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APPENDIX 2: Specialist Desktop Palaeontology Assessment

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DESKTOP PALAEONTOLOGICAL SPECIALIST STUDY

In terms of Section 38(8) of the NHRA

Proposed development of a 132kV powerline near Olifantshoek, Northern Cape

Prepared by

Dr K. Chapelle

and

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In Association with

Savannah Environmental Services

February 2020

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THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS

I, Dr Kimberley E. J. Chapelle, as the appointed independent specialist hereby declare that I:

• act/ed as the independent specialist in this application;

• regard the information contained in this report as it relates to my specialist input/study to be true and correct, and

• do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;

• have and will not have no vested interest in the proposed activity proceeding;

• have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;

• am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;

• have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;

• have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;

• have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;

• have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favorable to the applicant or not; and

• am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Signed: 

Name: Dr Kimberley E. J. Chapelle

Date: 11/02/2020

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EXECUTIVE SUMMARY

The Gamagara Local Municipality proposes the construction and operation of a grid connection infrastructure between the existing Elim Substation and the soon-to-be constructed Olifantshoek Substation near the town of Olifantshoek in the Northern Cape Province. The grid infrastructure will be used to strengthen the grid network in the area in order to ensure an adequate supply of electricity for the residents within the Municipality's jurisdictional area.

The proposed powerline is mainly underlain by the Kalahari Group sands and calcretes as well as the Ongeluk Formation volcanic rocks. The powerline does however also traverse small exposures of Voëlwater Formation, Lucknow Formation and Hartley Formation volcanic rocks.

Based on the geology of the proposed development area as well as the current palaeontological record, it is anticipated that the impact of the development will mainly be LOW to MODERATE. However, the north-east section of the power line traversing the Kalahari Group deposits may have HIGH impact due to the close proximity of the Kathu Pan deposits.

Based on the geology and fossil record, a field scoping study is recommended in the Kalahari Group deposits , specifically the surface limestones, before excavation takes place in order to confirm the absence of Kathu Pan-like deposits that may contain Pleistocene fossil faunal assemblages.

For the remainder of the power line, there is very little chance of significant fossil finds being made. Any fossil finds (in stromatolitic Mooidraai and Lucknow formations) are to be reported by the developer. Should important fossil material be found during excavations, the attached Fossil Finds Procedure must be implemented (Appendix 1).

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CONTENTS

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1. INTRODUCTION

1.1 Background Information on Project

The Gamagara Local Municipality proposes the construction and operation of a grid connection infrastructure between the existing Elim Substation and the soon-to-be constructed Olifantshoek Substation near the town of Olifantshoek in the Northern Cape Province. The grid infrastructure will be used to strengthen the grid network in the area in order to ensure an adequate supply of electricity for the residents within the Municipality's jurisdictional area.

The grid connection infrastructure will only include a single circuit power line with capacity of up to 132kV. The power line is being assessed within a 300m wide and 36km long corridor which will allow for the optimisation of the infrastructure to be developed and to avoid identified environmental sensitivities. The height of the power line pylons will be up to 20m. The servitude of the power line will be 31m in width.

The grid connection corridor traverses the following affected properties, namely:

» Remaining Extent of the Farm Fritz 540
» Portion 1 of the Farm Fritz 540
» Portion 2 of the Farm Fritz 540
» Portion 4 of the Farm Fritz 540
» Portion 5 of the Farm Fritz 540
» Portion 10 of the Farm Fritz 540
» Remaining Extent of the Farm Gamagara 541
» Portion 1 of the Farm Gamagara 541
» Portion 7 of the Farm Gamagara 541
» Portion 2 of the Farm Dingle 565
» Remaining Extent of the Farm Dingle 565
» Remaining Extent of the Farm Smythe 566
» Remaining Extent of the Farm Murray 570
» Portion 2 of the Farm Murray 570
» Remaining Extent of the Farm Cox 571
» Portion 1 of the Farm Cox 571
» Portion 3 of the Farm Cox 571
» Portion 4 of the Farm Cox 571
» Remaining Extent of the Farm Hartley 573
» Remaining Extent of the Farm Diegaart's Heuwel 765
» Portion 1 of the Farm Neylan 574

