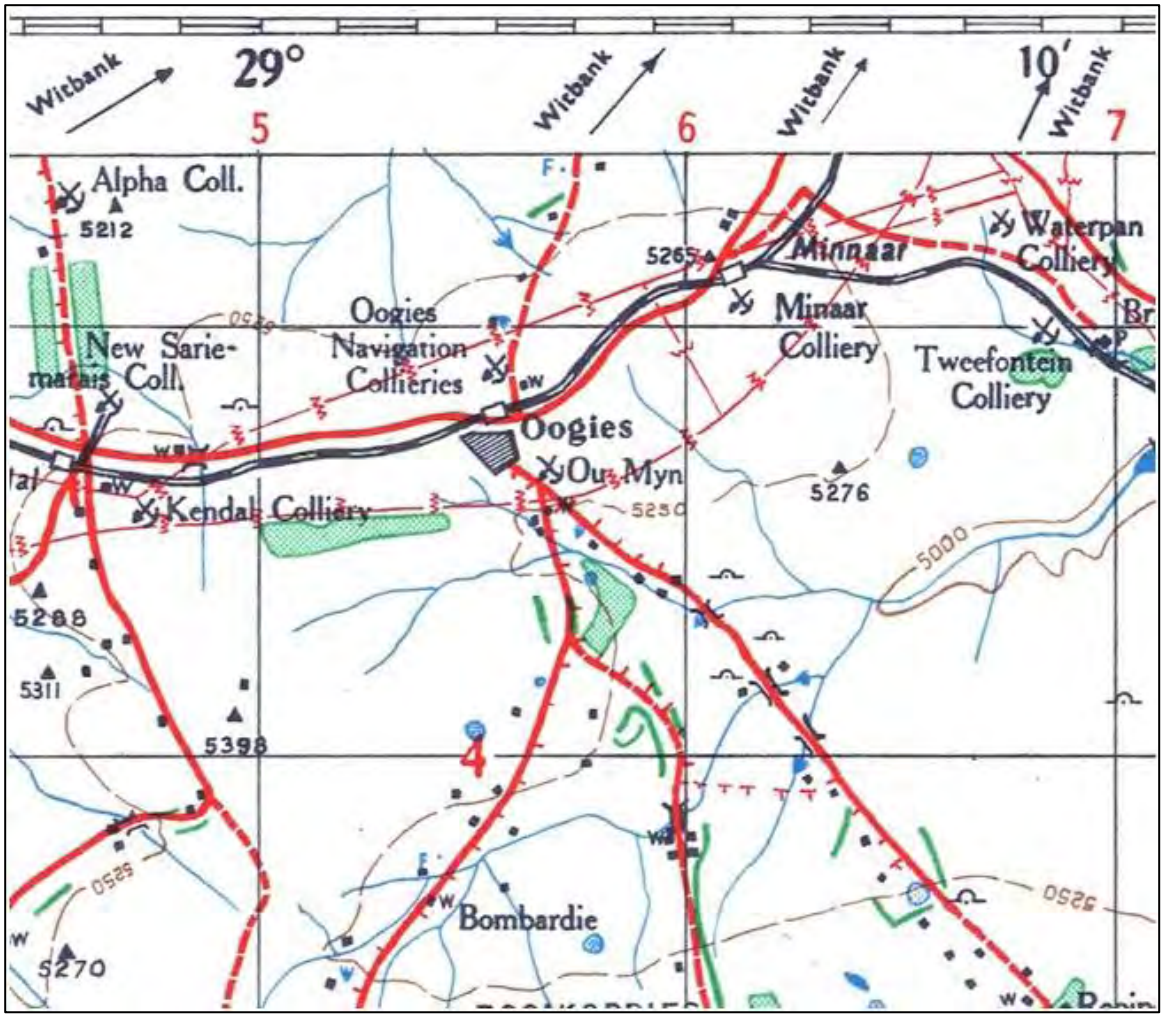


Fig. 4.3. Map of the Ogies area. One can see an old mine site to the southeast of the town, as well as a mine and a shop to the east and northeast of Ogies (Topographical Map 1942).

Fig. 4.4. Topographical Map of the farms around Ogies in 1965.

As evidence by Fig 4.4, there were quite a large number of black settlements in the northern part of *Klipfontein 3 IS* at the time (1965). A number of black settlements are also visible in the south western corner of the farm. One can see a road traversing the north eastern part of the property, and a main road intersected the southern part of the property. A power line crossed the centre of the property. Large parts of Klipfontein comprised of cultivated lands, but it seems that the outskirts of the town of Ogies had spread to the most south eastern corner of the farm, south of the main road. A small distance to the northwest of this development, one can see another cluster of buildings, including a shop and two black settlements, just north of the main road.

The farm *Kleinzuikerboschplaat* also mostly comprised of cultivated land, but one can see a number of black settlements along a road that intersects the property from west to east. A power line ran along the south eastern boundary of the property. A main road intersected the eastern part of the farm from north to south, and some buildings, as well as a shop and a mine dump or excavation site is visible to the east of the road.

By 1965 *Zondagsvlei* was also mostly used for cultivation, but black settlements are scattered across the length of the property. A power line intersected the northernmost part of the farm, near a body of perennial water. A road ran through the length of the property, about two thirds to the east. A grave site can be seen in the southern part of the farm.

4.1.4. Historical overview of the Ogies area and the farms in close proximity

Ogies is a small town situated 27 km south of Witbank in the Mpumalanga province. It is surrounded by coal-mines. The name is derived from the farm Oogiesfontein (fountain with many “eyes”) on which the railway station was built. The name of the town was originally misspelt as Oogies, but corrected by the Place Names Commission in 1939. Ogies is on the link railway from Springs to Witbank and is the junction for the Broodsnyersplaas, where a large power station was erected (Kokot 1975: 294).

Fig. 4.5. A map dated 1951, providing information regarding the landowners on Klipfontein 17, as well as some rare information on Kleinzuikerboschplaat 37 and Zondagsvlei 83.

Kleinzuikerboschplaat 5 IS

Portion 1 of the property belonged to Oogies Pty. Ltd. since 1948 and the Remainder of the farm belonged to Tweefontein United Collieries Ltd since 1917.

Between 1909 and the 1950s this property was still known as Kleinzuikerboschplaat 37. More recently, it has become known as Kleinzuikerboschplaat 5 IS. No documents could be found in the National Archives regarding this property.

Zondagsvlei 9 IS

Only the Upper part of the property is visible (fig. 4.5.) but one can see that the RE of the farm was owned by Weeber Hendrick Truter since 1929, and that the Kendall Colliery Co. Pty. had a right in the land since 1945. The RE of Portion 3 of Zondagsvlei was owned by Maria Elizabeth Truter (born Lombard) since 1943 (NASA *SAB, LDE: 1461 28833*).

