Appendix 3.7
Paleontological Assessment

Palaeontological heritage assessment: combined desktop & field-based study

EXTENSION OF THE ELECTRICAL GRID CORRIDOR FOR THE AUTHORIZED IMPOFU WIND FARMS (EAST, WEST AND NORTH) BETWEEN THE CHATTY AND DEDISA SUBSTATIONS, GQEBERHA (PORT ELIZABETH), NELSON MANDELA BAY MUNICIPALITY, EASTERN CAPE

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EXECUTIVE SUMMARY

Red Cap Impofu (Pty) Ltd proposes to extend their electrical grid connection corridor for the authorized Impofu Wind Farms (East, West and North) situated near Humansdorp in the Eastern Cape Province. The proposed grid extension will run from the approved termination point around the existing Chatty substation located SE of Despatch *via* the existing Grassridge substation and terminate around the DEDISA substation located on the Grassridge Plateau northeast of the Coega Estuary. A new switching station is also proposed just north of the Chatty substation.

The proposed grid extension corridor is underlain by (1) Cretaceous bedrocks of the Uitenhage Group (marine Sundays River and continental Kirkwood Formations), (2) Miocene to Pliocene marine conglomerates and calcareous sandstones of the Alexandria Formation (Algoa Group) as well as (3) a range of Late Caenozoic superficial deposits such as alluvium, surface gravels and soils. Several important marine invertebrate (and very rare vertebrate) fossil sites within the Uitenhage group outcrop area have been previously recorded along the flanks of the Swartkops and Coega River Valleys as well as along the narrow Brak River Valley that incises the Grassridge Plateau near DEDISA Substation. However, with the exception of the Brak River Valley sites reported by McLachlan and McMillan (1976) and one additional fossil site (GS6) near DEDISA Substation to the north of Tossies Quarry N identified by Almond (2010a), none of these sites lies within the grid extension corridor (See map Figure 23 herein). Elsewhere, the Cretaceous bedrocks within the grid extension corridor are very poorly exposed due to superficial sediment cover and dense thicket vegetation as well as often deeply weathered near-surface; significant impacts on scientifically important, unique fossil assemblages are therefore not anticipated here. The Alexandria Formation beds on the Grassridge Plateau near Grassridge and DEDISA Substations are generally calcretised, leached and of low palaeosensivity. Late Caenozoic alluvium and other superficial deposits (calcrete, surface gravels, soils *etc*) mantling most sectors of the grid extension corridor are likewise of low palaeosensitivity and no fossils were recorded within them during the recent one day site visit.

It is concluded that the palaeontological impact significance of the proposed Impofu grid corridor extension is LOW (both with and without mitigation). Likewise, cumulative impacts on palaeontological

heritage in the context of existing powerlines in the region are assessed as LOW. There are no fatal flaws in the development proposal and no objections on palaeontological grounds to authorization of the grid extension. This assessment applies to all components of the electrical infrastructure development, including electricity pylons, access roads and new switching station, while there is also no preference for particular infrastructure design (e.g. pylon type) on palaeontological heritage grounds.

General recommendations regarding the protection and mitigation of (legally protected) Chance Fossil Finds within the development footprint are summarized in the tabulated Chance Fossil Finds Procedure appended to this report (Appendix 2). The ECO / Site Control Officers responsible for the development should be made aware of the potential occurrence of scientifically-important fossil remains within the development footprint. Should substantial fossils be exposed during surface clearance or bedrock excavations, the ECO should safeguard these, preferably *in situ*. They should then alert the Eastern Cape Provincial Heritage Resources Agency, ECPHRA (Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za) as soon as possible. This is to ensure that appropriate action (*i.e.* recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the proponent's expense.

The following specific recommendations are made regarding palaeontological heritage in the vicinity of DEDISA Substation (See satellite map Figure 23):

1. As far as possible, the grid line and associated access road should avoid direct impacts on impacts within the narrow Brak River Valley (*e.g.* by spanning the valley);

2. Fossil site SG6 (33.746 S, 25.670 E) north of Tossies Quarry should be protected by a 10m wide buffer.

These monitoring and mitigation recommendations must be incorporated into the Environmental Management Programme (EMPr) for the development.

Pending the potential discovery of significant new fossil remains before or during construction of the grid line - such as logs of petrified wood, dinosaur or other vertebrate bones and teeth, or well-preserved shells, no other specialist palaeontological studies or mitigation are recommended for this project.

The palaeontologist concerned with any mitigation work will need a valid Fossil Collection Permit from ECPHRA and any material collected would have to be curated in an approved depository (*e.g.* museum or university collection). All palaeontological specialist work would have to conform to international best practice for palaeontological fieldwork and the study (*e.g.* data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013).

1. PROJECT OUTLINE

Red Cap Impofu (Pty) Ltd proposes to extend their electrical grid connection corridor for the authorized Impofu Wind Farms (East, West and North) situated near Humansdorp in the Eastern Cape Province. The proposed grid extension will run from the approved termination point around the existing Chatty substation located SE of Despatch (33°50'11.93"S 25°31'20.86"E) *via* the existing Grassridge substation (33°43'12.04"S 25°37'57.22"E) and terminate around the DEDISA substation located on the Grassridge Plateau northeast of the Coega Estuary (33°44'33.87"S 25°40'34.80"E) (Fig. 1). A new switching station is also proposed just north of the Chatty substation.

The following project description has been provided in the Basic Information Document produced by the CEN Integrated Environmental Management Unit, Port Elizabeth:

> Environmental Authorisations (EAs) have been issued for each of the Impofu Wind Farms (East, West and North) and Grid Connection between the Wind Farms and the Chatty Substation in Gqeberha (Port Elizabeth) (DEFF Reference 14/12/16/3/3/1/2018). The approved corridor for the grid connection extends from the onsite collector switching station at the Impofu West Wind Farm near Oyster Bay to around the Chatty substation in Gqeberha (Port Elizabeth). Red Cap Impofu (Pty) Ltd proposes to extend their electrical grid connection corridor from the approved termination point around the Chatty substation (33°50'11.93"S 25°31'20.86"E), *via* the Grassridge substation (33°43'12.04"S 25°37'57.22"E) and terminating around the DEDISA substation (33°44'33.87"S 25°40'34.80"E). A new switching station is also proposed just north of the Chatty substation.
>
> An existing servitude will be utilised as far as possible for infrastructure between the Chatty and Grassridge substations. However, a corridor will be applied for to allow for the placement of the switching station outside the Chatty substation, and to secure a new servitude between the Grassridge and DEDISA substations. The maximum width of the corridor that will be assessed is ~1.8 km. The powerline will be a 132 kV line, with predominantly steel monopole supporting structures (except for long spans), and a height of 32 m. A 31 m wide servitude is required for the electrical infrastructure in the corridor.
>
> The environmental assessment process and specialist studies will advise on infrastructure alignment within the corridor, placement of structures, structure types (*e.g.* monopoles *versus* lattice-type pylons), and construction methods to avoid and/or reduce impacts on sensitive environments.

The grid connection corridor traverses the outcrop areas of potentially fossiliferous, legally protected sediments of Cretaceous and Late Caenozoic age of the Uitenhage and Algoa Groups, as described in earlier reviews of palaeontological heritage in the Coega Special Economic Zone (SEZ) and adjoining sectors of the coastal platform by Almond (2010a, 2010e) (SEZ Zones 6, 11, 13 and 14 and most relevant to the present study (Figs. 2A & 2B)). A preliminary DEFF Screening Report indicates that the proposed grid extension corridor traverses areas of Medium to Very High palaeosensitivity (Fig. 22). The present combined desktop and field-based palaeontological heritage report has therefore been commissioned on behalf of the proponent, Red Cap (Pty) Ltd, by the independent

Environmental Assessment Practitioner for this development, Dr Belinda Clarke of CEN Integrated Environmental Management Unit, Port Elizabeth (Contact details: Dr Belinda Clark. Address: CEN Integrated Environmental Management Unit, 36 River Road, Walmer, Port Elizabeth, 6070 South Africa. Phone: (041) 581-2983. Fax: 086 504 2549. E-mail: bclark@telkomsa.net / info@environmentcen.co.za).

