



24 June 2022

Ms Karen Jodas
Savannah Environmental (Pty) Ltd
Email: karen@savannahsa.com

Dear Ms Jodas,

THE EXTENSION OF VALIDITY TO THE EA - Vaal River Solar 1, 2, 3 and 4 PV Facilities and grid connection infrastructure (as amended) on a Site near Orkney, North West Province (previously called the Proposed Kabi Vaalkop Solar PV Facility)

SAHRIS Case 57

The proposed development of the Vaal River Solar PV Facilities, consisting of 3 PV Facilities developments and associated grid and powerline infrastructure, received Environmental Authorisation (EA) for a site near Orkney in the North West Province (see the table below) on 27 June 2012.

Table of project components

| Project Title | DFFE Reference Number | Applicant | Affected properties |
|---|------------------------------|------------------------------|---|
| Vaal River Solar 2 PV Facility | 12/12/20/2513/1 | Vaal River Solar 2 (Pty) Ltd | Farm Vaalkop, Portion 3 of Farm Vaalkop and Portion 200 of the Farm Noitgedacht |
| Vaal River Solar 1 PV Facility | 12/12/20/2513/2 | Vaal River Solar 1 (Pty) Ltd | Portion 3 of Farm Vaalkop |
| Vaal River Solar 3 PV Facility | 12/12/20/2513/3 | Vaal River Solar 3 (Pty) Ltd | Portion 200 of the Farm Noitgedacht |
| Substation and 132kV power line for Vaal River Solar PV Facility projects | 12/12/20/2513/4 | Kabi Solar (Pty) Ltd | Portion 3 of Farm Vaalkop and Portion 4 of Farm Modderfontein |

The Environmental Authorisation for the Vaal River Solar PV Facility projects lapses on 10 October 2022. In this regard a Part 1 Amendment Application is being undertaken to extend the validity of the Environmental Authorisation.

The Applicant is requesting the following Amendments for the PV:

- To amend the authorised solar PV capacity with no adjustment to the PV panel height and development footprint of the facility from that as authorised.
- Inclusion of BESS into the project description.
- An extension of the validity of the Environmental Authorisation.

The Applicant is requesting the following Amendments for the grid connection:

- An extension of the validity of the Environmental Authorisation.



As per the Environmental Authorisation granted on the 10 October 2012, as amended, the following is considered within the motivation report and specialist assessment letters to confirm the impacts associated with the extension of validity of the Environmental Authorisation beyond 10 years and a comparison of the site conditions now vs the initial findings at the PV site during the EIA (2012), including any additional recommendations from the specialists for the development of the wind energy facility.

To this end, CTS Heritage has been requested to make a statement regarding the proposed extension of the validity of the EA for another 10 years. The following sections summarise the findings of the previous heritage assessments completed for this and other relevant projects.

Built Environment & Cultural Landscapes

The development area is located in peri-urban farms just outside the towns of Orkney (North West) and Viljoenskroon (Free State). The town of Orkney was established in 1940 at the junction of the various railway lines. It was named after the old gold mine opened by Thomas Leask, who came from the Orkney Islands, in 1880 (SESA 1973 in Van Schalkwyk 2021). Viljoenskroon is a maize and cattle farming town located in the Free State province of South Africa. It was named after the original farm owner J. J. Viljoen and his horse Kroon. The town was laid out in 1921 on the farm "Mahemskuil" and became a municipality in 1925. A number of large gold and diamond mines are also located in between the three solar PV sites, namely Taulekoa Mine next to Goedgenoeg 433, Kopanong Gold Mine next to Pretorius Kraal 53 and Great Nologwa Mine next to Groot Vaders Bosch 592. Ruins of or intact avenues of trees, historical farmsteads and farm labourer's cottages may potentially be found within the proposed development areas. The cultural landscape is characterised by agriculture with abrupt transitions into extremely heavy industrial areas in and around the mining compounds.

In his assessment of a nearby PV Facility, Van der Walt (2016 SAHRIS ID 385181) noted that no scenic significant cultural landscapes or viewsapes were noted during the fieldwork within the area. Since 2012, the area has become more developed and as such, there are no heritage concerns in this regard.

