SAHRA Ref. 13427

INTEGRATED HERITAGE IMPACT ASSESSMENT IN TERMS OF SECTION 38(8) OF THE NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT 25 OF 1999)

PROPOSED HOTAZEL SOLAR AND GRID CONNECTION ON REMAINING EXTENT (PORTION 0) OF THE FARM YORK A 279, REMAINDER OF FARM HOTAZEL 280, AND PORTION 11 OF FARM YORK A 279 DISTRICT OF HOTAZEL, NORTHERN CAPE PROVINCE

On behalf of: ABO WIND HOTAZEL PV (PTY) LTD

FEBRUARY 2019

STÉFAN DE KOCK/ GUILLAUME NARAINNE
PERCEPTION Planning
7, Imelda Court, 103 Meade Street, George
PO Box 9995, George, 6530

Cell: 082 568 4719
Fax: 086 510 8357
E-mail: perceptionplanning@gmail.com
www.behance.net/perceptionplanningSA

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REFERENCES and ACKNOWLEDGEMENTS

Almond, J. (2018). *Recommended Exemption from further Palaeontological Studies*. pp.1-14.

Atlantic Energy Partners (2018). *Technical Layout Development Report For The Hotazel Solar Facility*. Cape Town, pp.1-8.

Nilssen, P. (2018). *Phase 1a Archaeological Impact Assessment. Proposed Hotazel Solar and Grid Connection on Remaining Extent (Portion 0) of the Farm York A 279, Portion 0 of Hotazel 280, Portion 11 of the Farm York A 279, and Portion 3 of the Farm York A 279, District of Hotazel, Northern Cape Province*. Mossel Bay, pp.7-11.

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ABBREVIATIONS

1. NGSI - National Geo-Spatial Information, Department of Rural Development and Land Reform, Mowbray
2. HWC- Heritage Western Cape
3. NHRA - National Heritage Resources Act, 1999 (Act 25 of 1999)
4. HIA - Heritage Impact Assessment
5. HWC - Heritage Western Cape
6. SEF - Solar Energy Facility

COVER: Images by Webley. L, 2019

1 INTRODUCTION

PERCEPTION Planning was appointed by *ABO Wind Hotazel PV (Pty) Ltd* to undertake an Integrated Heritage Impact Assessment (HIA) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for the proposed construction of the Hotazel Solar Facility (100MW) on the Remainder of Farm York A279 and 132kV grid connection on the Remainder of Farm Hotazel 280, and Portion 11 of Farm York A 279, located within the Joe Morolong Local Municipality, which is part of John Taolo Gaetsewe District Municipality in the Northern Cape Province.

A copy of the Power of Attorney, duly signed by the registered property owner, appointing *Perception Planning* to lodge this application, is attached as part of **Annexure 1** hereto. Copies of the relevant SG Diagram are attached as part of **Annexure 2**.

The entire property is about **636 ha** in extent, while the affected portion of the property is approximately **275 ha** in extent and is situated about 3.6km SE of the town of Hotazel in the Northern Cape Province.

This report serves as an *Integrated Heritage Impact Assessment (HIA)* and includes inputs from the following specialist reports sanctioned as part of the HIA:

- Basic archival background research (Perception Planning, S. de Kock);
- Archaeological Impact Assessment (Dr. L. Webley, Madelon Tusenius);
- Recommended Exemption from further Palaeontological Studies (Natura Viva, Dr. J. Almond);
- Visual Impact Assessment (Visual Resource Management Africa CC, Stephen Stead).

2 STATEMENT OF INDEPENDENCE

With relation to the authors' appointment as an independent specialists responsible for the compilation of an Integrated Heritage Impact Assessment in terms of Section 38(3) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for this project, it is hereby declared that the undersigned:

- Acts as an independent specialist in this application;
- Regards the information contained in this report as it relates to my specialist input/study to be true and correct;
- Have and will not have any vested interest in the proposed activity proceeding;
- Does 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, 2014 and any specific environmental management Act;
- 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, 2014 and any specific environmental management Act;
- Is fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2014 (specifically in terms of regulation 13 of GN No. R. 982) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- Is aware that a false declaration is an offence in terms of regulation 48 of GN No. R. 982.

It is certified that SE de Kock has 21 years professional experience as urban planner (3 years of which were abroad) and 13 years professional experience as professional heritage practitioner. He is professionally registered/ affiliated as follows:

- Professional Heritage Practitioner (Association for Professional Heritage Practitioners)
- Professional Planner (South African Council for Planners, South African Planning Institute)

It is certified that GJR Narainne has 4 years professional experience as urban planner and 8 years professional experience as candidate heritage practitioner. He is professionally registered/ affiliated as follows:

- Candidate Heritage Practitioner (Association for Professional Heritage Practitioners)
- Candidate Planner (South African Council for Planners)

3 METHODOLOGY

As part of the compilation of this Integrated HIA report the site and its environs was studied, visited, photographed and assessed, which more specifically involved the following (for broad overview of HIA process refer to explanatory flow diagram below):

- Field work carried out by Dr. L. Webley on 23rd October 2018;
- Liaising with project manager, environmental consultant and various specialist consultants;
- Assimilating findings and recommendations emanating from specialist inputs into HIA;
- Identification of heritage-related issues and concerns;

- Analysis of development site and its environs;
- Identification of contextual spatial informants;
- Establishing cultural significance, based on criteria set out in NHRA;
- Identification of heritage-related design informants based on the above;
- Focussed public participation process to be coordinated as part of Environmental Impact Assessment facilitated by *Cape Environmental Impact Assessment Practitioners (Pty) Ltd*;
- Assess conformity of final proposed site layout to design informants identified;
- Submission to competent authorities (*SAHRA* and *Ngwao Boswa Kapa Bokoni)* via SAHRIS.