The present palaeontological heritage report (PIA) will contribute to the Basic Assessment application which will be submitted to the National Department of Forestry, Fisheries and the Environment (DFFE) in terms of EIA Regulations (2014 as amended) under Section 24 of the National Environmental Management Act (No. 107 Of 1998).

2. STUDY APPROACH

The approach to this palaeontological heritage study (PIA) can be briefly summarized as follows. Fossil bearing rock units occurring within the broader study area (including all relevant land parcels) are determined from geological maps and relevant geological sheet explanations as well as satellite images. Known fossil heritage associated with each rock unit is inventoried from published and unpublished scientific literature, previous palaeontological impact assessments (PIAs) of the broader study region, and the author's field experience and palaeontological database (*cf* Almond *et al.* 2008, Almond 2010a, 2010e). Based on this data as well as field examination of representative exposures of all major sedimentary rock units present, both within and in the vicinity of the project footprint, the impact significance of the proposed development is assessed and recommendations for any further studies or mitigation are outlined for inclusion within the Environmental Management Programme (EMPr) for the development. Minimum standards for the palaeontological component of heritage impact assessment reports (PIAs) relevant to this study have been published by SAHRA (2013).

2.1. Sources of data

The present combined desktop and field-based palaeontological heritage assessment for the proposed extension of the Impofu WEF grid extension is based on:

1. A project outline, kmz files and maps provided by CEN Integrated Environmental Management Unit, Port Elizabeth;
2. A desktop review of (a) the relevant 1: 50 000 and 1: 250 000 scale topographic and geological maps, (b) Google Earth© satellite imagery, (c) scientific literature, including published 1: 50 000 and 1: 250 000 geological sheet explanations (Toerien & Hill 1989, Le Roux 2000) as well as (d) several previous fossil heritage assessments in the Coega SEZ region by the author (*e.g.* See References, especially the reviews of Coega palaeontology by Almond 2010a, 2010e);
4. The author's field experience with the formations concerned and their palaeontological heritage;
5. A one-day field assessment of *selected*, potentially-sensitive portions of the grid line extension project area, notably within previously unsurveyed portions across the Swartkops and Coega River Valleys between the Chatty and Grassridge Substations, on 10 June 2021. Only a short drive-through of the corridor sector between Grassridge and DEDISA Substations was undertaken since this area has been previously covered in PIA reports by Almond (2010a, 2010e) and is, for the most part, of little palaeontological interest.

2.2. Assumptions and limitations

The accuracy and reliability of palaeontological specialist studies as components of Heritage Impact Assessments are generally limited by the following constraints:

- Inadequate database for fossil heritage for much of the RSA, given the large size of the country and the small number of professional palaeontologists carrying out fieldwork here. Most development study areas have never been surveyed by a palaeontologist.
- Variable accuracy of geological maps which underpin these desktop studies. For large areas of terrain these maps are largely based on aerial photographs alone, without ground-truthing. The maps generally depict only significant ("mappable") bedrock units as well as major areas of superficial "drift" deposits (alluvium, colluvium) but for most regions give little or no idea of the level of bedrock outcrop, depth of superficial cover (soil etc.), degree of bedrock weathering or levels of small-scale tectonic deformation, such as cleavage. All these factors may have a major influence on the impact significance of a given development on fossil heritage and can only be reliably assessed in the field.
- Inadequate sheet explanations for geological maps, with little or no attention paid to palaeontological issues in many cases, including poor locality information;
- The extensive relevant palaeontological "grey literature" - in the form of unpublished university theses, impact studies and other reports (e.g. of commercial mining companies) - that is not readily available for desktop studies;
- Absence of a comprehensive computerized database of fossil collections in major RSA institutions which can be consulted for impact studies. A Karoo fossil vertebrate database is now accessible for impact study work.

In the case of palaeontological desktop studies without supporting Phase 1 field assessments these limitations may variously lead to either:
(a) underestimation of the palaeontological significance of a given study area due to ignorance of significant recorded or unrecorded fossils preserved there, or
(b) overestimation of the palaeontological sensitivity of a study area, for example when originally rich fossil assemblages inferred from geological maps have in fact been destroyed by tectonism or weathering or are buried beneath a thick mantle of unfossiliferous "drift" (soil, alluvium etc.).

Since most areas of the RSA have not been studied palaeontologically, a palaeontological desktop study usually entails inferring the presence of buried fossil heritage within the study area from relevant fossil data collected from similar or the same rock units elsewhere, sometimes at localities far away. Where substantial exposures of bedrocks or potentially fossiliferous superficial sediments are present in the study area, the reliability of a PIA may be significantly enhanced through field assessment by a professional palaeontologist. In the present case, site visits to the study areas in some cases considerably modified our understanding of the rock units (and hence potential fossil heritage) represented there.

In the case of the present study area close to and within the Coega IDZ near Port Elizabeth, Eastern Cape, exposure of potentially fossiliferous older bedrocks is very limited, due to extensive cover by superficial sediments and dense coastal thicket vegetation. However, sufficient exposures were

examined to allow a realistic assessment of the palaeontological sensitivity of the key rock units (See Section 5), while additional relevant geological and palaeontological data is available from several previous PIAs carried out in the region, notably those review by Almond (2010a, 2010e). Confidence levels for this assessment are accordingly rated as Medium. Comparatively few academic palaeontological studies have been carried out in the region, so any new data from impact studies here are of scientific interest.

3. LEGISLATIVE CONTEXT AND PERMIT REQUIREMENTS

All South African fossil heritage, including palaeontological sites and specimens, is protected by law (South African National Heritage Resources Act, 1999). South African fossils cannot be collected, damaged, destroyed or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency.

Where palaeontological mitigation of a development project in the Eastern Cape is required, the palaeontologist concerned with mitigation work would need a valid fossil collection permit from ECPHRA. Any material collected would have to be curated in an approved depository (*e.g.* museum or university collection). All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (*e.g.* data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for palaeontological studies developed by SAHRA (2013).

The present palaeontological heritage assessment falls under Sections 35 and 38 (Heritage Resources Management) of the South African Heritage Resources Act (Act No. 25 of 1999), and it will also inform the EMPr for this project. The various categories of heritage resources recognised as part of the National Estate in Section 3 of the National Heritage Resources Act include, among others:

- geological sites of scientific or cultural importance;
- palaeontological sites;
- palaeontological objects and material, meteorites and rare geological specimens.

According to Section 35 of the National Heritage Resources Act, dealing with archaeology, palaeontology and meteorites:

(1) The protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority.
(2) All archaeological objects, palaeontological material and meteorites are the property of the State.
(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
(4) No person may, without a permit issued by the responsible heritage resources authority—
(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
(5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may—
(a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
(b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
(c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
(d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

- **Legislative and Permit Requirements for potential specialist mitigation**

(1) Should professional palaeontological mitigation be necessary during the construction phase of the development, the palaeontologist concerned will need to apply for a Fossil Collection Permit from ECPHRA. (2) Palaeontological collection should comply with international best practice. (3) All fossil material collected must be deposited, together with key collection data, in an approved depository (museum / university), such as the Albany Museum, Grahamstown. (4) Palaeontological mitigation work including the ensuing Fossil Collection Reports should comply with the minimum standards specified by SAHRA (2013).