Between 1909 and 1917 this property was still known as Zondagsvly 321, but would later become known as Zondagsvlei 83 (around the 1950s). More recently, it has become known as Zondagsvlei 9 IS.

Very little archival documents exist regarding the property Zondagsvlei. One file, dating from 1938, was however found. It was found that on 17 October 1938, during the Depression years, L. H. Lombard, the father of the owner of a section of "Sondagsvlei", Oogies (as Ogies was known in the past), applied for a building loan from the Government's Rural Rehabilitation and Housing Scheme. At the time he was working on the farm for his son, and lived there with his four sons, including the farm owner. He owned 23 head of cattle, two horses, a plough, a harrow, a hoe and a planter. The property measured 247 morgen. It is not known whether the loan was granted or not (NASA *SAB, VWR: 146 B645/212/52*).

Klipfontein 3 IS

Portion D of Klipfontein 17 belonged to Petrus Christiaan van Wijk since 1922, and Portion E and Portion F of Klipfontein 17 was owned by the Government of the Union of South Africa since 1938, and leased to Simon Hendrik Cloete since 1939. The RE of Klipfontein 17 was owned by Hendrik Cornelis van der Schijff since 1942. The Remaining Extent (RE) of Portion C of the farm was owned by Israel Lazarus since 1925, and one can see that the eastern corner of the property had been subdivided into many small lots.

Between 1909 and 1917 Klipfontein was still known as Bankfontein 287. There is however evidence that the property Klipfontein 17 already existed by 1918. Since the 1960's, this farm has been known as Klipfontein 3 IS.

10 January 1918, Elsie Magdalena Adriana Prinsloo (born Pretorius), the widow of Daniel Salomon Prinsloo and mother of four minor children, by Notorial Deed of Cession, ceded the coal rights on the farm Klipfontein 17 to the Transvaal and Delagoa Bay Investment Co. Ltd. The property measured 1265 morgen 164 square roods (NASA *SAB, LDE: 1461 28833*).

In 1954 one P. I. M. Du Plessis applied to erect a ladies outfitters store and fish fryer 60 Cap feet from road P53/1 on Klipfontein 17. This was approved by the Peri-Urban Areas health board in September 1954, with the following explanatory note:

"My raad is bewus van die ongunstige ontwikkeling wat in daardie gebied plaasvind maar voel tog die verstedeliking daar wel die oprigting van nog 'n besigheid regverdig. Die Raad is van plan om so gou doenlik behoorlike beheer daar toe te pas." (*My council is aware of the negative situation occurring in that area but yet feel that the urbanization there justifies the establishment of another business. The council plan on exercising proper control in the area as soon as possible*). The application was finally approved in March 1955 (NASA *SAB, CDB: 3/908 TAD9/45/11*).

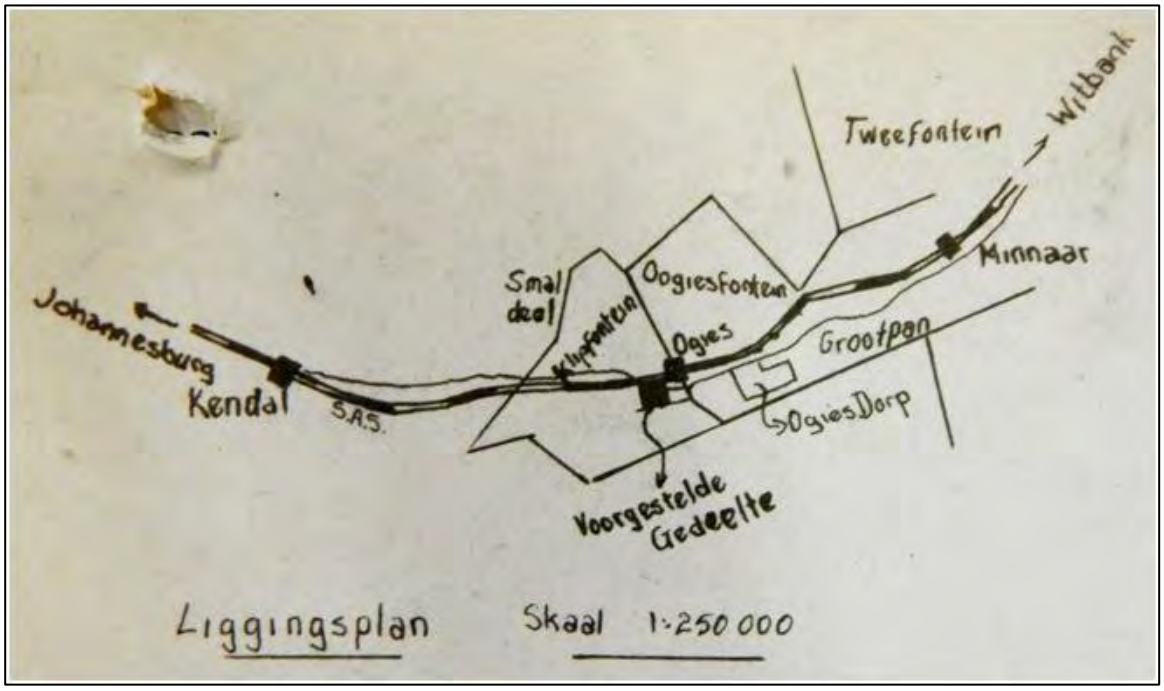


Fig. 4.6. Map (1964) showing the approximate location of Portion C of Klipfontein (NASA *SAB, CDB: 3/908 TAD9/45/11*) .

In 1964 Joseph Marthinus Wessel Farrell, Managing Director of Farrell Properties Pty. Ltd. applied for the subdivision of Portion C of Klipfontein 3 IS. This portion of the property formed part of the Ogies town Planning Scheme No. 1/16, and also of the Restricted Industrial Area. The company planned to develop a municipal brewery on the property, stating that the portion was ideally suited for this purpose, being in the vicinity of a black location (about 3 miles from Ogies). The area used for this purpose would measure about 2 morgen. By Notorial Deed the Transvaal and Delagoa Bay Co. Ltd had rights to coal on the land since 1918. The land to the north and west of the proposed brewery was used for agricultural purposes. Portion B was made up of agricultural holdings, as well as lots on which businesses and residences had been built. East of the proposed area and beyond the main road was a garage Farrell' application was finally approved (NASA *SAB, CDB: 3/908 TAD9/45/11*).

On 15 May 1930 a farmer, Simon Hendrik Cloete (born 1 August 1903) applied to lease a portion of Elandspruit 507 in the Middelburg district. This application was withdrawn at the end of that year. In September 1937 he however again applied for a lease: this time on Portions E and F of Klipfontein 17 in the Witbank district. Together these portions measured 473 morgen 263 square roods. The properties were not located in an irrigation district, dry zone or exempted “native area”. The land was located two miles from the Ogies Station and 20 miles from Witbank. 10 Morgen of the land was under irrigation, 263 morgen of land could be ploughed and 100 morgen was for grazing. Improvements on the properties included two dams, two residences (ten and four rooms respectively), a stable, a wagon house and a kraal, together valued at £640. Perennial dams and a fountain provided water for farming. The land was valued at £2365 (NASA *SAB, LDE: 1460 28833*).