Archaeology

Archaeological sites spanning the Earlier, Middle and Later Stone Age have been found in the region despite the extensive agricultural transformation of the area. As part of the original process followed for the proposed development, Coetzee (2012) notes that "the cultural landscape around Klerksdorp is not only complex but also has a deep time depth. The area is multi-layered with several compounding aspects: The town and surrounding areas have a long period of development and western occupation; Several features and events associated with the Second Boer War are known in the area; Iron Age settlements occur in the area along or near the



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Vaal River and Stone Age sites (including Rock Art) are known in the area.

Despite the general heritage sensitivity of the broader area identified above, Coetzee (2012) identified no heritage resources of significance within the area proposed for the Vaal River Solar PV Facilities and their associated grid connection.

A site verification field inspection was undertaken by Dr. Presnyakova in June 2022, to determine if the landscape has been subject to any changes that may impact the findings outlined in Coetzee (2012), such as the exposure of new sensitive subsurface sediments/deposits that were not visible during the original survey. Dr. Presnyakova determined that no archaeologically relevant changes are evident based on the verification survey that was undertaken, and it is unlikely that previously unidentified heritage resources will now be evident within the area proposed for development. The track paths and site photographs resulting from this site verification are included below as Figures 1 to 12.

Palaeontology

According to the SAHRIS Palaeosensitivity Map the development sites are underlain by sediments Very High fossil sensitivity. The solar PV sites are underlain by sediments of the Malmani subgroup (Vmd) of the Chuniespoort Group of sediments.

According to the PIA completed by Maford (2012) for this project, “The rocks here are dolomite and chert and are between 2640 and 2500 Million years old (Eriksson et al. 2006). The rocks are too old to contain vertebrate and plant fossils (Plumstead, 1969; McCarthy and Rubidge, 2005; Taylor et al. 2009). The dolomites may contain traces of unicellular algae that were involved in their formation but this is unlikely. In the unpublished catalogues housed in the Bernard Price Institute (now the Evolutionary Sciences Institute) at the University of the Witwatersrand, there is no record of fossils from this location.

As far as can be ascertained, the above assessment of the overall palaeontological sensitivity of the development area remains applicable.

During the site verification process, stromatolites were identified within the area proposed for the Vaal River Solar development (Figures 13 and 14). These kinds of stromatolites are known to occur within the Chuniespoort Group - as per the SAHRA Fossil Heritage Browser, the Chuniespoort Group is known to conserve a “Range of shallow marine to intertidal stromatolites (domes, columns *etc*), and organic-walled microfossils”. As such, it is recommended that a Chance Fossil Finds Procedure be added to the EMPr for the proposed development (Attached as Appendix 1).



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Statement on environmental processes impacting on archaeological and palaeontological heritage

Archaeological and palaeontological heritage resources reflect the environments of the deeper past and are unlikely to change significantly in as short a geological time span as 10 years. Some changes to heritage resources may result from processes of erosion and deflation but, in this particular ecological setting, would likely represent heavily disturbed contexts and consequently would be of limited scientific/heritage value.

Validity Extension

In light of the above, there is no heritage objection to granting the extension to the validity to develop the Vaal River Solar PV Project 1, 2, 3 and 4 based on the current site conditions on condition that the relevant recommendations included in the previous heritage assessments conducted are implemented, including the walkdown assessment of the Final Layout and that the attached Chance Fossil Finds Procedure (Appendix 1) is added to the EMPr.