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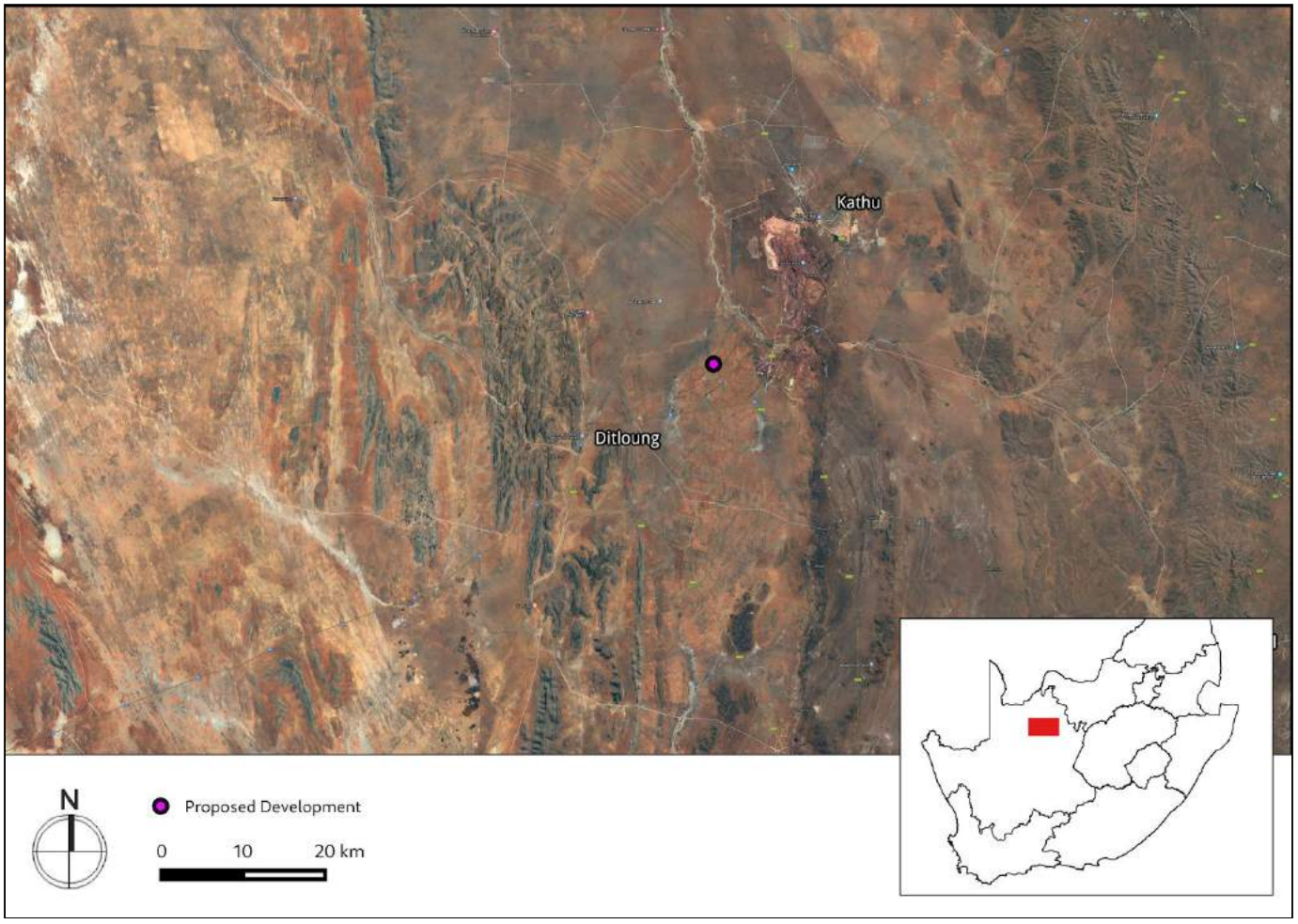

Figure 1: Google Earth© satellite image of the proposed development area

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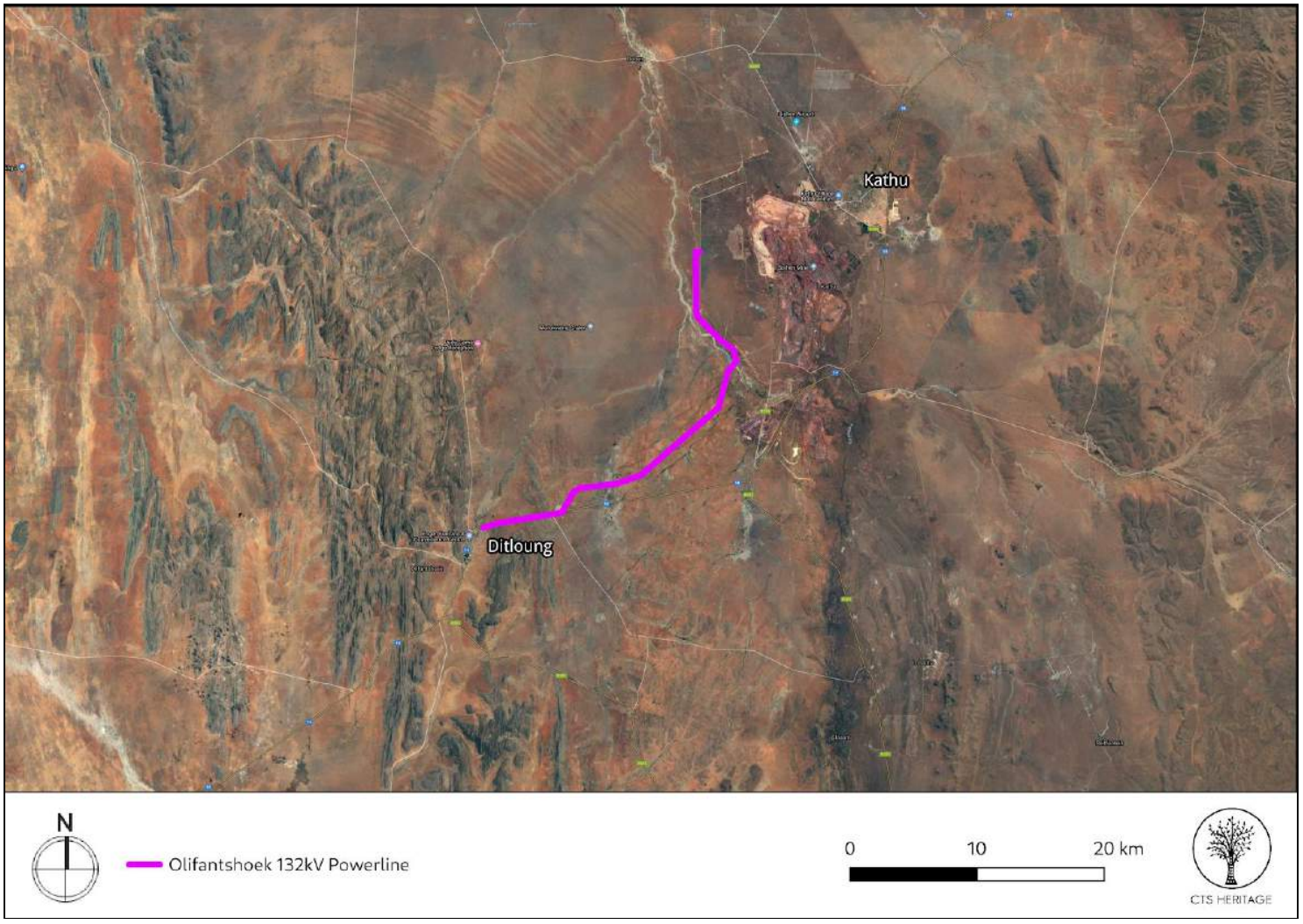