S. M. Cloete owned £200 in cash, 64 oxen, 40 cows and calves, two wagons, three planters, nine hoes, four plows, three harrows, one car, five horses, four draft animals and 124 sheep. Cloete was 34 year of age at the time, married with two children and had 15 years experience in farming (NASA *SAB, LDE: 1460 28833*).

When Cloete applied to purchase the land, Portion F of Klipfontein 17 belonged to W. F. Bezuidenhout. He had owned the farm since 1922. The owner of Portion E was Anna Magdalena Prinsloo (later married to W. F. Bezuidenhout, in community of property) (NASA *SAB, LDE: 1460 28833*).

On 29 August 1930, the widow E. M. A. Prinsloo, granted a Notorial Servitude to the Electricity Supply Commission to use Portion F of Klipfontein 17 to lay electric cables on this property (NASA *SAB, LDE: 1461 28833*).

Though Cloete’s application for a lease was at first denied, he was able to convince the authorities to allow him to farm on the property. By February 1938, when Bezuidenhout was still the landowner, Portions E and F of Klipfontein 17 was described as being suitable for the farming of cattle, sheep , maze, potatoes, oats and other grains. 10 Morgen of black wattle trees had been planted on the property. There were seven huts belonging to black workers on the land, and together these people owned about 50 head of cattle. Mrs. Bezuidenhout was also still living on the land. The property was almost entirely fenced (NASA *SAB, LDE: 1460 28833*).

The valuator valued the land at £2343.0.0. Under the conditions stipulated in the Land Settlement Act No.12 of 1912, the government would purchase the property so that the land could be transferred to Cloete over time, while he remained a lessee on the land. A purchase amount of £2200.0.0 was finally agreed upon in June 1938, and the government acquired the property one month later. In October 1938 the lease with Cloete was officially concluded (NASA *SAB, LDE: 1460 28833*).

It was stipulated in the title deed that the following rights had been registered on the property:

Portion E:

a) The coal rights were ceded to a third party
b) A 155/293 share of the remaining mineral rights was reserved in favour of Elsie Magdalena Adriana Prinsloo, born Pretorius, widow
c) 33/293 share was reserved in favour of Maartens Petrus Albertus Lessing

(NASA *SAB, LDE: 1460 28833*)

Portion F:

a) The coal rights were ceded to a third party.
b) 620/989 share of the remaining mineral rights were reserved to Elsie Magdalena Adriana Prinsloo.

(NASA *SAB, LDE: 1460 28833*)

The remaining share of the mineral rights on both portions was reserved to the Crown and would pass to the grantee on the issue of the Crown Grant. A servitude allowing the Electricity Supply Commission to lay power lines on the land had also been registered on both portions before the farm was purchased (NASA *SAB, LDE: 1460 28833*).

In February 1953 plans were underway for the conveyance of above-ground electric cables and underground cables along the western border of Klipfontein 17. It seems that the matter of black squatting on the land was also resolved by this time, and Cloete was still the lessee on the land by 1960. By March 1961 it was reported that the property was well looked after (NASA *SAB, LDE: 1461 28833*).

By 1964 S. M. Cloete's debt with the Department of Lands was finally settled. In October of the same year Cloete became the owner of Portion E and F of the farm Klipfontein 3 IS (previously Klipfontein 17).

The following servitudes were registered on Portion E:

1. Subject to the session of coal mining rights and additional rights to the Transvaal Delagoa Bay Investment Company Limited under Notorial Deed of Cession No. 38 / 1918S in respect of the farm Klipfontein 3 IS, district Witbank.
2. The reservation of 155 / 293th share of the remaining mineral rights in favour of Elsie Magdalena Adriana Prinsloo, born Pretorius, widow
3. The reservation of 33 / 293ste share in the rest of mineral rights in favour of Peter Maartens Albertus Lessing. (NASA *SAB, LDE: 1461 28 833*)

The property was subject to the reservation of a cemetery in favour of Cormorant's Principal Wynand Frederick Bezuidenhout, measuring 37,863 square foot (Portion 1 of the said Section E).

The Following servitudes were registered on Portion F:

1. Subject to the session of coal mining rights and additional rights to the Transvaal Delagoa Bay Investment Company Limited under Notorial Deed of Cession No. 38 / 1918S in respect of the farm Klipfontein 3 IS, district Witbank.
2. The reservation of 155 / 293th share of the remaining mineral rights in favour of Elsie Magdalena Adriana Prinsloo, born Pretorius, widow
3. By Notorial Deed No. 862 / 61S the right was granted to the Electricity Supply Commission to transport electricity over the property. (NASA *SAB, LDE: 1461 28833*)

By March 1942 a butcher, boarding house, mill and general dealer business were being operated on Portions 12, 13, 14 and 15 of Portion B of Klipfontein 17, respectively. Since these businesses had been in operation long before June 1939, it was recommended by the Provincial Secretary that they could continue operating, as long as no alterations were made to the buildings and to the nature of the business being conducted without the consent of the controlling authority (NASA *SAB, CDB: 3/908 TAD9/45/11*).

Not soon thereafter it was reported that the above mentioned portions had been re-surveyed and that they would henceforth be known as Portions 22, 21, 20 and the Remaining Extent of Portion B of Klipfontein 17, respectively (NASA *SAB, CDB: 3/908 TAD9/45/11*).

Portion 22 of Klipfontein 3 IS was sold to Goodman Orweidan on 19 October 1943, and transferred to Oogies Ko-operatiewe Handelshuis Beperk on 20 November 1947. On 23 June 1965 Ferdinand Paulus van Gass Nel and Jacobus Johannes Opperman, in their capacity as Directors of Oogies Ko-operatiewe Handelshuis Beperk, sold this property to the Kliptrust Eiendoms Beperk company. The land measured 3 morgen 300 square roods (NASA *SAB, CDB: 15492 PB4/19/2/52/3/7*).

By 1981 a general dealer, café and consulting rooms had been established on Portion 22 of Klipfontein. These businesses were apparently the oldest in Ogies, and used to be known as the “Boere Handelshuis”. The consulting rooms had existed since 1965, when Dr. F. X. Roome established himself at Ogies. The property was under the supervision of the Ogies Local Areas Committee. On 18 February 1981 company received permission to operate the above mentioned businesses on Portion 22 of the property (NASA *SAB, CDB: 15492 PB4/19/2/52/3/7*).