4. GEOLOGICAL CONTEXT

The geology of the Impofu Wind Farm grid line extension corridor near Port Elizabeth is outlined on adjoining 1: 50 000 geological maps 3325DC & DD, 3425BA Port Elizabeth and 3325DA Addo (Council for Geoscience, Pretoria; Le Roux 2000) (Figs. 2A & 2B). The corridor traverses the southern coastal platform which has been planed-off by wave erosion across Mesozoic sedimentary bedrocks of the **Uitenhage Group**, represented here by the fluvial **Kirkwood Formation** and marine **Sundays River Formation**. These Early Cretaceous bedrocks crop out principally along the margins of later incised valleys of the Swartkops and Coega Rivers as well as tributary streams such as the Brak River. However, even here levels of bedrock exposure are very low due to dense thicket vegetation. Much of the southern coastal platform here is blanketed by Caenozoic (Miocene to Recent) coastal deposits of the **Algoa Group**, represented within the grid line project area by the basal coastal conglomerates and calcarenites of the **Alexandria Formation** (See stratigraphic table in Fig. 3). These younger marine rocks are also best exposed along the margins of the incised coastal platform, for example along the edge of Grassridge Plateau. On the plateau itself the Alexandria beds are largely blanketed by younger calcretes, pebbly eluvial (downwasted) deposits previously referred to the "**Bluewater Bay Formation**" (no longer formally recognised) and soils as well as Bontveld vegetation. The wide, flat floors of the Swartkops and Coega River Valleys are mantled by a range of thick, silty to gravelly alluvial deposits of Late Caenozoic age. Relict patches of older, Neogene to Pleistocene alluvial gravels and finer-grained alluvium occur on marginal terraces cut into Uitenhage Group bedrocks well above present-day river level. These younger alluvial deposits, including "High Level Gravels" are broadly equivalent to the polyphase **Kudus Kloof Formation** recognised along the Sundays River Valley further to the east but are not named in the present study area.

An extensive, fully-referenced account of these sedimentary rock units in the Coega SEZ has already been provided by Almond (2010a) and subsequent palaeontological studies by the same author (*e.g.* Almond 2010e) to which the interested reader is referred. A selection of field photos mainly aimed at illustrating the main rock units encountered during the short field survey of the Impofu WEF grid extension corridor is provided in Figures 4 to 19 together with explanatory figure legends.

Figure 1: Google Earth© satellite image showing the corridor (red polygon) for the proposed extension of the electrical grid connection for the authorized Impofu Wind Farms (East, West and North) between the existing Chatty and DEDISA Substations near Gqeberha (Port Elizabeth), Nelson Mandela Bay Municipality, Eastern Cape. The majority of the corridor follows existing powerlines and is either highly disturbed (*e.g.* outskirts of Motherwell) or of low palaeosensitivity (*e.g.* Grassridge Plateau in the NE). Sectors of potentially higher palaeontological heritage sensitivity occur along the valley margins of the Swartkops River, Coega River and Brakrivier where sedimentary bedrocks of the Sundays River and Kirkwood Formations of Early Cretaceous age are locally exposed. Please note direction of North arrow towards top RHS of image.

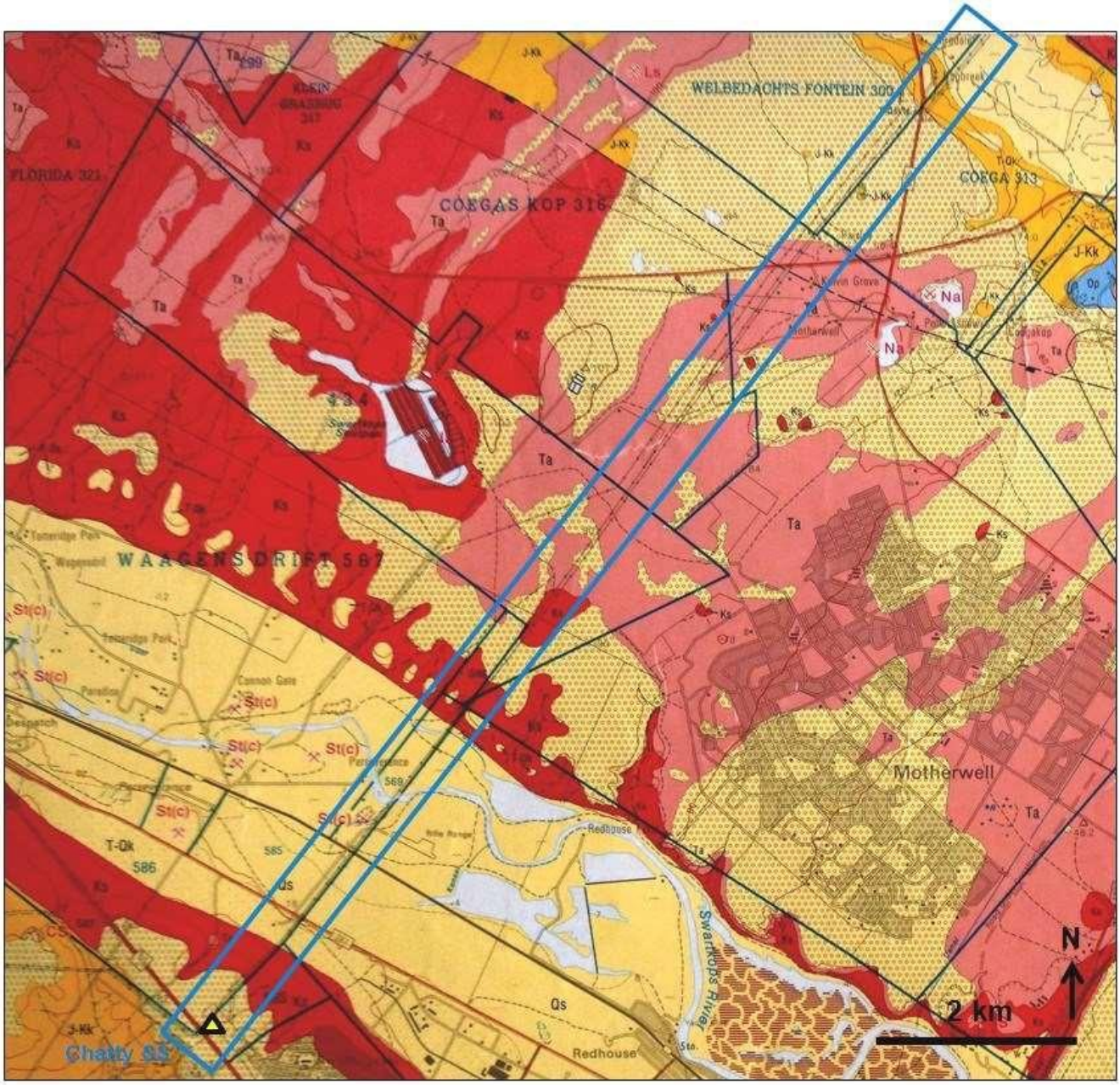

Figure 2A: Abstract from 1: 50 000 geological maps 3325DC & DD, 3425BA Port Elizabeth (Council for Geoscience, Pretoria; Le Roux 2000) showing the geology of the south-western portion of the Impofu grid extension project area (blue polygon) between Chatty and DEDISA Substations near Port Elizabeth. The main geological units shown here include the Sundays River Formation (red, Ks), the Kirkwood Formation (dark yellow, J-Kk), the Alexandria Formation (pink, Ta), gravelly residual soils overlying the latter, previously known as the Bluewater Bay Formation (pale yellow with large dots), as well as Tertiary to Quaternary fluvial deposits (pale yellow with dots, T-Qk). (*N.B.* These geological maps were produced before construction of Ngqura Port and the Coega IDZ so they are outdated in several respects).