Figure 2: Google Earth© satellite image of the proposed pipelines

2. METHODOLOGY

2.1 Purpose of Palaeontological Study

According to the SAHRA Palaeosensitivity map, the area is underlain by formations of moderate, high and unknown palaeontological significance. However Almond and Pether (2009) describe these specific formations as having a low sensitivity for fossils: both the Hartley and the Lucknow Formations have a low fossil sensitivity, and the sensitivity of the Volwater Formation is unknown. The Gordonia Formation of the Kalahari Group consists of aeolian sands and fossils (bones, teeth, petrified wood, palynomorphs) mainly associated with ancient pans, lakes and river systems, however in a Palaeontological Impact Assessment by Almond (2012, NID 114648), it is stated that "*while a wide spectrum of vertebrate remains, invertebrates, trace fossils, plant fossils and microfossils have been recorded from these Kalahari Group sediments, in general they are of low palaeontological sensitivity and of considerable lateral extent so impacts on fossil heritage here are likely to be of low significance*". However, due to the high palaeontological sensitivity of some of the sediments underlying the proposed development area, a Desktop Palaeontological Assessment has been completed.

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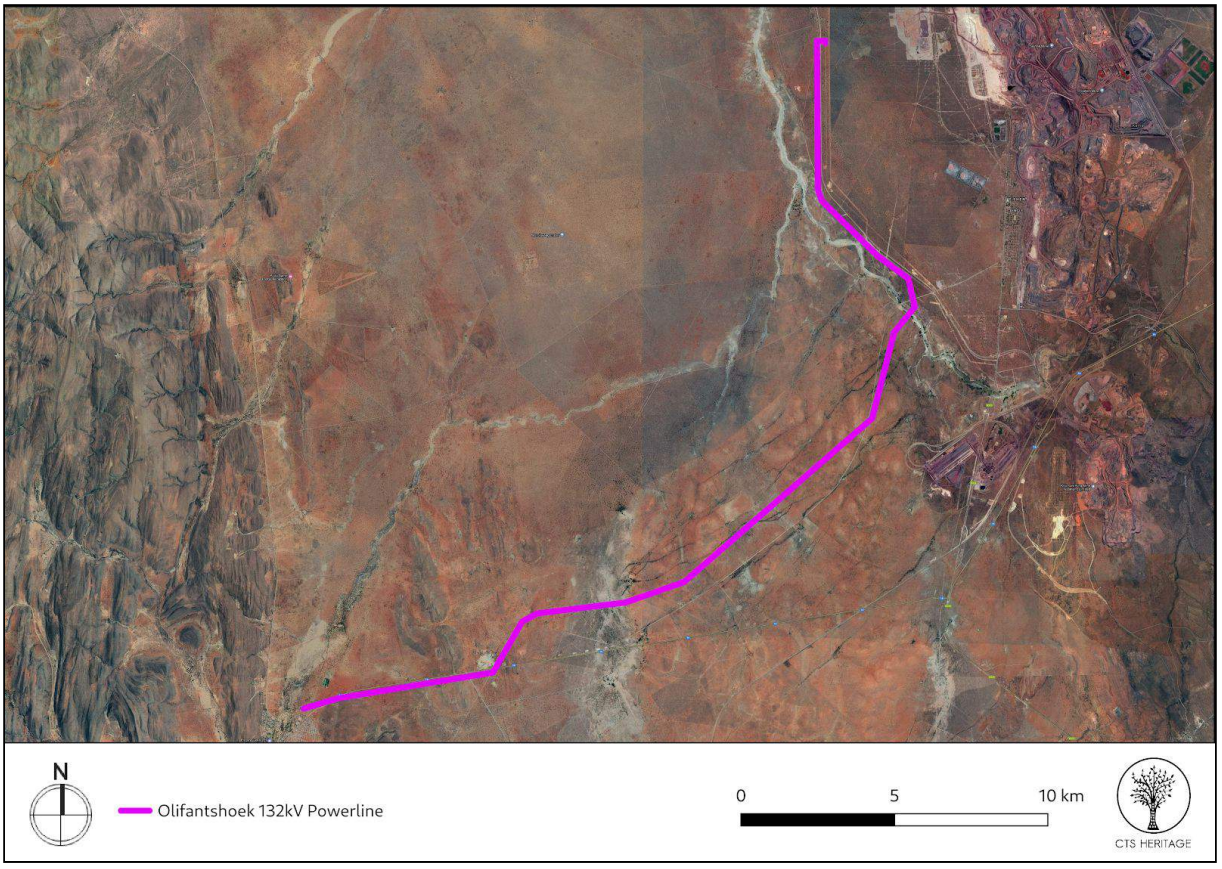

