



# PALAEONTOLOGICAL SITE VERIFICATION REPORT

## Seelo Alpha Solar PV

(Part of the Seelo Solar PV Cluster)

### CONTENTS

CONTENTS .....	1
1. INTRODUCTION .....	1
2. TECHNICAL DETAILS FOR THE PROPOSED DEVELOPMENT .....	4
3. SITE SENSITIVITY VERIFICATION METHODOLOGY .....	5
4. OUTCOME OF SITE SENSITIVITY VERIFICATION .....	5

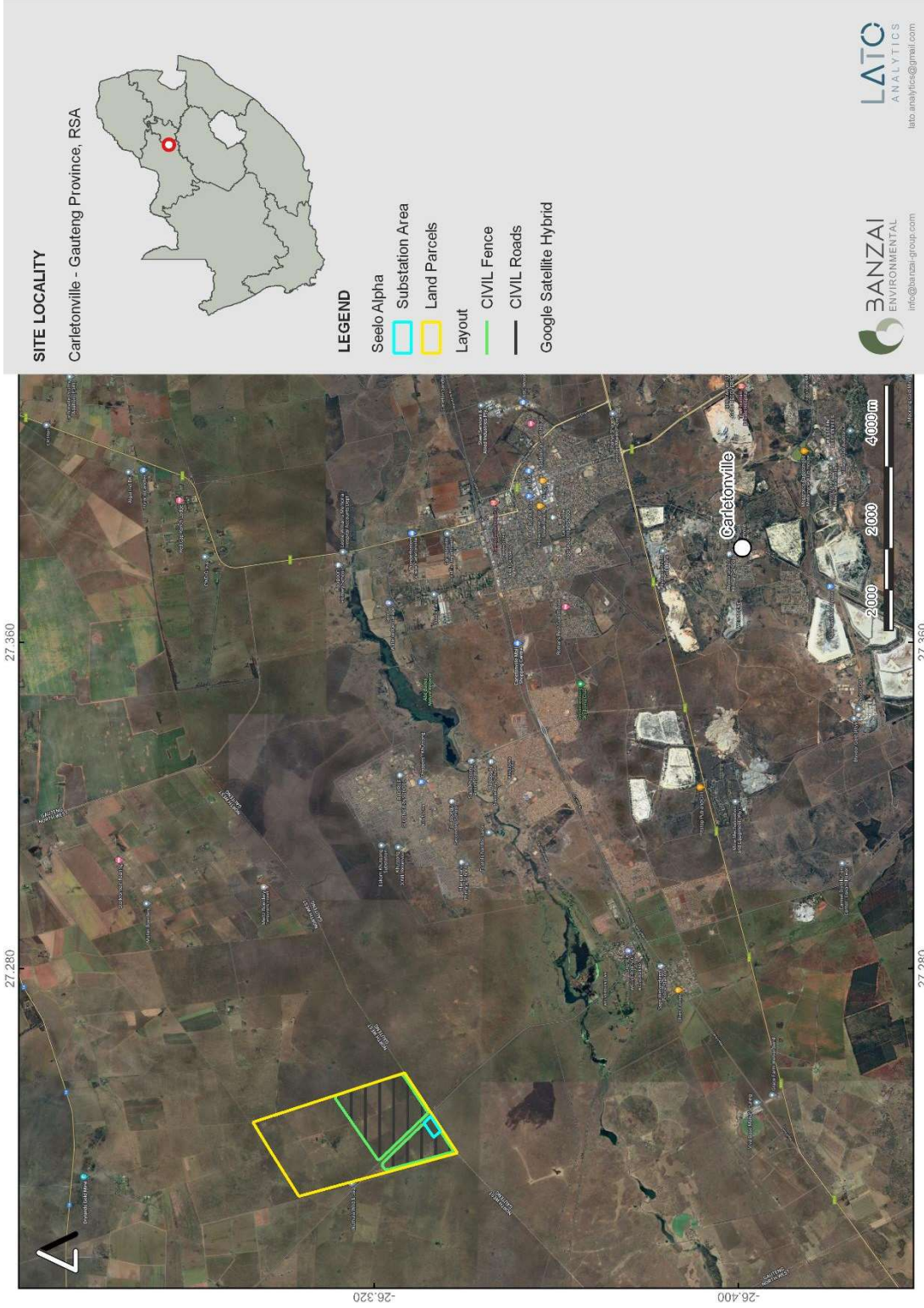
### 1. INTRODUCTION

Seelo Alpha Solar PV (RF) (Pty) Ltd (the Applicant) has proposed the development of the Seelo Alpha 240MW Solar PV and Battery Energy Storage Systems (BESS) Project near the town of Carletonville, in the North West Province (the “Project”). The electricity generated by the Project will be injected into the existing Eskom 132 kV distribution system. The Applicant intends to bid for the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) bid windows.