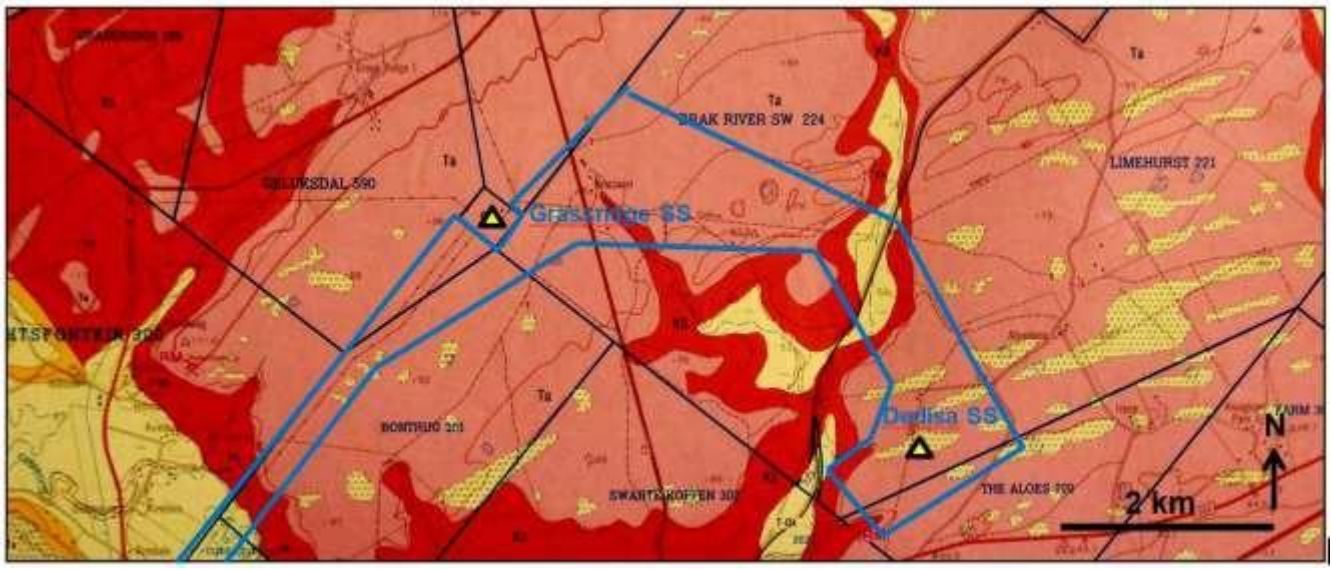

Figure 2B: Abstract from 1: 50 000 geological map 3325DA Addo (Council for Geoscience, Pretoria; Le Roux 2000) showing the geology of the north-eastern sector of the Impofu grid extension project area (blue polygon) between Chatty and DEDISA Substations near Port Elizabeth. The main geological units shown here include the Sundays River Formation (red, Ks), the Kirkwood Formation (dark yellow, J-Kk), the Alexandria Formation (pink, Ta), gravelly residual soils overlying the latter, previously known as the Bluewater Bay Formation (pale yellow with large dots), as well as Tertiary to Quaternary fluvial deposits (pale yellow with dots, T-Qk). (*N.B.* These geological maps were produced before construction of Ngqura Port and the Coega IDZ so they are outdated in several respects).

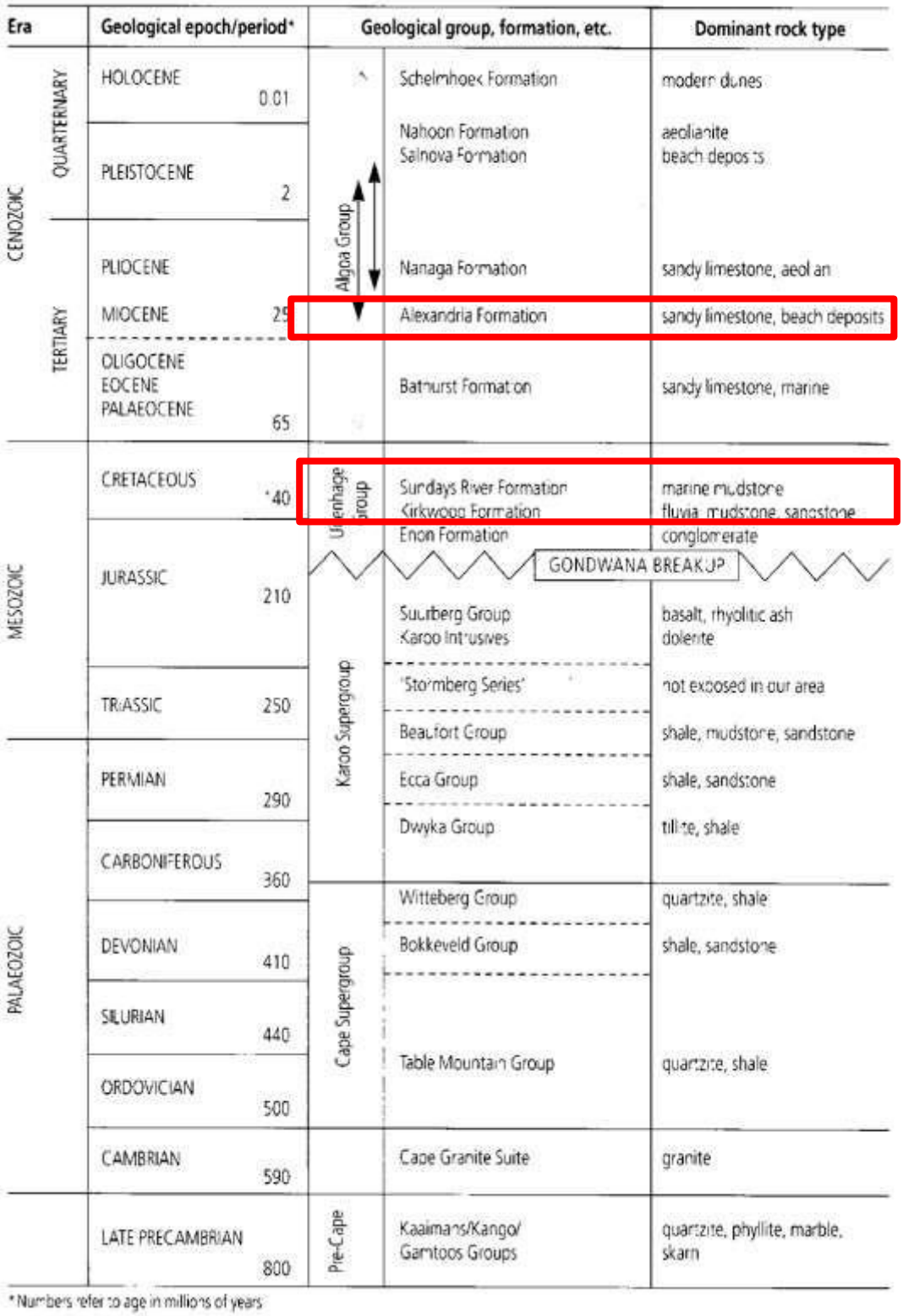

Figure 3: Stratigraphic table of geological units represented on the South Coast of the Eastern Cape (modified from Rust 1998). The main sedimentary successions that occur within the Impofu grid connection project area are outlined in red. However, Late Caenozoic alluvial deposits along the main drainage lines (*e.g.* Swartkops and Coega Rivers) broadly equivalent to the Kudus Kloof Formation of the Sundays River are not included here.

Figure 4: View southwest-wards along the grid connection corridor where this crosses the Swartkops River Valley. Outcrops of Sundays River Formation on both sides of the valley here are largely covered by dense thicket (foreground) while thick Late Caenozoic alluvial sediments are, at most, sparsely fossiliferous.

Figure 5: View towards the NE across the floor of the Coega River Valley, floored by thick younger alluvial deposits, with very limited exposure of Uitenhage Group bedrocks on the NE valley slopes (SW edge of the Grassridge Plateau) which are largely covered by dense thicket.

Figure 6: Pale, weathered Sundays River siltstones overlain by orange-brown rubified soils to the NE of Chatty Substation, close to the edge of the Swartkops River Valley (Hammer = 30 cm).

Figure 7: Limited exposures of weathered Sundays River Formation bedrocks in erosion scars on the SW flanks of the Swartkops River Valley. Occasional fossil molluscs have been recorded from the valley slopes by McLachlan & McMillan (1976).

Figure 8: Close-up of weathered Sundays Formation sediments shown above with prominent-weathering, lenticular carbonate concretions that are a focus for fossil finding (Hammer = 30 cm).

Figure 9: Patchy exposures of weathered Sundays River sediments along the Brak River valley NW of DEDISA Substation, Coega IDA. Several historical fossil ammonite sites are located along this valley (McLachlan & McMillan 1976) but no further fossil material was recorded here in the later survey of the Coega IDZ by Almond (2010a).