Figure 3: Google Earth© satellite image of the proposed pipelines

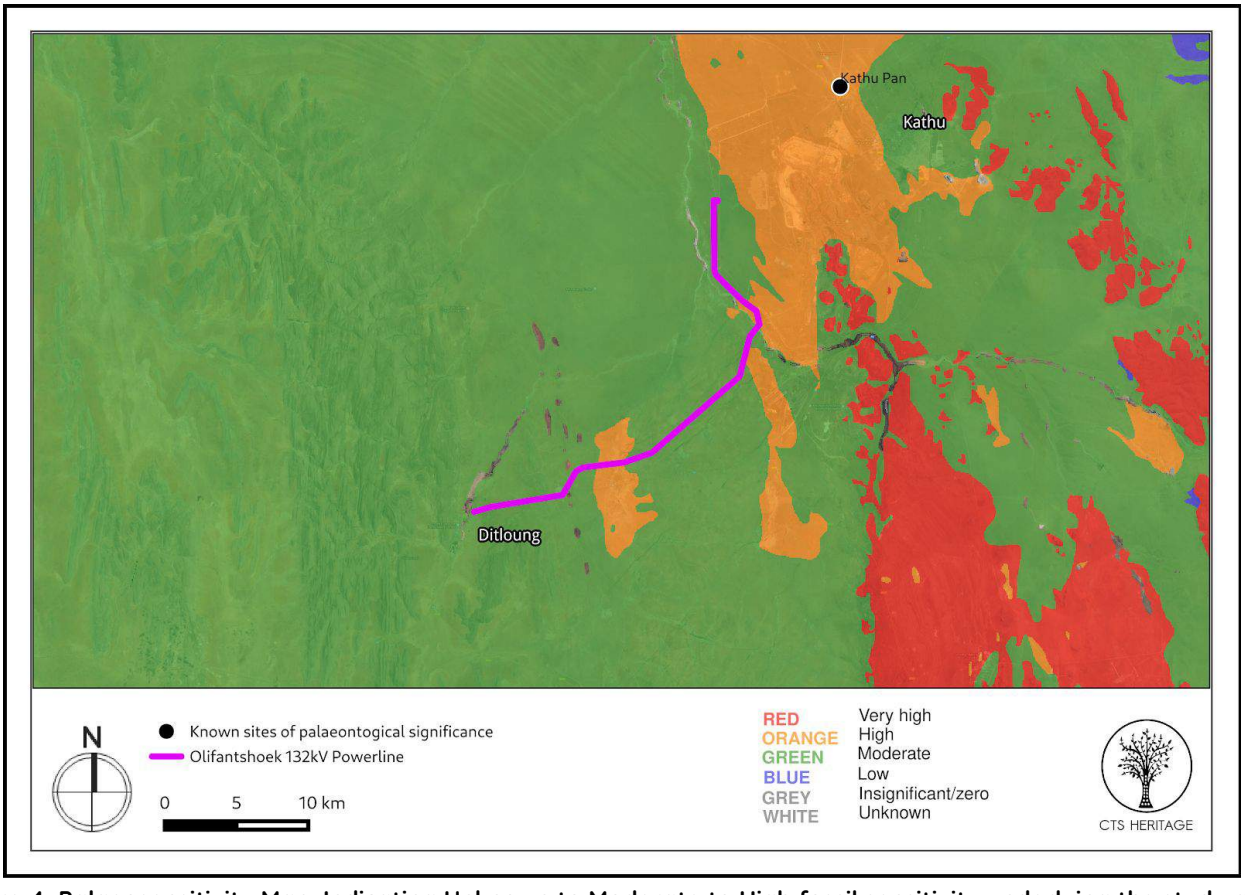

Figure 4: Palaeosensitivity Map. Indicating Unknown to Moderate to High fossil sensitivity underlying the study area.

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2.2 Study approach

This Desktop PIA report provides a record of the observed or inferred palaeontological heritage resources within the broader project study area. The identified resources have been assessed to evaluate their heritage significance in terms of the grading system outlined in Section 3 of the NHRA (Act 25 of 1999). Recommendations for specialist palaeontological mitigation are made where this is considered necessary. The report is based on (1) a review of the relevant scientific literature, including previous palaeontological impact assessments in the broader study region published geological maps, project data, Google Earth satellite imagery and accompanying sheet explanations.

3. GEOLOGICAL CONTEXT OF THE STUDY AREA

The proposed powerline is mainly underlain by the Kalahari Group sands and calcretes as well as the Ongeluk Formation volcanic rocks. The powerline does however also traverse small exposures of Voëlwater Formation, Lucknow Formation and Hartley Formation volcanic rocks.

The oldest of these exposures, the Ongeluk Formation (volcanic rocks comprising amygdaloidal andesitic lava with interbeds of tuff, agglomerate, chert and red jasper; 'Vo' on figure 5.2), is part of the Postmasburg Group, which is in turn part of the larger Transvaal Supergourp (Almond and Pether, 2008; De Kock et al., 2019; Johnson et al., 2006). The Postmasburg Group (Early Proterozoic) is thought to be correlated with the lower Pretoria Group and can reach up to 1.5km in thickness. It comprises four formations, with the Ongeluk being the second oldest (ages of 2.43 Ga and 2.2 Ga have been estimated), overlying the Makganyene Formation and underlying the Hotazel Formation. The Ongeluk Formation (500-600m thick) is composed of extrusive tholeiitic basaltic-andesitic lavas that formed as part of a larger flood-basalt volcanic event (Altermann and Hälbich, 1991; Johnson et al., 2006). The depositional environment is believed to vary from subaqueous (pillow lavas, hyaloclastites and massive flows) to subaerial (pipe amygdales and flow structures) (Johnson et al., 2006).

On the geological map (figure 5), the Voëlwater Formation (Massive and banded jasper; dolomite and chert; lava; 'Vv' on figure 5.2) overlies the Ongeluk Formation. However, based on recent literature, the Voëlwater is a Subgroup that is also part of the Postmasburg Group and comprises the bottom Hotazel Formation and the top Mooidraai Formation (Grobbelaar et al., 1995; Tsikos et al., 2003). The Hotazel Formation is made up of jaspillites and volcanic-exhalative manganese deposits (200-250m thick, exact age speculative, uppermost Paleoproterozoic), whereas the Mooidraai Formation is made up of dolomites (2.4 Ga) (Tsikos et al., 2003).