Jenna Lavin

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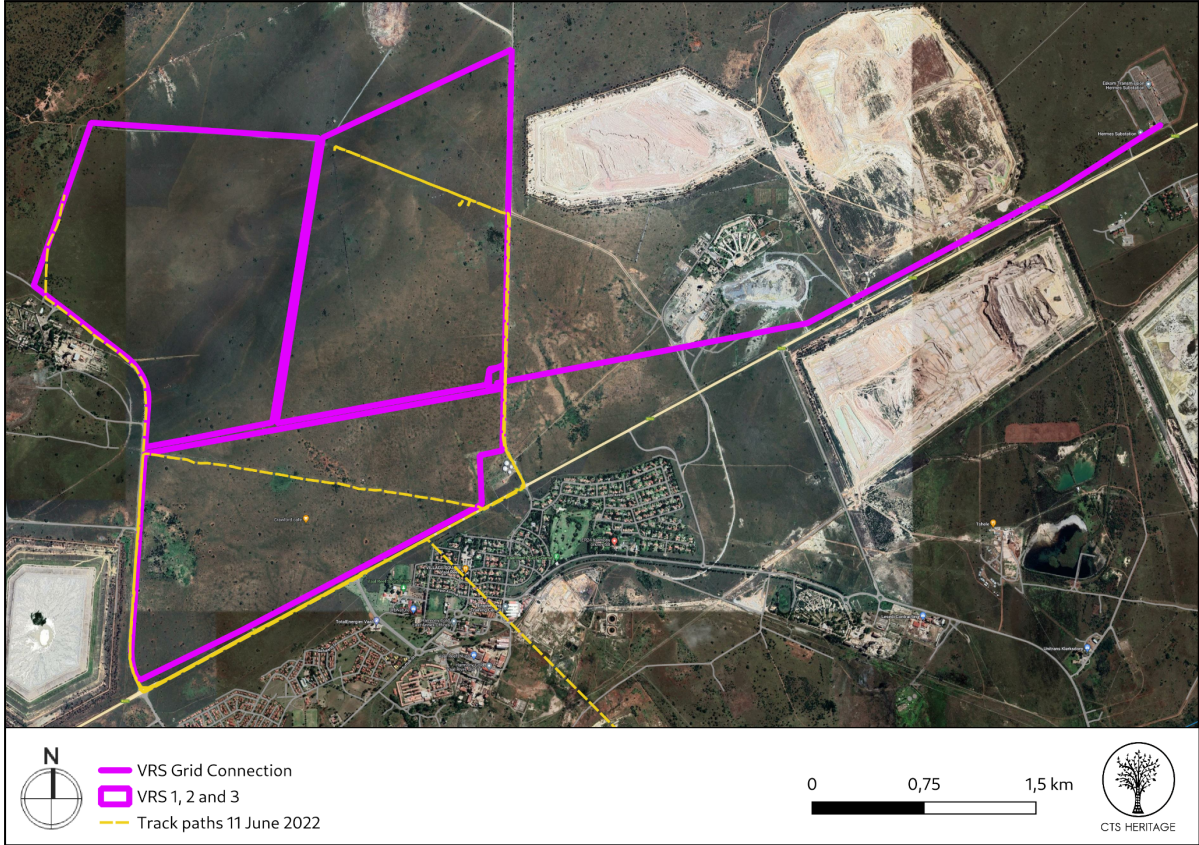


Figure 1: Track paths of site verification completed on 11 June 2022



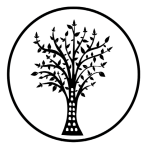
Figure 2: Image of development area taken 11 June 2022



Figure 3: Image of development area taken 11 June 2022



Figure 4: Image of development area taken 11 June 2022



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Figure 5: Image of development area taken 11 June 2022



Figure 6: Image of development area taken 11 June 2022



Figure 7: Image of development area taken 11 June 2022



Figure 8: Image of development area taken 11 June 2022



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Figure 9: Image of development area taken 11 June 2022



Figure 10: Image of development area taken 11 June 2022



Figure 11: Image of development area taken 11 June 2022



Figure 12: Image of development area taken 11 June 2022



Figure 13: Image of development area taken 11 June 2022

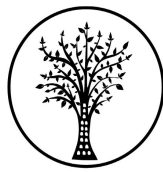


Figure 14: Image of development area taken 11 June 2022



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Appendix 1: Chance Fossil Finds Procedure



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CHANCE FINDS OF PALAEOLOGICAL MATERIAL

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

Introduction

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

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

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

Training

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

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Actions to be taken

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

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

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

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



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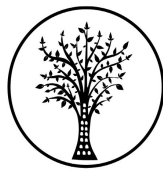
- Exposed finds must be stabilised where they are unstable and the site capped, e.g. with a plastic sheet or sand bags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation.
- If the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

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

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

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