Figure 10: Excellent exposures of muti-hued siltstones ("variegated marls") of the Kirkwood Formation on the NE flanks of the Coega River Valley, just N of the grid line corridor (Loc. 565 in map Fig. 23). They are interbedded with well-sorted, non-pebbly greyish-green sandstone packages of Sundays River type, probably reflecting inter-tonguing of continental and marine facies within the Uitenhage Group here. See also following figure.

Figure 11: Late Caenozoic fluvial conglomerates of well-rounded TMG quartzite sharply overlying the Uitenhage Group, same locality as previous figure (Loc. 565 in map Fig. 23).

Figure 12: Thin bench of sparsely pebbly calcarenite and shelly coquina of the basal Alexandria Formation on Farm Bontrug 301 (Loc. 566 in map Fig. 23) (Hammer = 30 cm).

Figure 13: Representative view of flat terrain on the Grassridge Plateau showing pervasive near-surface calcrete in the foreground.

Figure 14: Road cutting on the SW margins of the Grassridge Plateau showing Alexandria Formation calcarenites overlain by deeply rubified soils and pebbly concentrations of the "Bluewater Bay Formation", essentially a downwasted (eluvial / relictual) weathering product of the underlying unit (Hammer = 30 cm).

Figure 15: Veneer of downwasted pebbles overlying pale calcrete exposed in tracks across the Grassridge Plateau between the Grassridge and DEDISA Substations.

Figure 16: Bank of semi-consolidated, well-rounded but poorly-sorted fluvial gravels elevated some 40 m above present day river level on the NE flanks of the Swartkops River Valley and probably Neogene in age (Hammer = 30 cm).

Figure 17: Close-up of pebbly surface gravels near Chatty Substation, predominantly of TMG quartzite and mostly reworked from pre-existing conglomerates of the Alexandria Formation or younger Caenozoic fluvial gravels (Hammer = 30 cm).

Figure 18: Thick, reddish-brown alluvial soils and basal gravels of alluvial origin overlying the Sundays River Formation outcrop area near Chatty Substation.

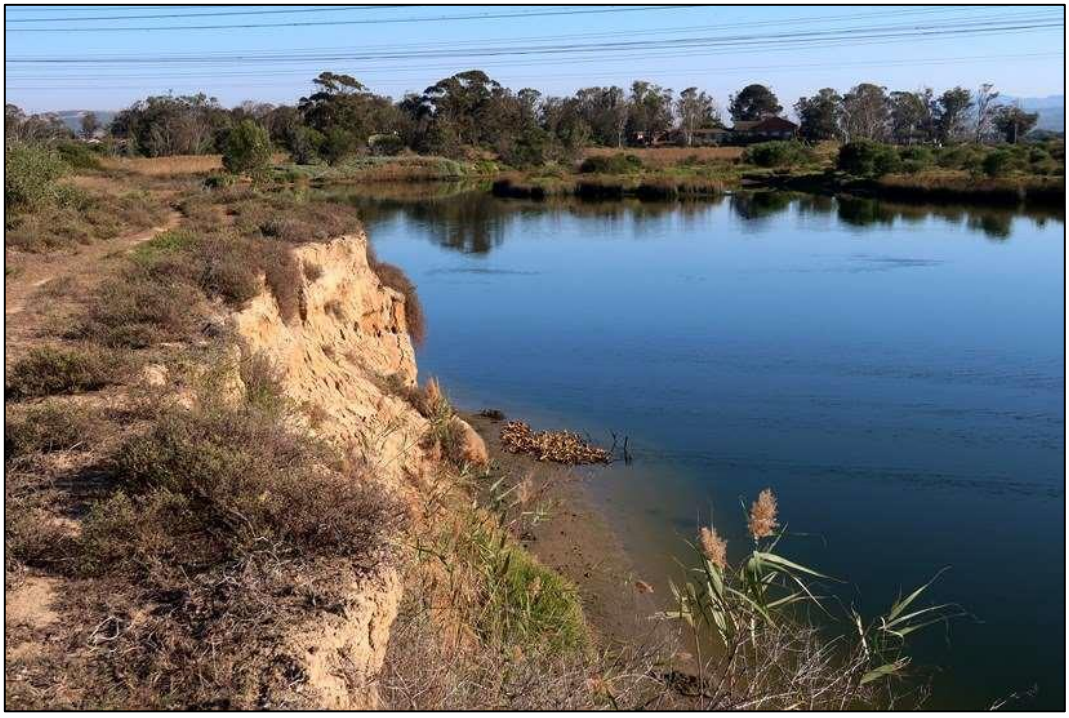

Figure 19: Thick succession of pale, fine-grained Late Caenozoic alluvium exposed in the steep SW banks of the Swartkops River.

5. PALAEONTOLOGICAL HERITAGE

An extensive, illustrated account of fossil biotas recorded from the various Mesozoic and Caenozoic sedimentary rock units represented within the Coega SEZ has been provided by Almond (2010a), supplemented by several later palaeontological field studies in the region (See References, especially Almond 2010a, 2010e).

Table 1: Outline of the fossil assemblages recorded from the most palaeontologically sensitive rock units mapped within the Impofu grid extension corridor (Modified from Almond 2010a).

FORMATION & AGE	FOSSIL HERITAGE	PALAEONTOLOGICAL SENSITIVITY	RECOMMENDED MITIGATION FOR NEW DEVELOPMENTS
ALEXANDRIA FORMATION (Ta) Miocene – Pliocene shallow marine to estuarine sediments	Very rich shelly invertebrate faunas, especially molluscs but also several other groups, sharks teeth, possible rare vertebrate bones	LOW TO HIGH rich shelly faunas only found at some localities fossil shells often destroyed by deep weathering, calcrete formation, especially in near-surface sections	Mitigation not required - *unless* rich fossil accumulations exposed during excavation
SUNDAYS RIVER FORMATION (Ks) Early Cretaceous marine to estuarine / intertidal mudrocks and sandstones	Rich variety of marine molluscs (bivalves, ammonites *etc*) and other invertebrates v. rare marine reptiles (plesiosaurs)	MODERATE TO HIGH most shelly fossils associated with thin sandstones	**Substantial (high volume) excavations to be examined and sampled by professional palaeontologist while fresh bedrock is still exposed**
KIRKWOOD FORMATION (J-Kk) Early Cretaceous fluvial to estuarine mudrocks and sandstones	Rare dinosaurs, petrified wood, plants (esp. gymnosperms), charcoal, freshwater crustaceans & molluscs	MODERATE TO HIGH fossils generally sparse but may be concentrated at certain horizons (*eg* ancient soils, flood deposits)	**Substantial (high volume) excavations to be examined and sampled by professional palaeontologist while fresh bedrock is still exposed**

The primary focus of the present study is to assess potential palaeontological impacts of the proposed WEF grid extension on potentially-sensitive sedimentary rock units, the Early Cretaceous **Kirkwood and Sundays River Formations** of the Uitenhage Group and the Miocene – Pliocene **Alexandria Formation** of the Algoa Group (See stratigrapic column Fig. 3) where these units are mapped along the margins of the Swartkops, Coega and Brak River Valleys (See Fig. 1). The site visit showed, however, that due to cover by dense thicket vegetation on steeper valley slopes as well as the extensive mantle of younger, fossil-poor surface gravels, sands, calcrete and geologically young (Pleistocene - Holocene) alluvium, only a few scattered and for the most part very limited exposures of these rocks occur within or close to the project footprint.

Pale, greyish to yellowish Sundays River Formation marine siltstones with sparse horizons of calcareous concretions are locally exposed close to the grid corridor along the SW edge of the Swartkops River valley but they are generally highly weathered and mantled by thick alluvial soils and

pebbly to cobbly gravels (Figs. 6 to 8). On the NE flanks of the Swartkops Valley the Sundays River beds are likewise weathered near-surface and locally incised by poorly-sorted pebbly to boulder “High Level Gravels” that are broadly equivalent to the Kudus Kloof Formation of the Sundays River Valley and are likely to be of Neogene (Late Tertiary) age (Fig. 16). No new fossil remains were recorded close to the grid extension corridor in either area during the site visit. It is noted that a range of Cretaceous marine fossils – including various subgroups of Molluca (bivalves, gastropods, ammonites), serpulid worm tubes and even rare reptilian remains (dinosaurs, lizards) - have previously been recorded from Sundays River Formation along the Swartkops Valley (McLachlan & McMillan 1976).