In February 1953 the Oogies Mills (Pty.) Ltd. applied to erect an ablution block and cloakrooms 150 feet from the centre of road P52, as well as a grain store (between existing stores) 108 foot 8 inches from the centre of road P52 on Portions 20 and 21 of Klipfontein 17. Alterations and additions applied for included a grain store110 feet 6 inches from the centre of road P52, a grain store 106 feet 2 inches from the centre of road P52 and a mill building 66 feet from the centre of the road. This application was approved (NASA *SAB, CDB: 3/908 TAD9/45/11*).

By February 1982 Portion 21 of Klipfontein was owned by the Ogies Bakery (NASA *SAB, CDB: 15492 PB4/19/2/52/3/7*).

Goodman Orweidan bought Portion 24 of Klipfontein 17 from Elsie Magdalena Adriana Prinsloo (born Pretorius (widow of Daniel Salomon Prinsloo) in October 1942, who on her part had purchased the property in 1919. In 1943 Portion 24 of Klipfontein 17 was transferred from Goodman Orweidan (born 23 May 1901) to David Shill (born 16 December 1905) (NASA *SAB, CDB: 15492 PB4/19/2/52/3/4*).

In May 1947 the Administrator in the Executive Committee granted permission to an applicant, Mr. Shill, to subdivide Portion B of Klipfontein 17 in order to conduct a garage business on Portion 24 of the said land, provided that a certificate was obtained from the Rural Licensing Board or Local Authority. The latter certificate was however not obtained, but Shill went ahead and opened a garage at Ogies. In September 1947 he also applied to conduct a general dealer business, butchery and restaurant on this portion. Permission was granted for this in October 1947 (NASA *SAB, CDB: 3/908 TAD9/45/11*).

By 1950 Mr. Goodman Orweidan was the owner of Portion 23 (a portion of Portion B) of Klipfontein 17, measuring 48 388 square feet. In September of that year he applied to use this land as a business site and to erect a port office and a bank thereon (NASA *SAB, CDB: 3/908 TAD9/45/11*).

The following was reported regarding Portion B of Klipfontein in September 1950:

“It will be observed that on the most southern portion viz. the Remainder of Portion B, the plan shows that there is a shop and store rooms, a well on Portion 20, a boarding house on Portion 21, a butcher shop on Portion 22 and in 1947 permission was granted to the owner of Portion 24 , who purchased the land form the original owner, to conduct a general dealer business, also a butchery and a restaurant thereon provided the owner obtains the necessary certificates from the Rural Licensing Board or local authority...” (NASA *SAB, CDB: 3/908 TAD9/45/11*).

Orweidan’s application was granted in September 1950 by the Provincial Secretary’s office, providing that these would be buildings “of a good class” that would serve the public purpose. This was however done with some hesitation, given the fear that the area was developing into an unauthorised township where a great deal of haphazard and uncontrolled building development had already taken place. (NASA *SAB, CDB: 3/908 TAD9/45/11*).

On 23 November 1950 Portion 23 of Klipfontein 17, measuring 48388 square feet, was transferred from Goodman Orweidan to David Shill (born 16 December 1905) (NASA *SAB, CDB: 15492 PB4/19/2/52/3/4*).

The Post Office at Ogies was constructed in 1966 and first used in 1969. B 1978 it was deemed necessary to extend the building, since the population of the town had grown with time (NASA *SAB, CDB: 15492 PB4/19/2/52/3/4*).

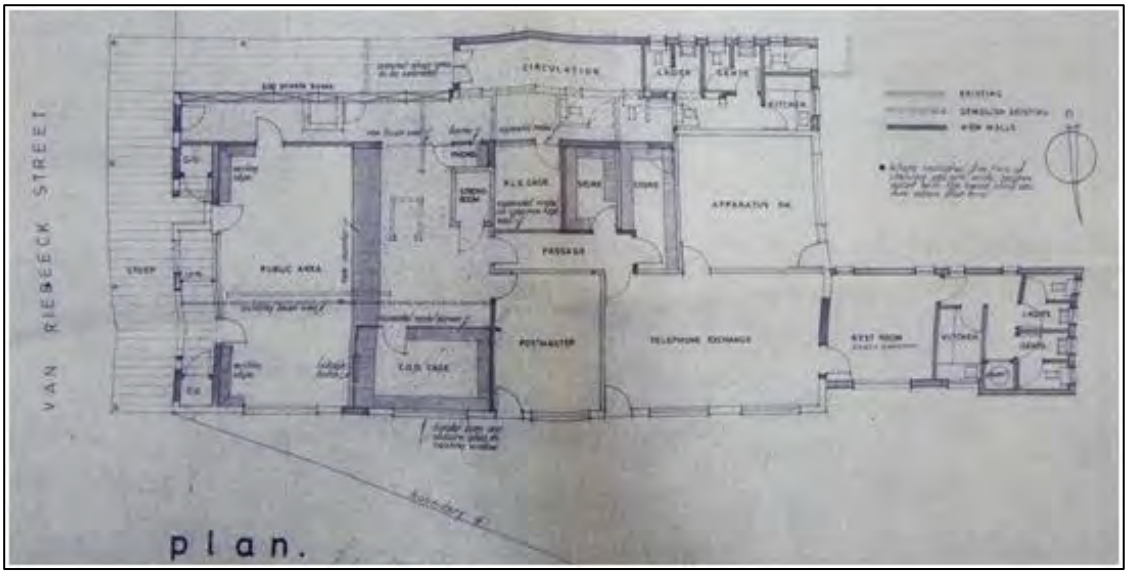


Fig. 4.7. Proposed additions and alterations to the existing Ogies Post Office building on Portion 23 of Klipfontein, dated 1979 (NASA *SAB, CDB: 15492 PB4/19/2/52/3/4*).

By 1979 there existed a post office, butcher, office, barber shop, chemist, warehouse, furnishers, bank, bank residence, pump house and rondavel office for the Ogies Local Area Committee, on Portion 23 and 24 of the Klipfontein 3 IS.

In the same year these businesses was approved by the Development Planning Department. It was however recommended that all the existing iron structures on the premises would be removed and replaced with brick buildings. The extension of the Post Office was also approved (NASA *SAB, CDB: 15492 PB4/19/2/52/3/4*).

By February 1982 the following businesses were present these portions of Klipfontein 3 IS:

Portion 23:

1. Bank

Portion 24:

1. Butcher
2. General Dealer
3. General Dealer (NASA *SAB, CDB: 15492 PB4/19/2/52/3/7*)

D. Shill was still the owner of Portion 23 of Klipfontein by February 1982 (NASA *SAB, CDB: 15492 PB4/19/2/52/3/7*).

By February 1982 the following businesses were present this portion of Klipfontein 3 IS:

1. Vegetable shop
2. Pharmacy
3. Gift Shop
4. Café
5. Garage
6. Hair Salon (NASA *SAB, CDB: 15492 PB4/19/2/52/3/7*)

On 7 January 1971 Portion 26, previously known as Portion 12 of Klipfontein 3 IS was sold by Daniel Salomon van Wyk (born on 2 April 1911) to Oostelike Transvaalse Kooperasie Beperk or O. T. K. B. (Eastern Transvaal Cooperation Ltd.). The portion measured 10.8395 hectares (NASA *SAB, CDB: 15492 PB4/19/2/52/3/6*). By December 1979 a grain silo had been erected on Portion 26 of Klipfontein by the O. T. K. B. The company planned on enlarging this silo, and applied for financing from the Land Bank. Whether the loan was granted or not is unknown (NASA *SAB, CDB: 15492 PB4/19/2/52/3/6*).