4 BRIEF DESCRIPTION OF STUDY AREA

4.1 Context

The irregular-shaped study area (±275 ha in extent) falls within the jurisdiction of the Joe Morolong Local Municipality, and is situated on the Remaining Extent (Portion 0) of the farm York A 279, the Remainder of Farm Hotazel 280, and on Portion 11 of Farm York A 279. From a broader context, the proposed development site is located about 3.6 km south-east of the town of Hotazel and some 50km north-east of the Northern Cape town of Kuruman, in the province of the Northern Cape, as seen in Figure 1 below. Hotazel Solar facility is bound to the west and south by the R31 road while an unnamed district road runs immediately east of the eastern boundary. The Hotazel manganese mine is situated to the north as is undeveloped agricultural or rural land. The western extent of the property is truncated by the Hotazel to Sishen railway line.

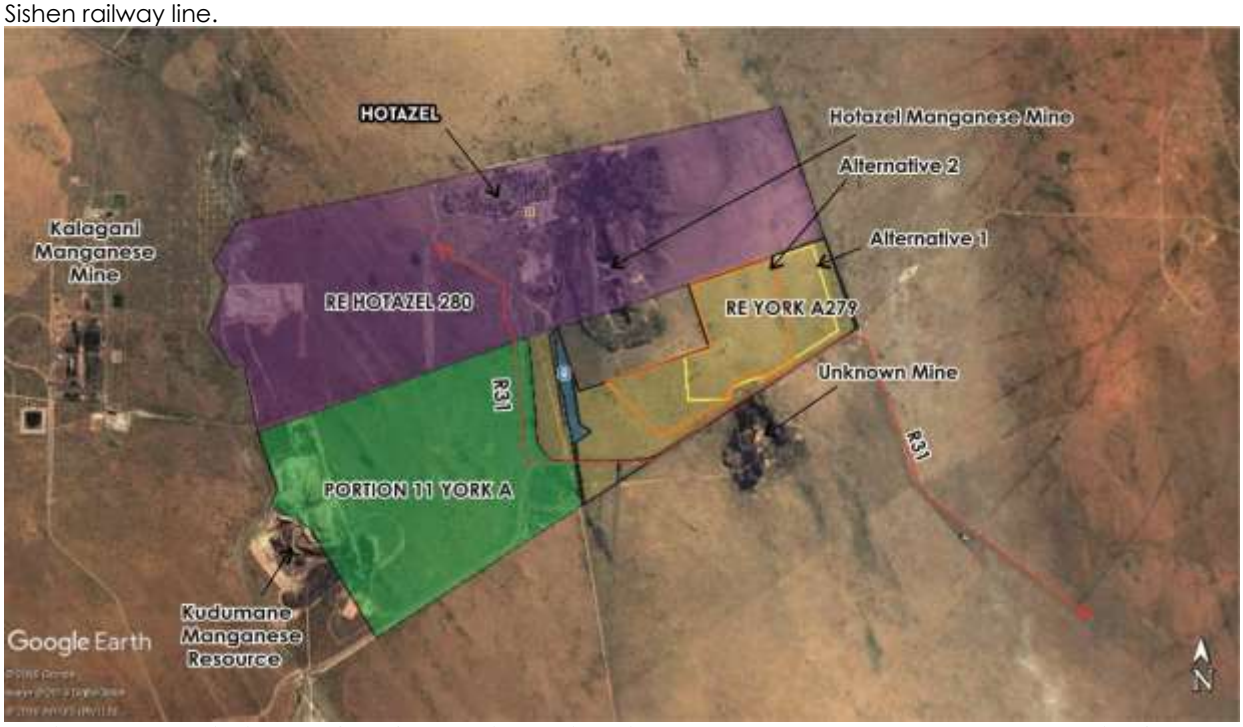

Figure 1: An aerial image of the farm portions which will be crossed by the proposed 132kV powerline from the proposed PV facility to Hotazel substation in the Northern Cape Province (Source: Google Earth, 2018)

The site is relatively flat and covered in yellowish-red Kalahari sand. The vegetation cover is variable with the majority being relatively sparse. The vegetation is largely thorn trees, but smaller, thorny bushes form very dense (impenetrable) clusters in low-lying parts of the site (Orton, 2017).

An additional description stated by Dr. Peter Nilssen in the Scoping Archaeological Impact Assessment (2018:11):

> *"Topographically, the surroundings of Hotazel are essentially flat with minor undulation. The exceptions are the Ga-Mogara River some 5km to the west and the Kuruman River about 10 to 15km to the NE. Vegetation is generally open, but not sparse, and consists of a cover of grass, bush, patches of swarthaak (Acacia dentinens) and a scatter of acacia trees".*

4.2 Current Access to the study area

Access to the study area is via the R31, towards to the north, then south-west still along the R31.