No good Kirkwood Formation exposures were encountered within or close to the project area along the SW edge of the Coega River Valley, or indeed elsewhere within the project area. The impressive, extensive cliff section on the NE valley flank exposes Uitenhage Group rocks just to the NW of the corridor (Figs. 10 & 11) (Loc. 565 in map Fig. 23) that are mapped within the Sundays River Formation (Fig. 2B). However, the Mesozoic beds here in fact show an intercalation of multi-hued (“variegated”) siltstones typical of the continental Kirkwood Formation and greenish- to yellowish-weathering, massive, fine-grained (rather than pebbly) sandstone packages more characteristic of the marine Sundays River Formation. This anomaly may reflect the inter-tonguing of terrestrial and marine facies along the Cretaceous shoreline. At Loc. 565 the Uitenhage Group bedrocks are sharply capped by a package of Late Caenozoic fluvial conglomerates featuring well-rounded clasts of pale Table Mountain Group quartzite (possibly reworked, at least in part, from the basal Alexandria Formation) followed by sparse pebbly finer-grained alluvium and soils.

Ammonites and other molluscs have been previously collected from Sundays River beds along the Coega Valley (McLachlan & McMillan 1976) but no new sites were recorded during the recent site visit. It is noted that erosion gullies along the edge of the Grassridge Plateau shortly to the SE of the grid extension corridor have recently yielded highly fossiliferous sandstones within the Sundays River beds with important occurrences of bivalves, corals and rare scaphopod molluscs (tusk shells) (Almond 2010a, 2010e) (Site GS3 in Fig. 23). Likewise several ammonite sites are mapped along the narrow but steep-sided Brak River Valley, a tributary of the Coega, River where this incises the Grassridge Plateau to the NW and W of DEDISA Substation (McLachlan & McMillan 1976, Cooper 1981) (Fig. 9). This area was surveyed by Almond (2010) who found no additional fossil material but remains palaeontologically sensitive. The four Sundays River Formation sites GS3 to GS6 in map Figure 23 refer to those previously identified by Almond (2010a) as palaeontologically sensitive and / or of geoheritage interest. The only one of these falling within the present project area, GS6 at 33.746S, 25.670 E, refers to an erosion gulley immediately north of Tossies Quarry North which has yielded richly fossiliferous marine sandstones containing a range of mollusc taxa.

The north-eastern sectors of the project footprint located on the marine-planed Grassridge Plateau are almost entirely underlain by calcretised marine sediments of the Miocene - Pliocene Alexandria Formation and its downwasted weathering product *viz*. the pebbly, so-called “Bluewater Bay Formation” which is often associated with deeply rubified *terra rossa* sandy soils (Figs. 13 to 15). These sediments are, for the most part, only sparsely fossiliferous and poorly-exposed in this region. They have already been palaeontologically surveyed by Almond (2010a) who did not recognise any Late Caenozoic sites of high palaeontological sensitivity in the grid extension project area. Lime-rich shelly coquinas dominated by comminuted valves of thick-shelled oysters are exposed in a shallow

kranz of Alexandria Formation limestones at Locality 566, close to the south-western edge of the Grassridge Plateau, where they sharply overlie weathered Sundays River Formation siltstones (Figs. 12, 20 & 21). Such high energy shell beds are typical within the lower part of the Alexandria Formation marine succession and this locality is therefore not regarded as of special scientific or conservation significance.

A range of unconsolidated colluvial, alluvial and eluvial (relictual / downwasted) silts, sands and pebbly horizons are found at or near-surface within the grid extension project area and are locally well-exposed in stream or erosion gullies, river banks and along the low escarpments flanking the Swartkops and Coega River Valleys (Figs. 13 to 19). Most of these deposits are probably of Pleistocene to Holocene age while fluvial conglomerates preserved at high elevations (several 10s of meters) above modern river level may be of Neogene (Late Tertiary) age by comparison with comparable but better studied terrace sediments of the Kudus Kloof Formation mapped along the Sundays River Valley. As with the last named formation, these younger alluvial deposits are, at most, sparsely fossiliferous and no fossil remains were recorded within them during the recent site visit.

Figure 20: Close-up of calcretised shelly coquina of the Alexandria Formation in exposure shown previously in Figure 12. The shells mainly comprise wave-comminuted fragments of thick-shelled oysters and are of widespread occurrence in this unit so no special mitigation is required here (Scale in cm and mm) (Loc. 566 in map Fig. 23).

Figure 21: Fragmentary oyster shells that have weathered out of the calcretised coquina illustrated above (Scale in cm and mm) (Loc. 566).

Figure 22: Palaeosensitivity mapping of the Impofu grid extension corridor (blue) based on the DEFF screening map. Dark red areas of Very High sensitivity are underlain by potentially fossilferous bedrocks of the Sundays River and Kirkwood Formations.