In November 1948, Mr. I. E. Mayet, who owned a trading stand on a portion of Klipfontein 17, applied for permission to hire out a room each to one Piet Ndlilov for the purpose of carrying out the business of cobbler and to Jack Mabena, to open a bicycle repair shop. There was a large black population in the Ogies area at the time. The Peri-Urban Areas Health Board had jurisdiction over business properties on Klipfontein 17.

In the end only Mabena stayed on the property, with permission from the Secretary for Native Affairs, on a non-rent paying basis (NASA *SAB, NTS: 1262 1688/162*).

By the 1960s Klipfontein 17 was known as Klipfontein 3 IS. In November 1965 Aboo Baker Gani, an Indian man, applied for a permit that would allow his company, “Gani Janoo & Sons (Ogies) (Pty) Ltd. to lease land from D. S. Van Wyk on Klipfontein 3 IS. The lease agreement would make provision therefore that A. B. Gani, together with his brother Ali Mahomed Gani and their father Gani Janoo Mahomed, who were directors of the company, as well as five Indian shop assistants could occupy a shop, a cafe, seven residences and a garage on the property. The business had been in joint ownership of A. B. Gani and his three brothers, A. M. Gani, M. Gani and O. Gani and their father since 1949. The company also operated two other businesses, one in Arbor and the other in Middelburg. It was noted that the businesses’ collective clientele was 30% white and 70% black. Gani Janoo, the applicant’s father, had operated a business on the property since 1945, and it was known as “Gani Store”. Interestingly, there are still a number of well known Gani businesses operating in the Ogies and Witbank area today (NASA *SAB, GMO: 2/551 12/3; Ganis 2015*).

The landowner, Mr. Van Wyk, still farmed on Klipfontein but was living in Hendrina. A. B. Gani's application was officially approved on 23 November 1965 by the Department of Planning (NASA *SAB, GMO: 2/551 12/3*).

By 1966, two shops, a café, four residences, six store rooms, a cow stable, two garages, a "Bantu Room" and a rondavel were present on Portion 4 of Portion B of Klipfontein 17. Salojee Mahomed Mayet (married, with four young children) applied for a permit to continue trading and occupying the buildings on the property, together with his three shop assistants (all Mayets). The land belonged to one Rinaldo Res. Across the road was the Ogies Hotel. The application was approved on 29 April 1966 (NASA *SAB, GMO: 2/552 12/14*).

By February 1978 there were five residences, a motor tyre business, a furniture store, a general dealer and a store on Portion 12 of Klipfontein 3 IS. These buildings were owned by Mr. D. S. Van Wyk, who leased it to Indians. The general dealer had existed since 1944 and the tyre business since 1948. This terrain was located at the corner of the Witbank-Delmas road (P29-1) and the District Road 1955, about two kilometres southwest of Ogies town. This development was seen as a potential "illegal town" at the time. The matter was however still on hold by 1980, since it was anticipated that this area would form part of a proclaimed "Indian Area" (NASA *SAB, CDB: 7351 PB4/3/2/111/32*).

On 5 June 1981 one Frederick John Farrell (Born 5th June 1923) sold the RE of Portion 2, as well as Portion 3 of Klipfontein 3 IS to Aboo Baker Gani (born on 28th November 1928). In 1987 Gani applied for permission to transfer the garages on Portion 2 and 3 of the property to the ownership of the Gani's Family Trust. This was approved on 4 June 1991 (NASA *SAB, CDB: 1/365 GO15/10/4/2/52/8*).

In November 1983 it became known that areas A, B, C, D, E, F, G, H, J and K OF Portion 41 of the farm Ogiesfontein had been proclaimed as an Indian Group Area. Klipfontein did not form part of this area. By 1984 no resolution had yet been reached with regards to the area being an illegal town or not (NASA *SAB, CDB: 7351 PB4/3/2/111/32*).

In February 1984 Aboo Baker Gani applied to purchase the Remaining Extent of Portion 12 of Klipfontein 3 IS. The conditions of the sale included that if Gani was allowed to buy the property, he would not be able to sell it to any other person. Furthermore, if an "Indian Area" was proclaimed on this property, Gani would have to give it up. If not, only the five families that were living on the land at the time would be allowed to stay there (NASA *SAB, CDB: 1/354 GO15/10/4/2/52/7*)

The land was consequently sold to A. B. Gani by Daniel Salomon van Wyk on 20 August 1984. The RE of Portion 12 of Klipfontein measured 265, 9673 hectares. The sale of the land took place only because special permission was granted (NASA *SAB, CDB: 1/354 GO15/10/4/2/52/7*).

In October 1987 Mrs. Vadma Adam, an Indian woman, applied to operate a restaurant, namely the Jabulani Restaurant, on the RE of Portion 1 of Klipfontein 3 IS. She was married to one Abdul Sattar Carrim Adam, and they had three children. She stated that the reason for her application was that a group area had for Indians had not been established by that time. The registered owner of the land was one Pieter Ignatius Michael Du Plessis. The authorities of the time believed that the restaurant would serve the community well, especially truck drivers that transported coal from the surrounding coal mines. By 1988 Adam's application was approved (NASA *SAB, CDB: 16122 PB13/2/02/3*).

In October 1987 Vadma Adam also applied for permission to operate a General Dealer business on the RE of Portion 1 of Klipfontein. The name of the store was "Ogies Discount Centre". The store would especially sell second hand furniture. This would be the only store of its kind in the area at the time. The application was approved in March 1988 (NASA *SAB, CDB: 16122 PB13/2/02/4*).

In 1987 Ismael Mayet applied to operate a business called the Van Riebeeck Cafe on the RE of Portion 1 of Klipfontein 3 IS. He was married to Amina Mayet at the time. In March 1988 his application was approved (NASA *SAB, CDB: 16122 PB13/2/02/5*). In 1987 Anver Ally Moosa Cassim, whose spouse was Amina Cassim, applied to operate a business called "Blesbokmotors", a motor dealership on the RE of Portion 1 of Klipfontein 3 IS.

The application was approved on 25 March 1988 (NASA *SAB, CDB: 16122 PB13/2/02/6*).

Sikander Alli Gani applied to operate a motor dealership business called Gani's Car Sales on Portions B and 23 of Klipfontein 3 IS in 1987. He was married to Bilkies Gani. The application was approved in March 1988 (NASA *SAB, CDB: 16122 PB13/2/02/7*).