4.3 Surrounding Land Uses

The surrounding land use includes manganese mining and associated village of Hotazel, agricultural, rural and undeveloped. Recent human related disturbances to the environment include mining, roads (R31),

railway line, vehicle tracks, fencing and overhead power lines. Natural disturbances include animal tracks and burrowing by large and small mammals.

Figure 2: Building complex located south of the farm Re/York A 279 (Source: Google Earth, 2018)

Located south of the farm boundary of Re/York A 279, along the R31, is a complex of structures which comprises of a main house, a worker's house, the York Wash Bay, and other small cottages. The worker's house is a modern structure which faces a large open piece of ground covered with a layer of crushed black rock. The York wash bay is an area which is used for washing trucks. Powerlines running along the southern and western farm boundary of the study area, connecting to the Hotazel substation, were noted during field trip.

Figure 3: Location of property and proposed site in relation to Hotazel and direct environs (Source: GoogleEarth)

5 DEVELOPMENT PROPOSAL AND ALTERNATIVES

According to the *Technical Layout Report* (Atlantic Energy Partners, 2018), Hotazel Solar would consist of solar photovoltaic (PV) technology with fixed, single or double axis tracking mounting structures, with a net generation (contracted) capacity of 100 MW, as well as associated infrastructure, which will include:

- On-site switching-station / substation;
- Auxiliary buildings (gate-house and security, control centre, office, warehouse, canteen & visitors centre, staff lockers etc.);
- Inverter-stations, transformers and internal electrical reticulation (underground cabling);
- Access and internal road network;
- Laydown area;
- Overhead 132kV electrical distribution line / grid connection connecting to the Hotazel Substation, or to connect with a loop-in-loop-out of the 132kV under construction on the site boundary;
- Rainwater tanks; and
- Perimeter fencing and security infrastructure.

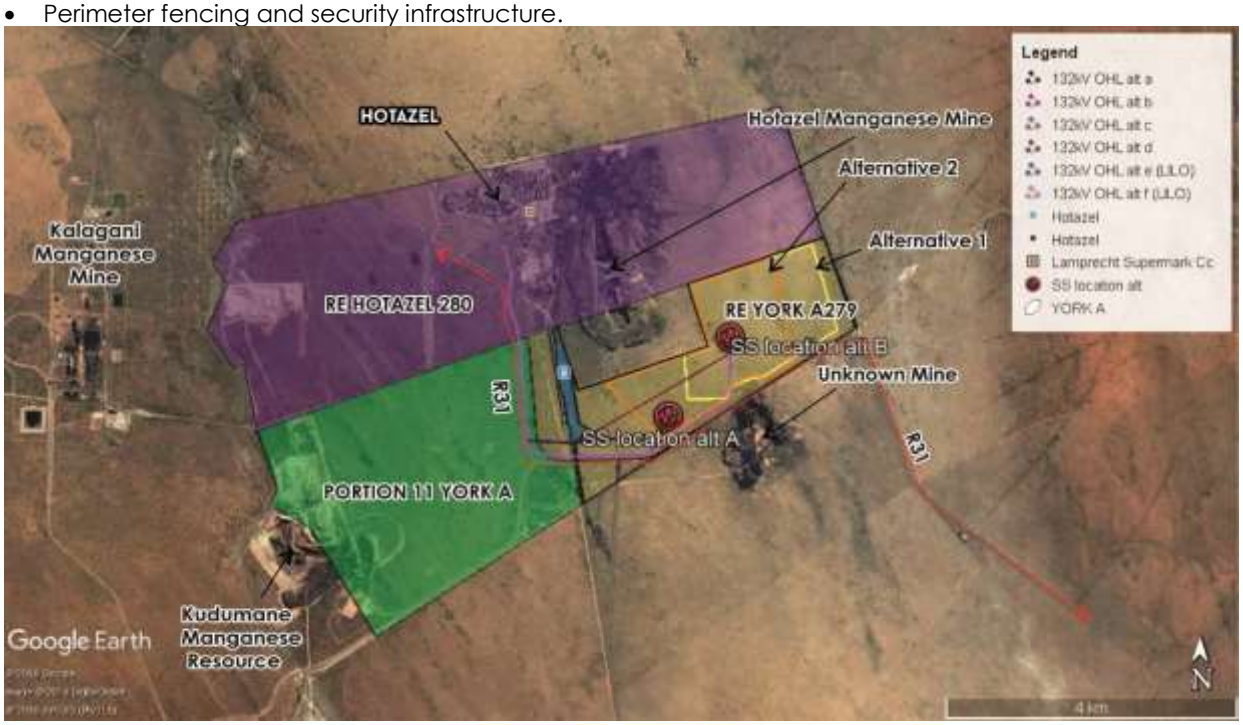

Figure 4: Location of the two alternative on-sit substations are shown as Alt A and Alt B. Alternative 2 is the preferred option (Source: Google Earth, 2018).

Figure 5: Layout Alternative 1 (Source: Atlantic Energy Partners, 2018)

It customary to develop the final / detailed construction layout of the SEF only once an Independent Power Producer (IPP) is awarded a successful bid under the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), after which major contracts are negotiated and final equipment suppliers identified.