The Olifantshoek Supergroup overlies the Transvaal Supergroup and can be subdivided into nine formations, the top five of which form the Volop Group. The lower three formations consist of the Mapedi & Gamagara Formation, which is overlaid by the Lucknow Formation, which underlies the Hartley & Boegoeberg Dam Formation (Johnson et al., 2006). The Lucknow Formation (quartzite, subordinate dolomitic limestone and shale; shale, quartzite; volcanic rocks; 'Vl' on figure 5.2) is about 500m thick and was deposited between 2.2 and 2.1 Ga (Schröder et al., 2008). It is made up of shales (deposited in open marine environment), micritic and stromatolitic dolostones (deposited in a shallow protected carbonate lagoon environment), wackes (deposited is possibly tidal sand and mud flats), quartz arenites (deposited in fluvio-marine channels) and dolarenites and dolorudites (deposited in fluvio-marine channels) (Schröder et al., 2008).

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The overlying Hartley Formation (Andesitic lava with interbeds of tuff, agglomerate, quartzite and conglomerate; 'Vh' in figure 5.2) is approximately 300m thick, although volcanic beds are present above and beneath it, possibly bringing the thickness up to 762m (Grobbelaar et al., 1995). It consists mainly of basaltic lava, tuffs with interbedded lenses of quartzite, conglomerate as well as rare quartz porphyry deposited 1.9 Ga (Cornell et al., 2016; Johnson et al., 2006). It is believed to have been formed by explosive volcanism in a subaerial environment.

The Olifantshoek Supergroup is progressively covered by the Kalahari Group as it extends towards Korronaberg. The Quaternary red to flesh-coloured wind-blown sands ('Qs' on figure 5.2) and Tertiary surface limestone ('Tl' on figure 5.2) can therefore broadly be correlated with the Gordonia and Mokalanen formations (respectively) of the Kalahari Group (Pether et al., 2018). The Kalahari Group represents the largest Cenozoic (66 mya to 0 mya) terrestrial sediment deposit in southern Africa. It extends uninterrupted from the Northern Cape to 2 degrees north of the equator, and possibly further south in the semi-arid Karoo. The Kalahari Group can reach up to 210m in thickness. The thickest part of the Kalahari overlies the Dwyka Group rocks that may have played a role in the deposition of Kalahari Group sediments (Johnson et al., 2006; Malherbe, 1984). The Mokalanen Formation underlies the outcrop consisting of boulder gravel derived from Dwyka Tillite that is found underneath the Gordonia Formation. The calcretes forming the Mokalanen Formation were deposited between the Pliocene and early Holocene (5.3 mya-0 mya). These comprise sandy limestones and overlying conglomerates with a calcareous matrix. The Mokalanen Formation was deposited under more arid conditions than the underlying fluvial Eden Formation (Johnson et al., 2006). The Gordonia Formation (informally Kalahari sand) is part of the upper Kalahari Group. The former can reach up to 30m in thickness and comprises red aeolian sands, usually deposited on an underlying calcrete surface but can rest directly on pre Kalahari deposits. The sands, composed of rounded quartz grains, owe their red colour to a thin coating of haematite around the grains. The presence of white sand in river bottoms and bottomland areas is due to the lack of haematite. Linear dunes (formed as early as the Late Pliocene or Early Pleistocene, 2.6 mya) make up a lot of the Gordonia Formation.

The Kathu Pan, situated approximately 11km from the North-East end-point of the proposed power line (see figure 4), is located within a marshland and comprises one of the 11 dolines (sinkholes) present within the Tertiary surface limestone deposit (or Mokalanen calcretes) of the Kalahari Group (Porat et al., 2010). These were infilled over time. These dolines represent Pleistocene and Holocene deposits (Porat et al., 2010).

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Table 1: Geology and fossil heritage of the proposed Olipfantshoek Powerline area, Northern Cape. Palaeontlogical sensitivity (Almond and Pether (2008) indicated by colour: Red - Very High, Orange - High, Green - Moderate, Blue - Low, Grey - Insignificant, Clear - Unknown)

Geological Unit	Age	Lithology	Symbol Fig. 5	Fossil Heritage	Mitigation
Kalahari Group, Wind-blown sand (Gordonia Formation)	2.6 mya to 0 mya	Informally kalahari sand, red (haematite coated) and white (lacking haematite) aeolian sand, usually deposited on underlying calcrete surface but can rest directly on pre kalahari deposits. 30m thick	Qs	Calcretised insect burrows (including termites) and root casts (rhizoliths), ostrich egg shells (Struthio), shells of land snails (e.g. Trigonephrus), bivalves and gastropods (e.g. Corbula, unio) and ostracods (seed shrimps), charophytes (stonewort algae), diatoms, Stromatolites, mammalian ichnofossils	No action required (any fossil finds to be reported by developer)
Kalahari Group, Surface limestone (Mokalanen Formation)	5.3 mya to 0 mya	Sandy limestones and Overlying conglomerates with a calcareous matrix. 30m Possibility of dolines infilled with Pleistocene and Holocene deposits	Tl	Calcretised burrows (including termites), root casts (rhizoliths) as well as Mammalian Ichnofossils. Possible fragmented, mainly dental remains of Pleistocene mammals (including equids, rhinoceros, zebra and bovines).	Field scoping study recommended before excavation takes place
Olifantshoek Supergroup, Hartley Formation	1.9 ga	Basaltic lava, tuffs with Interbedded lenses of Quartzite, conglomerate as well as rare quartz porphyry. 300 to 762m thick	Vh	None	No action required (any fossil finds to be reported by developer)
Olifantshoek Supergroup, Lucknow Formation	Between 2.2 ga and 2.1 ga	Shales (deposited in open marine environment), micritic and stromatolitic Dolostones (deposited in a shallow protected carbonate lagoon environment), wackes (deposited is possibly tidal sand and mud flats), quartz arenites (deposited in fluvio-marine channels) and dolarenites and Dolorudites (deposited in Fluvio-marine channels). 500m thick	Vl	Nodular and laminated domal and columnar stromatolites	No action required (any fossil finds to be reported by developer)
Transvaal Supergourp, Postmasburg Group, Voëlwater Subgroup, Mooidraai Formation	2.4 ga	Dolomites	Vv	Smoothly laminated stromatolites	No action required (any fossil finds to be reported by developer)
Transvaal Supergourp, Postmasburg Group,	Paleo-proterozoic	Jaspillites and volcanic-Exhalative manganese deposits. 200-250m thick	Vv	None	No action required (any fossil finds to be