In 1987 Ishmail Gani applied for permission to operate a business called Euraroe Motors Edms. Bpk. On Portion 25 of Klipfontein 3 IS. Christiaan Johannes de Jager was the registered owner of the land. The application was approved in March 1988 (NASA *SAB, CDB: 16122*).

In 1987 Ismail Mayet (born on 23 February 1953) applied for permission to operate a General Dealer business called Casablanca Outfitters on Portion 22 of Klipfontein. The registered owner of the land was Francisco Assis da Mata de Freitas. The application was approved in March 1988 (NASA *SAB, CDB: 16122 PB13/2/02/9*).

In 1988 Ebrahim Gani applied for permission to reside on Portion A of Portion 1 of Portion C of Klipfontein 3 IS. He was married to Zohra Bibi Gani at the time. E. Gani was living in Standerton at the time, and therefore had to commute 20 km to his General Dealership business in Ogies, called Ganis Africa, every day. He therefore applied to live in a double residence on this portion of Klipfontein, which was only 2 kilometres from his business. His neighbours, P. I. M. Du Plessis and F. J. Fannell, had no objections to this, since they "shared many of the same views regarding their common homeland, the RSA". The owner of the property was Pieter Ignatius Michael du Plessis (NASA *SAB, CDB: 16123 PB13/2/02/11*).

In August 1988 E. Gani's application was denied (NASA *SAB, CDB: 16123 PB13/2/02/11*).

In 1988 Imran Saloojee Mayet (born on 26 April 1965 and married to Sherene Mayet) applied for permission to operate a General Dealer business called the Arcade Supply Store on Portion 23 of Portion 3 of Klipfontein 3 IS.B. J. Wagner (Doritsel) was the registered owner of the property. Mayet explained that his building had occupied a building on this property for the past six years, before it burnt down. Furthermore, I. S. Mayet and his grandparents and parents were all born and lived out their lives in Ogies. In October 1988 the application was approved (NASA *SAB, CDB: 16123 PB13/2/02/12*).

4.2. Archaeology

4.2.1. Stone Age

In Mpumalanga Province the Drakensberg separates the interior plateau also known as the Highveld from the low-lying subtropical Lowveld which stretches to the Indian Ocean. A number of rivers amalgamate into two main river systems, the Olifants River and the Komati River. This fertile landscape has provided resources for humans and their predecessors for more than 1,7million years (Esterhuizen & Smith in Delius, 2007).

The initial attraction of abundant foods in the form of animals and plants eventually also led to the discovery of and utilisation of various minerals including ochre, iron and copper. People also obtained foreign resources by means of trade from the coast. From 900AD this included objects which were brought across the ocean from foreign shores.

The Early Stone Age (ESA)

In South Africa the ESA dates from about 2 million to 250 000 thousand years ago in other words from the early to middle Pleistocene. The archaeological record shows that as the early ancestors progressed physically, mentally and socially, bone and stone tools were developed. One of the most influential advances was their control of fire and diversifying their diet by exploitation of the natural environment (Esterhuizen & Smith in Delius, 2007).

The earliest tools date to around 2, 5 million years ago from the site of Gona in Ethiopia. Stone tools from this site shows that early hominids had to cognitive ability to select raw material and shape it for a specific application. Many bones found in association with stone tools like these have cut marks which lead scientists to believe that early hominids purposefully chipped cobblestones to produce flakes with a sharp edge capable of cutting and butchering animal carcasses. This supplementary diet of higher protein quantities ensured that brain development of hominids took place more rapidly.

Mary Leaky discovered tools like these in the Olduwai Gorge in Tanzania during the 1960s. The tools are named after this gorge and is known as the Oldowan industry. These tools, only found in Africa, are mainly simple flakes which were struck from cobbles. This method of manufacture remained for about 1,5 million years. Although there is continuing debate about who made these tools, two hominids may have been responsible. The first of these was an early form of *Homo* and the second was *Parathropus robustus*, which became extinct about 1 million years ago (Esterhuizen & Smith in Delius, 2007).

Some time later, around 1, 7 million years ago more specialised tools known as Acheulean tools, appeared. These are named after tools from a site in France by the name of Saint Acheul, where they were first discovered in the 1800s. It is argued that these tools had their origin in Africa and then spread towards Europe and Asia with the movement of hominids out of Africa. These tools had longer and sharper edges and shapes which suggest that they could be used for a larger range of activities which included the butchering of animals, chopping of wood, digging roots and cracking bone. *Homo ergaster* was probably responsible for the manufacture of Acheulean tools in South Africa. This physical type was arguably physically similar to modern humans, a larger brain and modern face, body height and proportion are all characteristics which are very similar to us. *Homo ergaster* was able to flourish in a variety of habitats in part because they were dependent on tools. They adapted to drier, more open grassland settings. Because these early people were often associated with water sources such as rivers and lakes, sites where they left evidence of their occupation are very rare. Most tools of these people have been washed into caves, eroded out of riverbanks and washed downriver. An example in Mpumalanga is Maleoskop on the farm Rietkloof where ESA tools have been found. This is one of only a handful of such sites in Mpumalanga.

Middle Stone Age (MSA)

A greater variety of tools with diverse sizes and shapes appeared by 250 000 BP. These replaced the large hand axes and cleavers of the ESA. This technological advancement introduces the Middle Stone Age (MSA). This period is characterised by tools which are smaller in size but different in manufacturing technique (Esterhuizen & Smith in Delius, 2007).

In contrast to the ESA technology of removing flakes from a core, MSA tools were flakes to start with. They were of a predetermined size and shape and were made by preparing a core of suitable material and striking off the flake so that it was flaked according to a shape which the toolmaker desired. Elongated, parallel-sided blades, as well as triangular flakes are common finds in these assemblages. Mounting of stone tools onto wood or bone to produce spears, knives and axes became popular during the MSA. These early humans not only settled close to water sources but also occupied caves and shelters. The MSA represents the transition of more archaic physical type (*Homo)* to anatomically modern humans, *Homo sapiens.*

The MSA has not been extensively studied in Mpumalanga but evidence of this period has been excavated at Bushman Rock Shelter, a well-known site on the farm Klipfonteinhoek in the Ohrigstad district. This cave was excavated twice in the 1960s by Louw and later by Eloff. The MSA layers show that the cave was repeatedly visited over a long period. Lower layers have been dated to over 40 000 BP while the top layers date to approximately 27 000 BP (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Later Stone Age (LSA)

Early hunter gatherer societies were responsible for a number of technological innovations and social transformations during this period starting at around 20 000 years BP. Hunting of animals proved more successful with the innovation of the bow and link-shaft arrow. These arrows were made up of a bone tip which was poisoned and loosely linked to the main shaft of the arrow. Upon impact, the tip and shaft separated leaving the poisoned arrow-tip imbedded in the prey animal. Additional innovations include bored stones used as digging stick weights to uproot tubers and roots; small stone tools, mostly less than 25mm long, used for cutting of meat and scraping of hides; polished bone tools such as needles; twine made from plant fibres and leather; tortoiseshell bowls; ostrich eggshell beads; as well as other ornaments and artwork (Esterhuizen & Smith in Delius, 2007).