To comply with the minimum requirements prescribed by the Department of Environmental Affairs (DEA), two layout alternatives were identified. They are: Layout Alternative 1 and Layout Alternative 2- as presented below:

Layout Alternative 1 constitutes a preliminary layout area within the initial/ conceptual area restricted to the east of the Property

Layout Alternative 2 includes a bit more sensitive habitat in the west with a higher abundance of Acacia haematoxylon, however it would have a shorter grid connection to the Hotazel substation.

Figure 6: Layout Alternative 2 (Source: Atlantic Energy Partners, 2018)

5.1 Substations

There are two substation options, Substation A and Substation B (Figure 4). The estimated footprint size of the substation is 1ha. Substation B is the preferred alternative, but final placement of the substation location will take into consideration ground conditions.

"It is proposed to connect the SEF (Solar Energy Facility) directly to Eskom's Hotazel Substation located ± 3km to the north west of the Property. The SEF substation will be approximately 100m x 100m in size and feature a step-up transformer/s to transmit electricity via a 132 kV OHL directly to the Hotazel Substation. Depending on which layout alternative is selected, there are options for the SEF substation location, and the OHL routing to the Hotazel Substation." (Atlantic Energy Partners, 2018:6)

5.2 Grid Connection (OHL) and cabling

It is proposed to connect the SEF directly to the Eskom's Hotazel Substation location about 3km to the north-west of the property (Alternative C). However, the option to loop into the new 132kV powerline on the southern boundary of the site will also be investigated (Alternative D) which is also the preferred alternative.

The SEF switching station will be approximately 100m x 100m in size and feature a step-up transformer to transmit electricity via a 132kV OHL directly to the Hotazel Substation. Depending on which of the two layout alternatives selected, there are options for the SEF switching station/substation location and the OHL routing to the Hotazel Substation.

The longest alternative (Alternative C from Substation Alternative B) is 6km in length. The OHL will have a maximum height of 24m and a servitude width of between 31m – 51m.

The ecologist advised that the far west and far eastern sides of the site should be avoided as these areas have a high tree density.

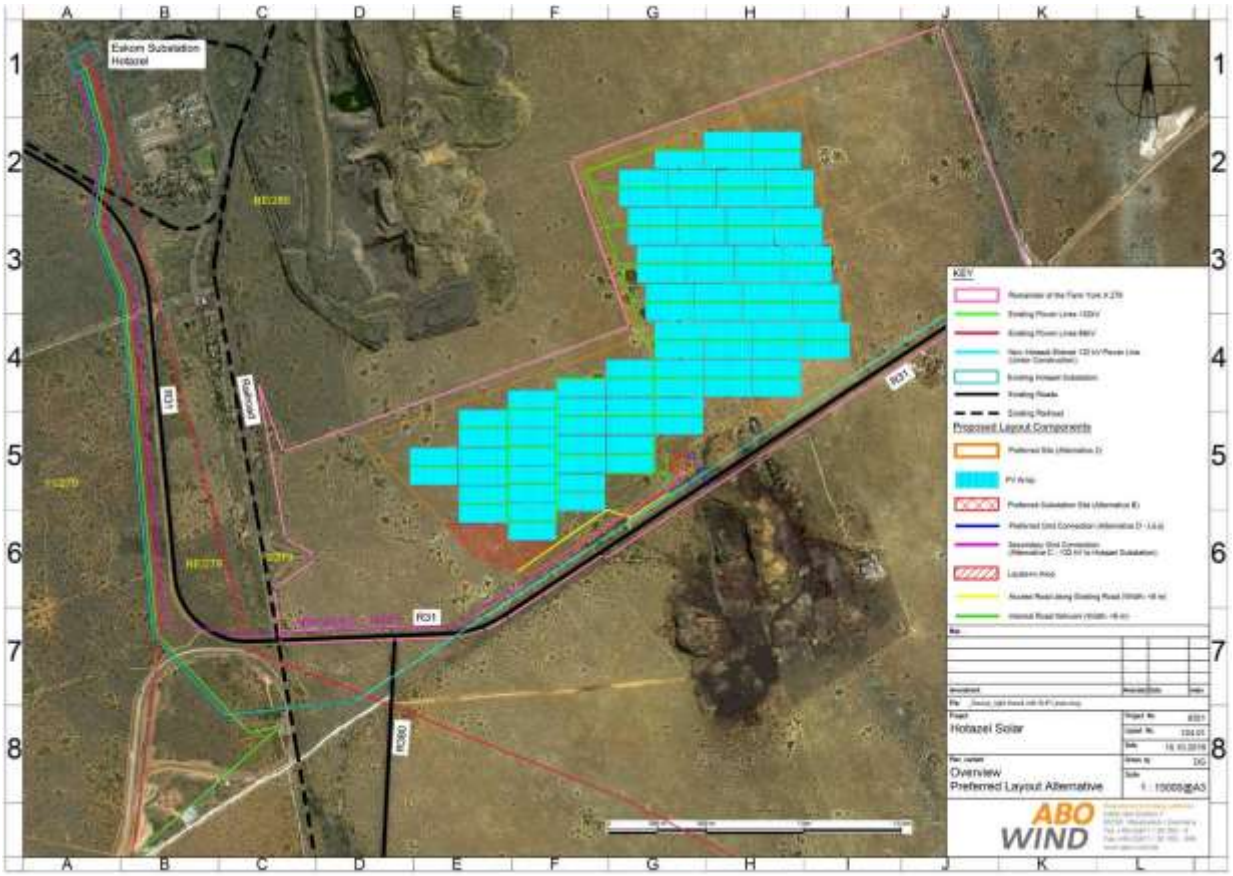

Figure 7: Detailed option of Layout Alternative 2 (Source: ABO WIND, 2018)

6 HISTORICAL BACKGROUND

From a colonial perspective the farm York A was first surveyed in 1913 and measured 2488 Morgen and 161 Square Roods (Figure 8). Unfortunately no historic mapping for the area exists.