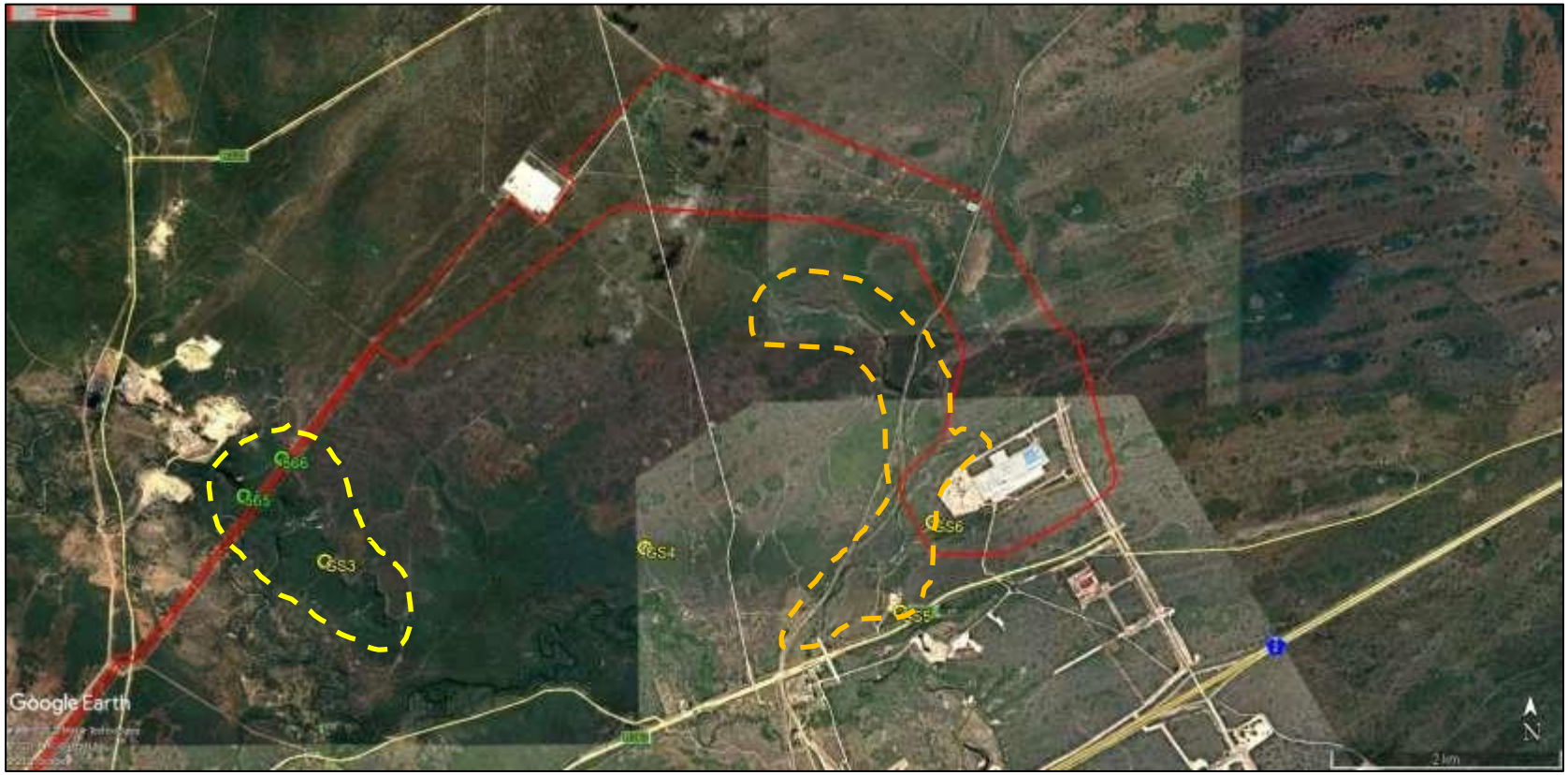

Figure 23: Google Earth© satellite image of the NE sector of the proposed grid extension corridor (red polygon) showing known fossil sites and areas of higher palaeontological sensitivity (No such sites or areas have been identified along the proposed grid corridor further to the SW). Sites GS3 to GS6 in yellow, identified by Almond (2010a), refer to important geological and / or palaeontological exposures of the Sundays River Formation. The orange dotted area west of DEDISA Substation encloses the narrow branching valley of the Brak River which has previously yielded fossils of Cretaceous ammonites. If the chosen grid line traverses this sector of the project area near DEDISA Substation, as far as possible it should span the valley of the Brak River. Site SG6 (33.746 S, 25.670 E) north of Tossies Quarry should be protected by a 10m wide buffer. Gulley exposures within the yellow dotted area along the NE edge of the Coega River Valley have previously yielded important Cretaceous marine fossils but not directly within the grid corridor. Site 565 (steep escarpment exposures of Uitenhage Group beds) and Site 566 (fossiliferous limestones of the Alexandria Formation of low conservation value) lie close to but *outside* the grid corridor and do not require mitigation (GPS locality details for the numbered sites is provided in Appendix 1).

6. SITE SENSITIVITY VERIFICATION

According to the DEFF Screening Report for the Impofu grid extension corridor (Fig. 22) most of the project area is of Medium palaeosensitivity, corresponding to areas underlain by the Alexandria Formation as well as other Late Caenozoic superficial sediments (*e.g.* alluvium). Areas underlain by Cretaceous bedrocks of the Uitenhage Group (Sundays River and Kirkwood Formations) are designated as being of Very High palaeosensitivity. Based on a recent site visit backed up by several previous field-based palaeontological heritage surveys in the broader study region the Screening report palaeosensitivity mapping is *contested*. In particular:

- The Late Caenozoic superficial deposits are generally, at most, only sparsely fossiliferous while local patches of High to Very High palaeosensitivity may occur within the Alexandria Formation;
- Most of the Uitenhage Group outcrop areas are mantled by much younger superficial sediments (alluvium, calcrete, gravels, soils *etc*) as well as dense thicket vegetation and are in practice of Low sensitivity, although patches of High to Very High sensitivity may also occur;
- Several sectors of the grid corridor are now highly disturbed (*e.g.* outskirts of Motherwell).

It is concluded that the Impofu grid extension corridor is almost entirely of Low sensitivity. A small number of sites or areas of higher palaeosensitivity associated with the Cretaceous Uitenhage group bedrocks within or close to the corridor are shown in map Figure 23 (GPS locality details for the sites is provided in Appendix 1).

7. IMPACT ASSESSMENT

Anticipated impacts on local paleontological heritage resources during the Construction Phase of the proposed Impofu grid extension are assessed in Table 2. Note that further significant impacts during the Operational and De-commissioning Phases are not expected.

Palaeontological heritage impacts are generally direct, negative and irreversible. Some sort of impact on fossils is inevitable where sedimentary rocks are concerned, but only those affecting fossils that are of scientific or conservation significance are considered here.

Despite the locally High palaeosensitivity of the bedrocks in the Port Elizabeth region, the LOW impact significance assessed for the proposed development, both with and without mitigation, reflects (1) the high level of disturbance of many sectors of the grid corridor (*e.g.* existing powerline servitude, urban development and refuse on outskirts of Motherwell); (2) the small scale of the project footprint in relation to the outcrop areas of the fossiliferous rock units concerned; (3) low exposure levels and high levels of near-surface weathering of Mesozoic bedrocks within the grid line corridor. Likewise, cumulative impacts on palaeontological heritage in the context of existing powerlines in the region are assessed as LOW.

Proposed mitigation measures are outlined in Section 8.1.

Table 2: Assessment of anticipated impacts on palaeontological heritage resources* during the Construction Phase of the proposed Impofu grid extension*

	Without mitigation	**With mitigation**
Nature	Disturbance, damage or destruction of fossils preserved at of beneath ground surface (= direct, negative impacts)	
Cause	Surface clearance, excavations (*e.g.* for pylon footings, access roads) and disturbance (*e.g.* by vehicle activity) during the construction phase	
Status	Negative	Negative & positive
Extent	Project footprint (1)	Project footprint (1)
Duration	Permanent (4)	Permanent (4)
Intensity / magnitude	Low (4)	Very Low (2)
Probability	Probable (2)	Probable (2)
Significance	**LOW (18)**	**LOW (14)**
Reversibility	Irreversible	Irreversible
Loss of unique / irreplaceable resource	Possible but unlikely	Possible but unlikely
Potential for mitigation	Avoidance of key fossil sites within corridor, application of Chance Finds Protocol	
Confidence level	Medium	

* *N.B.* Refers specifically to fossil remains that are of scientific and / or conservation significance (Impacts on *some* sort of fossils - such as microfossils - within most sedimentary rocks are unavoidable).

8. CONCLUSIONS & RECOMMENDATIONS

The proposed grid extension corridor for the authorized Impofu Wind Farms (East, West and North) which will run between Chatty and DEDISA Substations near Port Elizabeth, Eastern Cape, is underlain by (1) Cretaceous bedrocks of the Uitenhage Group (marine Sundays River and continental Kirkwood Formations), (2) Miocene to Pliocene marine conglomerates and calcareous sandstones of the Alexandria Formation (Algoa Group) as well as (3) a range of Late Caenozoic superficial deposits such as alluvium, surface gravels and soils. Several important marine invertebrate (and very rare vertebrate) fossil sites within the Uitenhage group outcrop area have been previously recorded along the flanks of the Swartkops and Coega River Valleys as well as along the narrow Brak River Valley that incises the Grassridge Plateau near DEDISA Substation. However, with the exception of the Brak River Valley sites reported by McLachlan and McMillan (1976, their figure 8) and one additional fossil site (GS6) near DEDISA Substation to the north of Tossies Quarry N identified by Almond (2010a), none of these sites lies within the grid extension corridor (See map Figure 23 herein). Elsewhere, the Cretaceous bedrocks within the grid extension corridor are very poorly exposed due to superficial sediment cover and dense thicket vegetation as well as often deeply weathered near-surface; significant impacts on scientifically important, unique fossil assemblages are therefore not anticipated here. The Alexandria Formation beds on the Grassridge Plateau near Grassridge and DEDISA Substations are generally calcretised, leached and of low palaeosensivity. Late Caenozoic alluvium and other superficial deposits (calcrete, surface gravels, soils *etc*) mantling most sectors of the grid extension corridor are likewise of low palaeosensitivity and no fossils were recorded within them during the recent one day site visit.

It is concluded that the palaeontological impact significance of the proposed Impofu grid corridor extension is LOW (both with and without mitigation). There are no fatal flaws in the development proposal and no objections on palaeontological grounds to authorization of the grid extension. This

assessment applies to all components of the electrical infrastructure development, including electricity pylons, access roads and new switching station, while there is also no preference for particular infrastructure design (*e.g.* pylon type) on palaeontological heritage grounds.