At Bushman Rock Shelter the MSA is also represented and starts at around 12 000 BP but only lasted for some 3 000 years. The LSA is of importance in geological terms as it marks the transition from the Pleistocene to the Holocene which was accompanied by a gradual shift from cooler to warmer temperatures. This change had its greatest influence on the higher lying areas of South Africa. Both Bushman Rock Shelter and a nearby site, Heuningneskrans, have revealed a greater use in plant foods and fruit during this period (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Faunal evidence suggests that LSA hunter-gatherers trapped and hunted zebra, warthog and bovids of various sizes. They also diversified their protein diet by gathering tortoises and land snails *(Achatina*) in large quantities.

Ostrich eggshell beads were found in most of the levels at these two sites. It appears that there is a gap of approximately 4 000 years in the Mpumalanga LSA record between 9 000 BP and 5 000 BP. This may be a result of generally little Stone Age research being conducted in the province. It is, however, also a period known for rapid warming and major climate fluctuation which may have led people to seek out protected environments in this area. The Mpumalanga Stone Age sequence is visible again during the mid-Holocene at the farm Honingklip near Badplaas in the Carolina district (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

At this location, two LSA sites were located on opposite sides of the Nhlazatshe River, about one kilometre west of its confluence with the Teespruit. These two sites are located on the foothills of the

Drakensberg where the climate is warmer than the Highveld but also cooler than the Lowveld (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

Nearby the sites, dated to between 4 870 BP and 200 BP are four panels which contain rock art. Colouring material is present in all the excavated layers of the site which makes it difficult to determine whether the rock art was painted during the mid- or later Holocene. Stone walls at both sites date from the last 250 years of hunter gatherer occupation and they may have served as protection from predators and intruders (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

4.2.2. Early Iron Age

The period referred to as the Early Iron Age (AD 200-1500 approx.) started when presumably Karanga (north-east African) herder groups moved into the north eastern parts of South Africa. It is believed that these people may have been responsible for making of the famous Lydenburg Heads, ceramic masks dating to approximately 600AD.

Ludwig von Bezing was a boy of more or less 10 years of age when he first saw pieces of the now famous Lydenburg heads in 1957 while playing in the veld on his father's farm near Lydenburg. Five years later von Bezing developed an interest in archaeology and went back to where he first saw the shards. Between 1962 and 1966 he frequently visited the Sterkspruit valley to collect pieces of the seven clay heads. Von Bezing joined the archaeological club of the University of Cape Town when he studied medicine at this institution.

He took his finds to the university at the insistence of the club. He had not only found the heads, but potsherds, iron beads, copper beads, ostrich eggshell beads, pieces of bones and millstones. Archaeologists of the University of Cape Town and WITS Prof. Ray Innskeep and Dr Mike Evers excavated the site where von Bezing found the remains. This site and in particular its unique finds (heads, clay masks) instantly became internationally famous and was henceforth known as the Lydenburg Heads site.

Two of the clay masks are large enough to probably fit over the head of a child, the other five are approximately half that size. The masks have both human and animal features, a characteristic that may explain that they had symbolic use during initiation- and other religious ceremonies. Carbon dating proved that the heads date to approximately 600 AD and was made by Early Iron Age people. These people were Bantu herders and agriculturists and probably populated Southern Africa from areas north-east of the Limpopo river. Similar ceramics were later found in the Gustav Klingbiel Nature Reserve and researchers believe that they are related to the ceramic wares (pottery) of the Lydenburg Heads site in form, function and decorative motive. This sequence of pottery is formally

known as the Klingbiel type pottery. No clay masks were found in similar context to this pottery sequence.

Two larger heads and five smaller ones make up the Lydenburg find. The heads are made of the same clay used in making household pottery. It is also made with the same technique used in the manufacture of household pottery. The smaller heads display the modeling of a curved forehead and the back neck as it curves into the skull. Around the neck of each of the heads, two or three rings are engraved horizontally and are filled in with hatching marks to form a pattern. A ridge of clay over the forehead and above the ears indicates the hairline. On the two larger heads a few rows of small clay balls indicate hair decorations. The mouth consists of lips – the smaller heads also have teeth. The seventh head has the snout of an animal and is the only head that represents an animal.

Some archaeological research was done during the 1970's at sites belonging to the EIA (Early Iron Age), location Plaston, a settlement close to White River (Evers, 1977). This site is located on a spur between the White River and a small tributary. It is situated on holding 119 at Plaston.

The site was discovered during house building operations when a collection of pottery shards was excavated. The finds consisted of pottery shards both on the surface and excavated.

Some of the pottery vessels were decorated with a red ochre wash. Two major decoration motifs occurred on the pots:

- Punctuation, using a single stylus and
- Broadline incision, the more common motif

A number of Early Iron Age pottery collections from Mpumalanga and Limpopo may be compared to the Plaston sample. They include Silver Leaves, Eiland, Matola, Klingbiel and the Lydenburg Heads site. The Plaston sample is distinguished from samples of these sites in terms of rim morphology, the majority of rims from Plaston are rounded and very few beveled. Rims from the other sites show more beveled rims (Evers, 1977:176).

Early Iron Age pottery was also excavated by archaeologist, Prof. Tom Huffman during 1997 on location where the Riverside Government complex is currently situated (Huffman, 1998). This site known as the Riverside site is situated a few kilometers north of Nelspruit next to the confluence of the Nelspruit and Crocodile River. It was discovered during the course of an environmental impact assessment for the new Mpumalanga Government complex/ offices. A bulldozer cutting exposed storage pits, cattle byres, a burial and midden on the crest of a gentle slope. Salvage excavations conducted during December 1997 and March 1998 recovered the burial and contents of several pits.

One of the pits contained among other items, pottery dating to the eleventh century (AD 1070 ± 40 BP) this relates the pottery to the Mzonjani and Broederstroom phases. The early assemblage belongs to the Kwale branch of the Urewe tradition.

During the early 1970's Dr Mike Evers of the University of the Witwatersrand conducted fieldwork and excavations in the Eastern Transvaal. Two areas were studied, the Letaba area south of the Groot Letaba River, west of the Lebombo Mountains, east of the great escarpment and north of the Olifants River. The second area was the Eastern Transvaal escarpment area between Lydenburg and Machadodorp.

These two areas are referred to as the Lowveld and escarpment respectively. The earliest work on Iron Age archaeology was conducted by Trevor and Hall in 1912. This revealed prehistoric copper-, gold- and iron mines. Schwelinus (1937) reported smelting furnaces, a salt factory and terraces near Phalaborwa. In the same year D.S. van der Merwe located ruins, graves, furnaces, terraces and soapstone objects in the Letaba area.