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Voëlwater Subgroup, Hotazel Formation					reported by developer)
Transvaal Supergourp, Postmasburg Group, Voëlwater Subgroup, Ongeluk Formation	Between 2.2 ga and 2.43 ga	Extrusive tholeiitic basaltic-andesitic lavas that formed as part of a larger flood-basalt volcanic event. Depositional environment is believed to vary from subaqueous (pillow lavas, Hyaloclastites and massive flows) to subaerial (pipe amygdales and flow structures). 500-600m thick	Vo	2.4 billion year old microscopic (2-12µm wide) Fungus-like mycelial fossils	No action required (any fossil finds to be reported by developer)

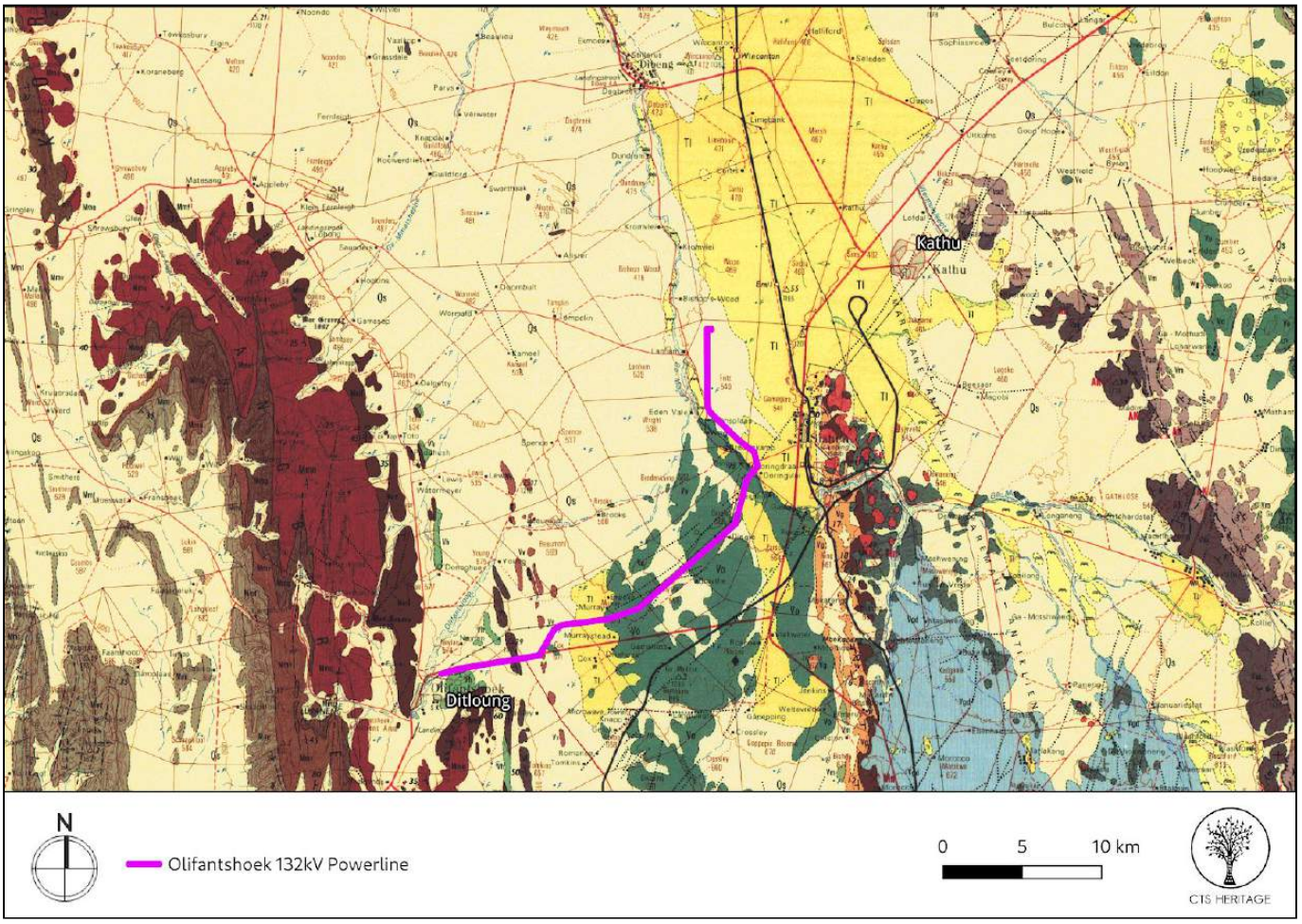

Figure 5.1: Geology Map. Indicating the underlying geology across the study area through overlaying the geology maps from the CGS series 2722 Kuruman (Qs: Quarternary Sands; Tl: Tertiary Surface Limestone; Vh: Hartley Formation volcanic rocks; Vl: Lucknow Formation; Vv: Voelwater Formation; Vo: Ongeluk Formation volcanic rocks)