8.1. Recommendations for the Environmental Management Programme (EMPr)

General recommendations regarding the protection and mitigation of (legally protected) Chance Fossil Finds within the development footprint are summarized in the tabulated Chance Fossil Finds Procedure appended to this report (Appendix 2).

The ECO / Site Control Officers responsible for the development should be made aware of the potential occurrence of scientifically-important fossil remains within the development footprint. Should substantial fossils be exposed during surface clearance or bedrock excavations, the ECO should safeguard these, preferably *in situ*. They should then alert the Eastern Cape Provincial Heritage Resources Agency, ECPHRA (Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za) as soon as possible. This is to ensure that appropriate action (*i.e.* recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the proponent's expense.

The palaeontologist concerned with any mitigation work will need a valid Fossil Collection Permit from ECPHRA and any material collected would have to be curated in an approved depository (*e.g.* museum or university collection). All palaeontological specialist work would have to conform to international best practice for palaeontological fieldwork and the study (*e.g.* data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013).

There are only two **specific recommendations** regarding palaeontological heritage in the vicinity of DEDISA Substation (See satellite map Figure 23):

1. As far as possible, the grid line and associated access road should avoid direct impacts on impacts within the narrow Brak River Valley (*e.g.* by spanning the valley (See orange dotted area in Fig. 23);

2. Fossil site SG6 (33.746 S, 25.670 E) north of Tossies Quarry should be protected by a 10m wide buffer.

These monitoring and mitigation recommendations must be incorporated into the Environmental Management Programme (EMPr) for the development.

Pending the potential discovery of significant new fossil remains before or during construction of the grid line - such as logs of petrified wood, dinosaur or other vertebrate bones and teeth, or well-preserved shells, no other specialist palaeontological studies or mitigation are recommended for this project.

9. ACKNOWLEDGEMENTS

Dr Belinda Clark of the CEN Integrated Environmental Management Unit, Port Elizabeth is thanked for commissioning this study, for providing the background documentation and for facilitating the fieldwork. I am grateful to the staff of M Secure, Port Elizabeth, for providing security cover during the field survey.

10. KEY REFERENCES

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11. QUALIFICATIONS & EXPERIENCE OF THE AUTHOR

Dr John Almond has an Honours Degree in Natural Sciences (Zoology) as well as a PhD in Palaeontology from the University of Cambridge, UK. He has been awarded post-doctoral research fellowships at Cambridge University and in Germany, and has carried out palaeontological research in Europe, North America, the Middle East as well as North and South Africa. For eight years he was a scientific officer (palaeontologist) for the Geological Survey / Council for Geoscience in the RSA. His current palaeontological research focuses on fossil record of the Precambrian - Cambrian boundary and the Cape Supergroup of South Africa. He has recently written palaeontological reviews for several 1: 250 000 geological maps published by the Council for Geoscience and has contributed educational material on fossils and evolution for new school textbooks in the RSA.

Since 2002 Dr Almond has also carried out palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape, Limpopo, Northwest Province, Mupumalanga, KwaZulu-Natal and the Free State under the aegis of his Cape Town-based company *Natura Viva* cc. He has served as a long-standing member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling technical reports on the provincial palaeontological heritage of Western, Northern and Eastern Cape for SAHRA and HWC. Dr Almond is an accredited member of PSSA and APHP (Association of Professional Heritage Practitioners – Western Cape).

Declaration of Independence

I, John E. Almond, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed development project, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.

Dr John E. Almond
Palaeontologist
***Natura Viva* cc**

APPENDIX 1: GPS DATA FOR KEY FOSSIL SITES / GEOSITES

All GPS readings were taken in the field using a hand-held Garmin GPSmap 64s instrument. The datum used is WGS 84. Please refer to satellite map Figure 23 and note that:

- The fossil sites recorded here may represent only a small sample of potential sites present at or beneath the ground surface within the project area.
- This palaeontological site data is *not* for public release, due to conservation concerns.

<table>
<tr><td colspan="3">APPENDIX 2: CHANCE FOSSIL FINDS PROCEDURE: Proposed Impofu grid extension between Chatty and DEDISA Substations near Port Elizabeth / Gqeberha</td></tr>
<tr><td>Province & region:</td><td colspan="2">EASTERN CAPE, NELSON MANDELA BAY MUNICIPALITY</td></tr>
<tr><td>Responsible Heritage Resources Agency</td><td colspan="2">Eastern Cape Provincial Heritage Resources Agency, ECPHRA (Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za)</td></tr>
<tr><td>Rock unit(s)</td><td colspan="2">Kirkwood & Sundays River Formations (Uitenhage Group), Alexandria Formation (Algoa Group), Late Caenozoic alluvium.</td></tr>
<tr><td>Potential fossils</td><td colspan="2">Kirkwood Fm: petrified wood, vertebrate bones and teeth, plant compressions, trace fossils.
Sundays River Formation: shelly marine invertebrates (e.g. ammonites & other molluscs), rare reptile bones and teeth, trace fossils.
Alexandria Fm: marine shells, trace fossils.</td></tr>
<tr><td rowspan="5">ECO / ESO protocol</td><td colspan="2">1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately (N.B. safety first!), safeguard site with security tape / fence / sand bags if necessary.</td></tr>
<tr><td colspan="2">2. Record key data while fossil remains are still in situ:
Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo
Context – describe position of fossils within stratigraphy (rock layering), depth below surface
Photograph fossil(s) in situ with scale, from different angles, including images showing context (e.g. rock layering)</td></tr>
<tr><td>3. If feasible to leave fossils in situ:
Alert Heritage Resources Agency and project palaeontologist (if any) who will advise on any necessary mitigation
Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Agency for work to resume</td><td>3. If not feasible to leave fossils in situ (emergency procedure only):
Carefully remove fossils, as far as possible still enclosed within the original sedimentary matrix (e.g. entire block of fossiliferous rock)
Photograph fossils against a plain, level background, with scale
Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags
Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist
Alert Heritage Resources Agency and project palaeontologist (if any) who will advise on any necessary mitigation</td></tr>
<tr><td colspan="2">4. If required by Heritage Resources Agency, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.</td></tr>
<tr><td colspan="2">5. Implement any further mitigation measures proposed by the palaeontologist and Heritage Resources Agency</td></tr>
<tr><td>Specialist palaeontologist</td><td colspan="2">Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository (e.g. museum / university / Council for Geoscience collection) together with full collection data. Submit Palaeontological Mitigation report to Heritage Resources Agency. Adhere to best international practice for palaeontological fieldwork and Heritage Resources Agency minimum standards.</td></tr>
</table>

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/
Date Received:	

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

EXTENSION OF THE ELECTRICAL GRID CORRIDOR FOR THE IMPOFU WIND FARMS (EAST, WEST AND NORTH) BETWEEN THE CHATTY AND DEDISA SUBSTATIONS, GQEBERHA (PORT ELIZABETH), EASTERN CAPE).

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.environment.gov.za/documents/forms.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	NATURA VIVA CC			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100
Specialist name:	Dr John Edward Almond			
Specialist Qualifications:	PhD (palaeontology)			
Professional affiliation/registration:	Palaeontolgical Society of Southern Africa, Association of Professional Heritage Practitioners (W Cape)			
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Telephone:	021 462 3622	Fax:	n/a	
E-mail:	naturaviva@universe.co.za			

2. DECLARATION BY THE SPECIALIST

I, **Dr John Edward Almond**, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

John E Almond

Signature of the Specialist

NATURA VIVA CC

Name of Company

1 July 2021

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Dr John Edward Almond**, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

John E Almond

Signature of the Specialist

NATURA VIVA CC

Name of Company

1 July 2021

Date

Signature of the Commissioner of Oaths

2021-07-01

Date

SOUTH AFRICAN POLICE SERVICE
STATION COMMANDER
CAPE TOWN
01 JUL 2021
CAPE TOWN
STATION COMMANDER
SOUTH AFRICAN POLICE SERVICE