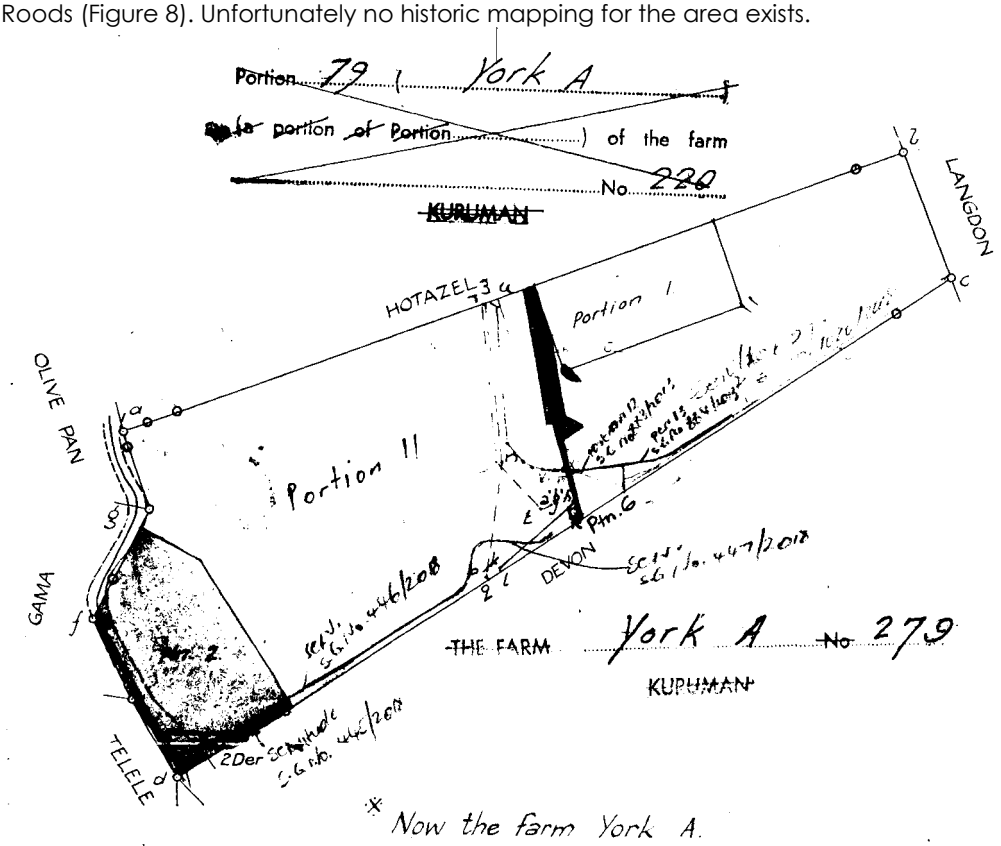

Figure 8: SG Diagram 1306/1914 representing the Farm York A

The first travellers through this area were missionaries, hunters and traders. The area was only sparsely settled until the 20th century, when the farms were surveyed. York 279 as well that of the neighbouring farm of Devon 277, was surveyed in 1914 (Orton 2016). He notes that the farm Hotazel was acquired by SA Manganese, and they were responsible for setting up a small town comprising 30 houses and some offices and stores. The official opening of the mine was in 1959.

The heritage of the colonial settlement includes farmsteads, shed, kraals, dams, wells etc. According to Küsel (2009), the first geologist to survey this portion of the Northern Cape was Dr AW Rogers of the Geological Commission of the Cape Colony in 1906. He described the small hill called Black Rock and reported the presence of manganese. The Associated Manganese Mines of South Africa acquired the manganese outcrop in 1940 and commenced mining. Much of the current heritage of the area relates to the history of manganese mining. Küsel (2009) has proposed that due to its significance in the history of manganese mining in South Africa, Black Rock should
be proclaimed a National Heritage Site.

6.1 Cemeteries

Küsel (2009) has reported on cemeteries near the mine of Black Rock representing the graves of black mine workers. During their walkdown of the upgrade to the 66kV powerline from Hotazel to Mothibistat substation, PGS Heritage (2016) reported a number of graves but these were all situated to the south of the study area, along the "Moffat-Valley alignment". Cemeteries are likely to be found in proximity to villages and homestead.

Nilssen (2018) concludes that several of the heritage studies around Hotazel have commented on the almost total absence of heritage resources. Surveys have revealed that there are large tracts of land where virtually no archaeological material occurs (Orton 2016, 2017; Van Schalkwyk 2010, 2016).

7 HERITAGE RESOURCES AND ISSUES

7.1 Landscape Character

7.1.1 Cultural landscape context

The term "*cultural landscape*" refers to the imprint created on a natural landscape through human habitation and cultivation over an extended period of time. While the Cape has been inhabited for many hundreds of thousands of years (pre-colonial history) prior to Western settlement (colonial history), the nomadic lifestyles of early inhabitants are not always as evident within the landscape as the significant imprints made by humans during the last two – three hundred years and more.