Mason (1964, 1965, 1967, 1968) started the first scientific excavation in the Lowveld which was followed by N.J. van der Merwe and Scully. M. Klapwijk (1973, 1974) also excavated an Early Iron Age (EIA) site at Silverleaves and Evers and van den Berg (1974) excavated at Harmony and Eiland, both EIA sites.

Recent research by the National Cultural History Museum resulted in the excavation of an Early Iron Age site in Sekhukuneland, known as Mototolong (Van Schalkwyk, 2007). The site is characterized by four large cattle kraals containing ceramics which may be attributed to the Mzonjani and Doornkop occupational phases.

4.2.3. Late Iron Age

The later phases of the Iron Age (AD 1600-1800's) is represented by various tribes including Ndebele, Swazi, BaKoni, Pedi marked by extensive stonewalled settlements found throughout the escarpment and particularly around Lydenburg, Badfontein, Sekhukuneland, Roossenekal and Steelpoort. The BaKoni were the architects of the stone-walled enclosures found throughout the escarpment area of Eastern Mpumlanga. These settlement complexes may be divided into three basic features: homesteads, terraces and cattle tracks. Researchers such as Mike Evers (1975) and Collett (1982) identified three basic settlement layouts in this area. Basically these sites can be divided into simple and complex ruins. Simple ruins are normally small in relation to more complex sites and have smaller central cattle byres and fewer huts. Complex ruins consist of a central cattle byre which has two opposing entrances and a number of semi-circular enclosures surrounding it. The perimeter wall of these sites is sometimes poorly visible. Huts are built between the central enclosure and the perimeter wall. These are all connected by track-ways referred to as cattle tracks. These tracks are made by building stone walls which forms a walkway for cattle to the centrally located cattle byres.

5. Site descriptions, locations and impact significance assessment

Fifteen (15) sites were documented. The sites consist of three graveyard sites (OG 4, 10, 12) which are considered to be of high significance but are not located on or near the proposed construction routes for the Powerlines. Two historic houses (OG 7, 13) were located but they also are not situated on or in the immediate vicinity of the routes of the proposed new powerlines. The remainder of the sites are both existing and ruined remains of buildings and farmsteads which are also not located on or near the proposed construction routes for the Powerlines. Photos of the sites are included with each site description below and additional photos included in Appendix D.

A number of observation or orientation survey points were marked for survey purposes, they total 28 in number and are allocated "SO" with a following number as identity. The initials "SO" represent "Survey Orientation". These orientation sites are tabled in Appendix B and their photos in Appendix D.

Tables are allocated for the ***significance rating scales*** in terms of possible impacts of the proposed dismantling and construction of two 88kV powerlines on the located heritage sites (**Tables 5.5 & 5.6).**

Table 5.1. Summary of located sites and their heritage significance

Type of site	**Identified sites**	**Significance**
Graves and graveyards	Three **(OG 4, 10, 12)**	High; Local 3A
Late Iron Age	None	N/A
Early Iron Age	None	N/A
Historical buildings	Two **(OG 7, 13)**	Medium; GPB
Historical features	None	N/A
Stone Age sites	None	N/A

Table 5.2. Significance rating guidelines for sites

Field Rating	Grade	Significance	Recommended Mitigation
National Significance (NS)	Grade 1	High Significance	Conservation, nomination as national site
Provincial Significance (PS)	Grade 2	High Significance	Conservation; Provincial site nomination
Local significance (LS 3A)	Grade 3A	High Significance	Conservation, No mitigation advised
Local Significance (LS 3B)	Grade 3B	High Significance	Mitigation but at least part of site should be retained
Generally Protected A (GPA)	GPA	High/ Medium Significance	Mitigation before destruction
Generally Protected B (GPB)	GPB	Medium Significance	Recording before destruction
Generally Protected C (GPC)	GPC	Low Significance	Destruction

5.2. Description of located sites

5.2.1. Site OG 1.

Location: See Appendix B and D (fig. 1,2).

Description: The ruined remains (concrete, bricks) of a dwelling or dwellings. An associated lower grinder points to the buildings being used as farm workers quarters. It is evident that the buildings were demolished. The site is located within 50-80 metres of the existing powerline and a few hundred metres east of route alternative 3 (See Appendix C).

Impact of the proposed development/ activity:

The proposed dismantling of the existing powerline will probably impact on the site. The planned route alternative 3 will not impact on the site.

Recommendation:

The ruins are not regarded as being of heritage significance therefore no mitigation measures required.

5.2.2. Site OG 2.

Location: See Appendix B and D (fig. 3).

Description: The ruined remains (concrete, bricks) of a dwelling or dwellings probably farm workers housing and associated with site OG 1. Evidently demolished buildings. The site is located within 80-100 metres of the existing powerline and a few hundred metres east of route alternative 3 (See Appendix C).

Impact of the proposed development/ activity:

The proposed dismantling of the existing powerline will probably impact on the site. The planned route alternative 3 will not impact on the site.

Recommendation:

The ruins are not regarded as being of heritage significance therefore no mitigation measures required.

5.2.3. Site OG 3.

Location: See Appendix B.

Description: A dry-packed gabien structure associated with a water canal. Probably used as stormwater diversion and collection.

Impact of the proposed development/ activity:

None, it is not located near the existing or planned route (alternative 3, see Appendix C).

Recommendation:

None.

5.2.4. Site OG 4.

Location: See Appendix B and D (fig. 4-9).

Description: A large historic graveyard. There are more than 200 graves located here, some has headstones with the particulars of the deceased on them and others do not. The graves range from those who are under 60 years old and those who are older than 60 years. Names and surnames on the headstones suggest that this was the community graveyard of local mine and farm workers. *Sites OG 4A and 4B in the List of Site Locations (App B) represent the northern and south-eastern extremities of the graveyard site.*

Impact of the proposed development/ activity:

The graveyard will probably not be directly affected by the construction and dismantling activities associated with the proposed powerline project, secondary impact however, is possible. The new planned route of the powerline (alternative 3, see Appendix C) is located approximately 100 m south of the graveyard and across the road R545 to the west of the graveyard (west of the road).

Recommendation:

To minimise possible impact on the graves it is recommended that the graveyard be fenced and any surviving relatives be allowed access. If this is not possible, heritage legislation guides alternative options. The Human Tissues Act 65 of 1983 applies to graves younger than 60 years. Graves which are older than 60 years are protected under section 36 of the NHRA (25 of 1999) and therefore a permit must be issued by SAHRA before the grave may be relocated or exhumed.

5.2.5. Site OG 5.

Location: See Appendix B.

Description: The foundation remains of a rectangular building.

Impact of the proposed development/ activity:

The ruin is located a few approximately 30 metres from the proposed new powerline route (alternative 1, see Appendix C).

Recommendation:

The ruin is not regarded as being of any heritage significance and no recommendations are necessary.