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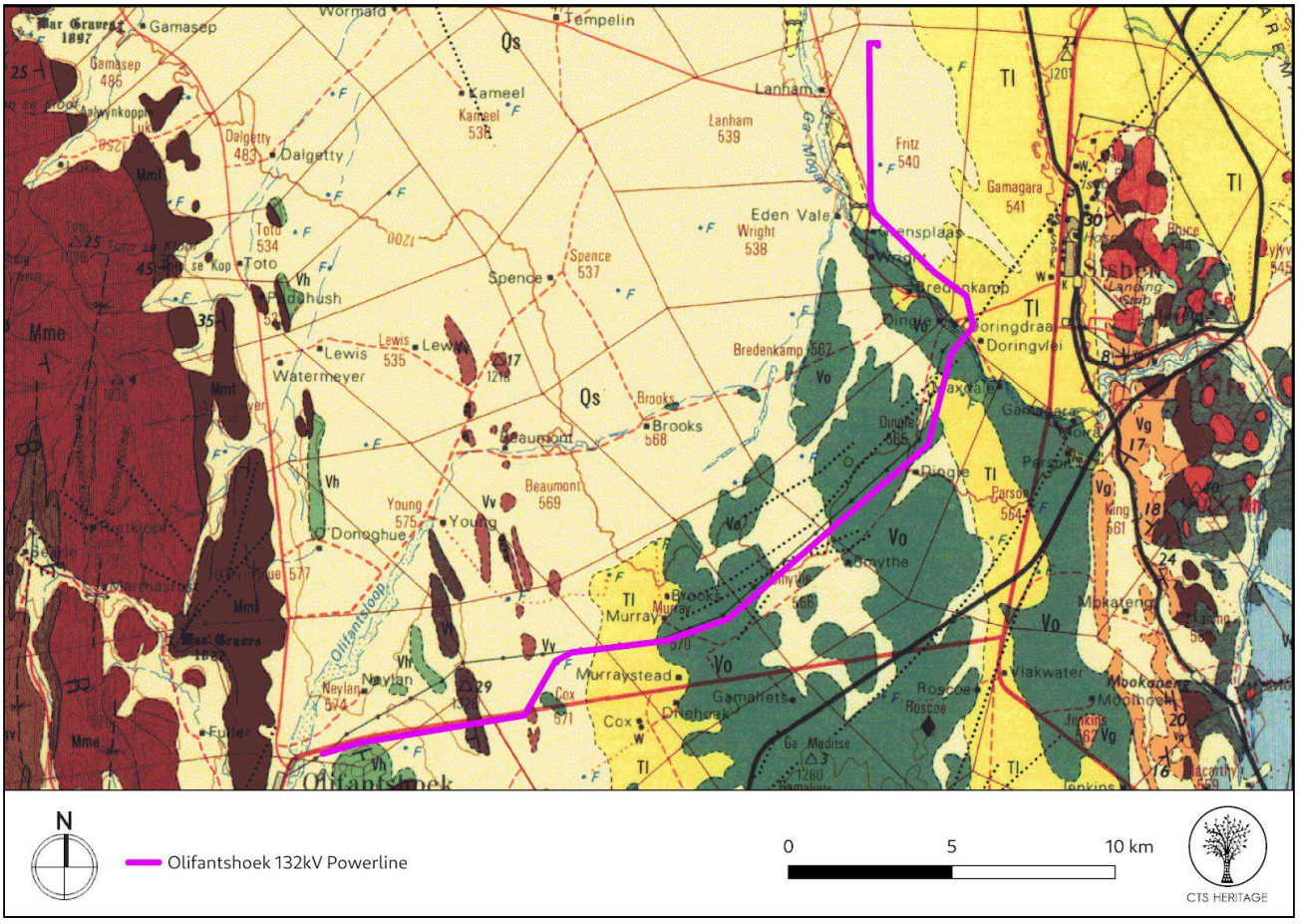

Figure 5.2: Geology Map zoomed in.

4. PALAEONTOLOGICAL HERITAGE RESOURCES

4.1. Review of regional palaeontology

2.4 billion year old microscopic (2-12µm wide) fungus-like mycelial fossils have been recorded from the Ongeluk basalts (between Kathu and Prieska) (Bengtson et al., 2017). The Mooidraai Formation (Voëlwater Subgroup) preserves stromatolites (Johnson et al., 2006). These smoothly laminated stromatolites are found in the upper Mooidraai Formation in contact with intraclast breccias. They can also be found within microbialaminite packages. The smoothly laminated stromatolites do not usually exceed 30cm in thickness but can reach 1m in thickness (Almond and Pether, 2008; Johnson et al., 2006; Kunzmann et al., 2014). The dolostones of the Lucknow Formation are known to yield nodular and laminated domal and columnar stromatolites (from cm to dm wide) (Schröder et al., 2008).

Although present, the fossil record of the Kalahari Group is sporadic and not very diverse. These fossils are usually associated with ancient pans, lakes and rivers (Almond and Pether, 2008). Aeolian dunes are not likely to preserve fossil material, however, calcretisation in low relief areas may preserve burrows (including termites) and root casts (rhizoliths). Fossils that have been recorded include ostrich egg shells (*Struthio*), shells of land snails (e.g. *Trigonephrus*), bivalves and gastropods (e.g. *Corbula*, *Unio*), ostracods (seed shrimps), charophytes (stonewort algae), diatoms (microscopic algae within siliceous shells) and stromatolites (laminated microbial limestones).

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Kathu Pan, situated approximately 11km from the north-east end-point of the proposed power line (see figure 4), is a significant archaeological site that preserves Early and Middle Stone Age Sequences (Wilkins, 2017). Fragmented, mainly dental, faunal remains have been recorded in several strata of the Kathu Pan sequence (Klein, 1988; Wilkins, 2017). These include remains of equids, rhinoceros, zebra and bovines. These fossils may have accumulated by natural death close to a water source that attracted people, as well as through human activity (Klein, 1988; Porat et al., 2010). The Mokolanen clacretes have also yielded calcretised burrows (including termites), root casts (rhizoliths) as well as mammalian ichnofossils (Almond and Pether, 2008; Malherbe, 1984).