Unlike ancient landscapes in parts of the world where environmental conditions allowed more intensive cultivation over periods much longer than locally have allowed natural and cultural components of the landscape to become interwoven, landscape components which the Northern Cape have not yet developed in such a manner.

The fact that natural and cultural landscape components in the region is therefore more distinguished means that the cultural landscape is likely to be very vulnerable to the cumulative impact of inappropriate large-scale development.

Ultimately, definition of a cultural landscape can be informed by the following elements, weighed through professional opinion, public values and statutory (legal) framework:

1. Natural Landscape
2. Public Memory
3. Social History
4. Historical Architecture
5. Palaeontology

The site may be described as forming part of a typical Karoo landscape and defined by flat and wide open spaces overgrown by sparse, low-growing vegetation. From a Pre-Modern perspective, the site formed part of an area mostly used for small stock farming and so, modern man-made features noted on the site included e.g. shallow pans, fences, wind pumps and cement water reservoirs related to said land use. A railway line, numerous powerlines also traverses the site.

7.2 Visual Impact Assessment (Visual Resource Management Africa CC, 2018)

The Visual Impact Assessment (VIA) considers the anticipated visual impacts related to the proposal and assesses the implications of the possible site alternatives as transposed from said report below (with permission from author). This report is attached as **Annexure 3.**

7.2.1 PV and Road Infrastructure

The Nature of the Visual Impact of both the PV alternatives is rated ***Negative***. The proposed PV landscape has the potential to generate strong levels of colour, form, texture and line contrast to the existing rural landscape.

7.2.2 Power Line Infrastructure

The Nature of the Visual Impact of the proposed power line routings is rated Negative, as all these landscape modifications will require the removal of vegetation, or have the potential to be visually discordant with the surrounding rural landscape to some degree. Although the power lines do follow an existing Eskom power line routing, the multi-lines will create a visual massing effect which will degrade the local landscape character.

As the visual significance of the proposed PV facility is unlikely to result in significant degradation of the surrounding visual resources, the conclusion of this visual impact assessment is that the PV project is authorised with mitigation. Due to the partial overlap of the two proposed sites, and the location of the sites adjacent to each other with similar landscape character, the visual impact ratings for the two options are very similar. However, there is a marginal visual preference for PV Option 2. Although this portion of the site has more *Acacia* tree species, the more westerly location reduces the potential for intervisibility with the Juwi PV plant proposed to the south of this site.

Based on the VRM rating criteria, the overall scenic quality of the site is rated as ***Medium to Low.*** This was mainly due to the close proximity of the study area to the adjacent Intertek Mine, which degrades the local visual resources. Adding value to the scenic quality is the Bushveld vegetation. The botanical specialist has identified that *Acacia haematoxylon* and *Acacia erioloba* are located on site. Although protected tree species, the flora scoping report findings indicate that the habitat loss "is not seen as being highly significant for this species" (Todd, 2018). As these are protected trees, and do add to the local Bushveld sense of pace, the layout should be designed so as to minimise the impact on these trees. However, due to the relatively remote location of the site and the close proximity to existing mining landscapes, receptor sensitivity is rated as ***Medium to Low.***

There are also other PV projects proposed in the vicinity (south of the R31 Road) that will result in some inter-visibility. In these instances along the R31 road, the change to the rural sense of place in the landscape can be dominated by the PV landscape. However, the R31 has moderate to low levels of scenic quality due to the old mine site also located within the receptor viewshed, and none of the visual resources are utilised for eco-tourism activities where landuse conflict can occur. Due to the Bushveld trees surrounding the proposed PV development sites in the area, inter-visibility potential is locally contained. Retaining a buffer along the road for the existing Bushveld trees will assist in breaking up clear views of the PV panels, and further tree growth within this buffer zone would further reduce visibility and intervisibility with other PV projects proposed in the vicinity. From a cumulative visual impact perspective, PV Option 2 is visually preferred. This is due to the location of this layout further to the west, there is less direct intervisibility due to the staggered nature of the PV locality with respect to the views from the R31 Road receptors. The existing trees located on the southwestern extent of the property will continue to screen visibility, and with mitigation and retaining some of the trees along the R31, the potential for intervisibility would be further reduced. Due to the rural setting, lights at night also need to be designed to reduce light spillage.

Due to the advantages of reducing multi-lines, the direct LILO option is the visually preferred, with a slight visual preference for Selfbuild Grid Alternative A due to the shorter length.
However, as the routes follow an existing Eskom Power Line routing through a landscape that does include mining landscape modifications, the impact of the proposed routings is moderated and negative cumulative visual effects are likely to be of low significance. Selfbuild Substation Alternative B is also partially visually screened by existing bushveld vegetation adjacent to the road, closer to the existing farmhouse structure and opposite to the truck wash area, all which influence the sense of place and increase the visual absorption capacity, thus reducing the visual intrusion of these landscape modifications.

7.3 Archaeological Impact Assessment (Dr. L. Webley, Madelon Tusenius, 2018)

7.3.1 Archaeological Field Survey

Lita Webley and Madelon Tusenius undertook an archaeological survey of the Hotazel Solar facility and associated powerlines over a four-day period in October 2018. This is in spring, but due to the arid environment, the season has little impact on plant cover and therefore visibility. As far as possible, Webley and Tusenius walked transects of the study area according to standard archaeological practice. The *Archaeological Impact Assessment* is attached hereto as **Annexure 4**.

7.3.2 Results of the Archaeological Field Survey

Solar Facility

The survey identified a spread of black, iron rich material lying above the red aeolian sands along the R31 road, and under the existing 132 kV and 66 kV powerlines which run along the road, which proved to be Banded Ironstone Formation or BIF. It was explained that the material, together with thick calcrete deposits which overly the manganese in the mining areas, are removed and stored on spoil heaps. Both the calcrete and BIF are used as a base for the construction of roads and the railway line in the area.

Also, a total of six (6) stone artefacts were identified in two clusters, in loose Aeolian sands, on the track between the farmhouse of York and the worker's cottage. According to John Almond (see Palaeontology Desktop Study) the artefacts are "most likely to be a Precambrian iron ore of some sort and may be derived from a BIF outcrop area.

Powerline Survey

The proposed 132 kV powerline which will connect the onsite Substation A or Substation B with the substation at Hotazel, represented by the purple line, will run in parallel with an existing 132 kV Eskom line (represented by the blue line). No archaeological material was observed along the route of the proposed mine. The terrain is identical to that assessed for the solar facility.

7.3.3 Impacts to Archaeology on Alternative 2

The survey identified a small scatter of banded ironstone artefacts (of unknown affiliation), near the York farmhouse. They fall outside the study area. It has been concluded that they are not in situ, and that they have been introduced from elsewhere. Their origins are unknown, but they were probably brought in with the stock pile of BIF which is found on the site. They have been assigned a "Generally Protected C" grading, which means that they may be destroyed. No further recording is required.

7.3.4 Impacts on Colonial Period Heritage

The 1:50 000 maps and Google imagery confirm that there are no farm buildings or structures on the land identified for the solar facility. The farmhouse of York A 279, located on the R31, is of recent history and no historical archaeological material was identified during the survey. It is not anticipated that there will be any impacts to the Built Environment.

Figure 9: The route of the proposed 132 kV powerline, from York A 279, across the railway line and R31, through the property of KMR and Municipal land, connecting with the Hotazel substation, a distance of 6km in total.

7.3.5 Impacts on Cemeteries and Graves

No isolated graves or cemeteries were identified during the survey. However, the possibility of unmarked archaeological and/or historical graves cannot be excluded. The landowner was interviewed with respect to graveyards on the property and confirmed that none were present.

7.3.6 Impacts of Powerlines and Access Roads

Potential impacts caused by a 132kV powerline and the power line access roads are likely to be limited and local. The access road required for a 132kV powerline is likely to be a 'two-track' which generally only requires limited physical disturbance of the ground surface. Due to the very loose sands in the area, Eskom as resorted to distributing a layer of BIF on the surface which will protect any archaeological material which may occur beneath the soil surface.

7.3.7 Recommendations

Indications are that in terms of archaeological heritage, impacts to either Alternative 1 or Alternative 2 are expected to be negligible. The study area is considered to be of very low heritage significance. It is recommended that the project be authorised with the following conditions included in the EMPr:

- If during ground clearance or construction, any archaeological material or human graves are uncovered, work in that area should be stopped immediately and the ECO should report this to SAHRA (Tel: 021 462 4502). The heritage resource may require inspection by the heritage authorities and it may require further mitigation in the form of excavation and curation in an approved institution.

7.4 Recommended Exemption from further Palaeontological Studies (Natura Viva, Dr. J. Almond,2018)

Below is an extract from recommended exception report (Almond, 2016), presented here as **Annexure 5**.

The overall palaeontological sensitivity of the entire Hotazel PV Facility project area, including both site options as well as the various 132 overhead transmission line corridor options to Hotazel Substation, is assessed as LOW. Small pockets of locally HIGH sensitivity might occur along drainage lines and around any pans but these are not anticipated on the basis of satellite imagery. Plio-Pleistocene calcretised gravels and finer-grained alluvium in these last settings may contain mammalian remains such as bones, teeth and horn cores in addition to abundant, low-diversity trace fossil assemblages.

It is concluded that the overall impact significance (pre-mitigation) of the proposed Hotazel PV Facility is VERY LOW (-). This assessment applies equally to the core PV Facility project area on the Remaining Extent of Farm York A 297 itself, as well as the proposed transmission lines and other infrastructure (internal road network, access road from the R380, IPP substation, perimeter fencing *etc*). There is no preference on palaeontological heritage grounds for either one of the two solar facility site or substation options or any particular transmission line route options among those under consideration.

8 HERITAGE INFORMANTS AND INDICATORS

According to the requirements of Section 38(3) of the NHRA, land use planning and EIA processes must be informed by and incorporate heritage informants and indicators. It is the purpose of this Section to define heritage informants and indicators pertaining to the way in which heritage resources must be incorporated into the overall layout and design of the proposed development as read in conjunction with preceding Sections.

Cultural landscape issues

From a regional and natural landscape perspective, the proposed development site forms part of a highly-transformed landscape altered through mining activities as well as high concentration of proposals for development of several renewable energy (solar) facilities. While the proposal would relate to a landscape modification, we do not consider that it would alter any natural or cultural landscape of cultural significance.