4.2. Summary of palaeontological resources identified in this area

- The volcanic nature of the Ongeluk Formation makes it unlikely that it will yield fossils. Although mycelial fungus-like fossils have been recorded, these are microscopic and came from a site over 100km south of the proposed power line.
- The volcanic nature of the Hotazel Formation (Voëlwater Subgroup) makes it unlikely that it will yield fossils.
- The Mooidraai Formation (Voëlwater Subgroup) could preserve stromatolites.
- The dolostones of the Lucknow Formation are known to yield stromatolites (from cm to dm wide).
- The volcanic nature of the Hartley Formation makes it unlikely that it will yield fossils.
- The Kalahari Group has a sparse and poorly diverse fossil record. However, the close proximity of the Kathu Pan deposits (11km) from the north-east terminal point of the proposed power line as well as the fact that the power line traverses the same geological formations as that of the Kathu Pan, make it that there is a possibility of fossil faunal assemblages being present.

5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT

Based on the geology of the proposed development area as well as the current palaeontological record, it is anticipated that the impact of the development will mainly be LOW to MODERATE. However, the north-east section of the power line traversing the Kalahari Group deposits may have HIGH impact due to the close proximity of the Kathu Pan deposits.

6. CONCLUSION AND RECOMMENDATIONS

Based on the geology and fossil record, a field scoping study is recommended in the Kalahari Group deposits, specifically the surface limestones, before excavation takes place in order to confirm the absence of Kathu Pan-like deposits that may contain Pleistocene fossil faunal assemblages.

For the remainder of the power line, there is very little chance of significant fossil finds being made. Any fossil finds (in stromatolitic Mooidraai and Lucknow formations) are to be reported by the developer. Should important fossil material be found during excavations, the attached Fossil Finds Procedure must be implemented (Appendix 1).

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7. REFERENCES

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
114648	PIA	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED 16 MTPA EXPANSION OF TRANSNETâ€™S EXISTING MANGANESE ORE EXPORT RAILWAY LINE & ASSOCIATED INFRASTRUCTURE BETWEEN HOTAZEL AND THE PORT OF NGQURA, NORTHERN & EASTERN CAPE. Part 1: Hotazel
151768	PIA	John E Almond	01/11/2013	Palaeontological specialist assessment: combined desktop and field-based study: PROPOSED 16 MTPA EXPANSION OF TRANSNETâ€™S EXISTING MANGANESE ORE EXPORT RAILWAY LINE & ASSOCIATED INFRASTRUCTURE BETWEEN HOTAZEL AND THE PORT OF NGQURA, NORTHERN & EAS

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CTS Heritage
16 Edison Way, Century City, Cape Town, 7441
Tel: (021) 0130131 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com

Appendix 1: Chance Fossil Finds Procedure

CTS Heritage
16 Edison Way, Century City, Cape Town, 7441
Tel: (021) 0130131 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com

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CHANCE FINDS OF PALAEONTOLOGICAL MATERIAL

(Adopted from the HWC Chance Fossils Finds Procedure: June 2016)

Introduction

This document is aimed to inform workmen and foremen working on a construction and/or mining site. It describes the procedure to follow in instances of accidental discovery of palaeontological material (please see attached poster with descriptions of palaeontological material) during construction/mining activities. This protocol does not apply to resources already identified under an assessment undertaken under s. 38 of the National Heritage Resources Act (no 25 of 1999).

Fossils are rare and irreplaceable. Fossils tell us about the environmental conditions that existed in a specific geographical area millions of years ago. As heritage resources that inform us of the history of a place, fossils are public property that the State is required to manage and conserve on behalf of all the citizens of South Africa. Fossils are therefore protected by the National Heritage Resources Act and are the property of the State. Ideally, a qualified person should be responsible for the recovery of fossils noticed during construction/mining to ensure that all relevant contextual information is recorded.

Heritage Authorities often rely on workmen and foremen to report finds, and thereby contribute to our knowledge of South Africa's past and contribute to its conservation for future generations.

Training

Workmen and foremen need to be trained in the procedure to follow in instances of accidental discovery of fossil material, in a similar way to the Health and Safety protocol. A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place.

Actions to be taken

One person in the staff must be identified and appointed as responsible for the implementation of the attached protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material.

Once a workman notices possible fossil material, he/she should report this to the ECO or site agent.Procedure to follow if it is likely that the material identified is a fossil:

- The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;
- The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates;
- The ECO or site agent must compile a Preliminary Report and fill in the attached Fossil Discoveries: Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including:
    - The date
    - A description of the discovery
    - A description of the fossil and its context (e.g. position and depth of find)
    - Where and how the find has been stored
    - Photographs to accompany the preliminary report (the more the better):
        - A scale must be used
        - Photos of location from several angles
        - Photos of vertical section should be provided
        - Digital images of hole showing vertical section (side);
        - Digital images of fossil or fossils.

Upon receipt of this Preliminary Report, SAHRA will inform the ECO or site agent whether or not a rescue excavation or rescue collection by a palaeontologist is necessary.

- Exposed finds must be stabilised where they are unstable and the site capped, e.g. with a plastic sheet or sand bags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation.
- If the find cannot be stabilised, the fossil may be collect with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove the all fossil material and any breakage of fossil material must be avoided at all costs.

No work may continue in the vicinity of the find until SAHRA has indicated, in writing, that it is appropriate to proceed.

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FOSSIL DISCOVERIES: PRELIMINARY RECORDING FORM		
Name of project:		
Name of fossil location:		
Date of discovery:		
Description of situation in which the fossil was found:		
Description of context in which the fossil was found:		
Description and condition of fossil identified:		
GPS coordinates:	*Lat:*	*Long:*
If no co-ordinates available then please describe the location:		
Time of discovery:		
Depth of find in hole		
Photographs (tick as appropriate and indicate number of the photograph)	*Digital image of vertical section (side)*	
	Fossil from different angles	
	Wider context of the find	
Temporary storage (where it is located and how it is conserved)		
Person identifying the fossil Name:		
Contact:		
Recorder Name:		
Contact:		
Photographer Name:		
Contact:		

CTS Heritage
34 Harries Street, Plumstead, Cape Town, 7800
Tel: +27 (0)87 073 5739 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com