Visual-spatial issues

Recommendations reflected in the VIA, as summarised in Section 7.2 of this Integrated HIA report must be adhered to.

Archaeology

All recommendations contained in AIA, as summarised in Section 7.3 of this Integrated HIA report must be adhered to.

Palaeontology

All recommendations contained in PIA, as summarised in Section 7.4 of this Integrated HIA report must be adhered to.

9 PUBLIC PARTICIPATION

Due to the fact that there are no known local heritage conservation bodies in the Hotazel area (registered as such with the relevant provincial heritage resources authority in terms of Section 25 of the National Heritage Resources Act, 1999 (Act 25 of 1999)), the Public Participation Process (PPP) for this HIA will be coordinated with that of the EIA Process facilitated by *Cape Environmental Assessment Practitioners (Pty) Ltd* (Cape EAPrac) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), so as to solicit possible heritage-related comments with relation to the proposed development.

10 LIMITATIONS AND ASSUMPTIONS

This report is limited to the assessment of the potential impact of the proposed facility on heritage resources found on/ within the proximity of the development site as defined in this report. There is a limitation in terms of understanding the cumulative impacts of the project when taken in conjunction with other similar future development projects in the surrounding area.

11 RECOMMENDATIONS

Having regard to the above assessment, it is recommended that:

- This report fulfils the requirements of an Integrated Heritage Impact Assessment (HIA);
- That the recommendations below be incorporated into the proposed development and that the Department of Environmental Affairs be informed accordingly:

	Recommended Conditions of Approval: Visual Impact Assessment
VIA1	Bushveld trees that do not create shade or fire risk, between the proposed PV site and the R31 Road, should be retained for visual intervisibility screening.
VIA-2	The laydown area should not be sited directly adjacent to the R31 Road
VIA-3	Topsoil from the footprints of the road and structures should be dealt with in accordance with EMP.
VIA-4	The buildings and battery storage facility should be painted a grey-brown colour.
VIA-5	Fencing should be simple, diamond shaped (to catch wind-blown litter) and appear transparent from a distance. The fences should be checked on a monthly basis for the collection of litter caught on the fence.
VIA-6	Signage on the R31 should be moderated.
VIA-7	Lights at night have the potential to significantly increase the visual exposure of the proposed project, therefore it is recommended that mitigations be implemented to reduce light spillage (refer to appendix for general guidelines).
VIA-8	Control of lights at night to allow only local disturbance to the current dark sky night landscape (refer to appendix for general guidelines).
VIA-9	Light spillage management to ensure that security lighting at night is not visually intrusive. Lighting for security should be downward and inward facing and not include overhead security lighting options.
VIA-10	Continued erosion control and management of dust.
VIA-11	All structures should be removed and where possible, recycled.
VIA-12	Building structures should be broken down (including foundations).
VIA-13	The rubble should be managed according to NEMWA and deposited at a registered landfill if it cannot be recycled or reused.
VIA-14	All compacted areas should be rehabilitated according to a rehabilitation specialist.
VIA-15	Monitoring for soil erosion should be undertaken on a routine basis.
	Recommended Conditions of Approval: Archaeological Impact Assessment
AIA-1	Indications are that in terms of archaeological heritage, impacts to either Alternative 1 or Alternative 2 are expected to be negligible. The study area is considered to be of very low heritage significance.
AIA-2	It is recommended that the project be authorised with the following conditions included in the EMPr: • If during ground clearance or construction, any archaeological material or human graves are uncovered, work in that area should be stopped immediately and the ECO should report this to SAHRA (Tel: 021 462 4502).
AIA-3	The heritage resource may require inspection by the heritage authorities and it may require further mitigation in the form of excavation and curation in an approved institution.
	Recommended Conditions of Approval: Palaeological Impact Assessment
PIA-1	The Environmental Officer (EO) responsible for the development must remain aware that all sedimentary deposits have the potential to contain fossils and he/she should thus monitor all deeper (> 1 m) excavations into sedimentary bedrock for fossil remains on an on-going basis.

PIA-2	During maintenance and servicing of infrastructure, if excavation is required, it shall be limited to the disturbed footprint as far as practicable. Should bulk works exceed the existing disturbed footprint, SAHRA shall be notified.
PIA-3	If any substantial fossil remains (*e.g.* vertebrate bones, teeth) are found during construction SAHRA should be notified immediately (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone : +27 (0)21 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that appropriate mitigation (*i.e.* recording, sampling or collection) by a palaeontological specialist can be considered and implemented, at the developer's expense.
PIA-4	A chance-find procedure should be implemented so that, in the event of fossils being uncovered, the EO/Site Engineer will take the appropriate action, which includes: • Stopping work in the immediate vicinity and fencing off the area with tape to prevent further access; • Reporting the discovery to the provincial heritage agency and/or SAHRA; • Appointing a palaeontological specialist to inspect, record and (if warranted) sample or collect the fossil remains; • Implementing further mitigation measures proposed by the palaeontologist; and • Allowing work to resume only once clearance is given in writing by the relevant authorities.

PERCEPTION Planning
11th February 2019

SE DE KOCK
Hons (TRP) EIA Mgmt (IRL) PrPln PHP

GJR NARAINNE
BAS(UCT) MCRP (UCT) CHP