The Project is located in the most eastern part of the North West Province (at the boundary between North West and Gauteng) and falls within the Dr Kenneth Kaunda District Municipality (DKKDM) and the JB Marks Local Municipality (JBMLM). The site is located approximately 13km to the north-west of the town of Carletonville. The D331 road bisects the site.

The property earmarked for the Project covers a combined area of approximately 898 ha, of which the buildable area determined by the engineering team is approximately 355 ha.

Table 1: Details of the affected properties	
Farm Name	21-digit Surveyor General (SG) Code
Portion 2 of Farm 96 (Rooipan)	T01Q0000000009600002



**Figure 1: Regional context of the Seelo Alpha Solar PV development.**







## 2. TECHNICAL DETAILS FOR THE PROPOSED DEVELOPMENT

### Components of the Proposed Solar PV Plant

The Project consists of the following systems, sub-systems or components (amongst others):

- PV panel arrays, which are the subsystems which convert incoming sunlight into electrical energy;
- Mounting structures to support the PV panels;
- On-site inverters to convert DC to facilitate AC connection between the solar energy facility and electricity grid;
- BESS);
- IPP substation;
- Eskom switching substation<sup>1</sup>;
- Cabling between the Project's components, to be laid underground (where practical);
- Administration Buildings (Offices);
- Workshop areas for maintenance and storage;
- Temporary and permanent laydown areas;
- Internal access roads and perimeter fencing of the footprint;
- High Voltage (HV) Transformers; and
- Security Infrastructure.

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) Environmental Impact Assessment (EIA) Regulations [4 December 2014, Government Notice (GN) R982, R983, R984 and R985, as amended), various aspects of the proposed development may have an impact on the environment and are considered to be listed activities. These activities require environmental authorisation (EA) from the Competent Authority (CA), namely the Department of Small Business Development, Tourism and Environmental Affairs (DESTEA), prior to the commencement thereof.

In accordance with GN 320 of 20 March 2020 and GN 1150 of 30 October 2020<sup>2</sup> (i.e., "the Protocols") of the NEMA EIA Regulations of 2014 (as amended), prior to commencing with a

---

<sup>1</sup> The dedicated grid connection for the proposed Project which includes a 132/33 kV switching substation which does not form part of the current application for EA.

<sup>2</sup> GN 320 (20 March 2020): Procedures for The Assessment and Minimum Criteria for Reporting on Identified Environmental Themes in terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998, when applying for Environmental Authorisation



specialist assessment, a site sensitivity verification must be undertaken to confirm the current land use and environmental sensitivity of the proposed project area as identified by the National Web-Based Environmental Screening Tool (i.e., Screening Tool). Elize Butler as Palaeontology Specialist have been commissioned to verify the sensitivity of the Seelo Alpha Solar PV and associated infrastructure (as part of the Seelo Solar PV Cluster), under these specialist protocols.

### 3. SITE SENSITIVITY VERIFICATION METHODOLOGY

The Palaeontology Sensitivity Verification was undertaken by the following methodology:

- The site sensitivity is established through the National Environmental Web-Based Screening Tool
- The Site is mapped on the relevant Geological Map to determine the underlying geology of the development
- Then the site is mapped on the South African Heritage Resources Information System (SAHRIS) PalaeoMap, and the Sensitivity of the proposed development established.
- Other information is obtained by using satellite imagery and
- Palaeontological Impact Assessments and Desktop Assessments of projects in the same area are studied.
- A comprehensive site-specific field survey of the development footprint for the combined projects was conducted on foot and motor vehicle by Banzai Environmental in March 2023.

### 4. OUTCOME OF SITE SENSITIVITY VERIFICATION

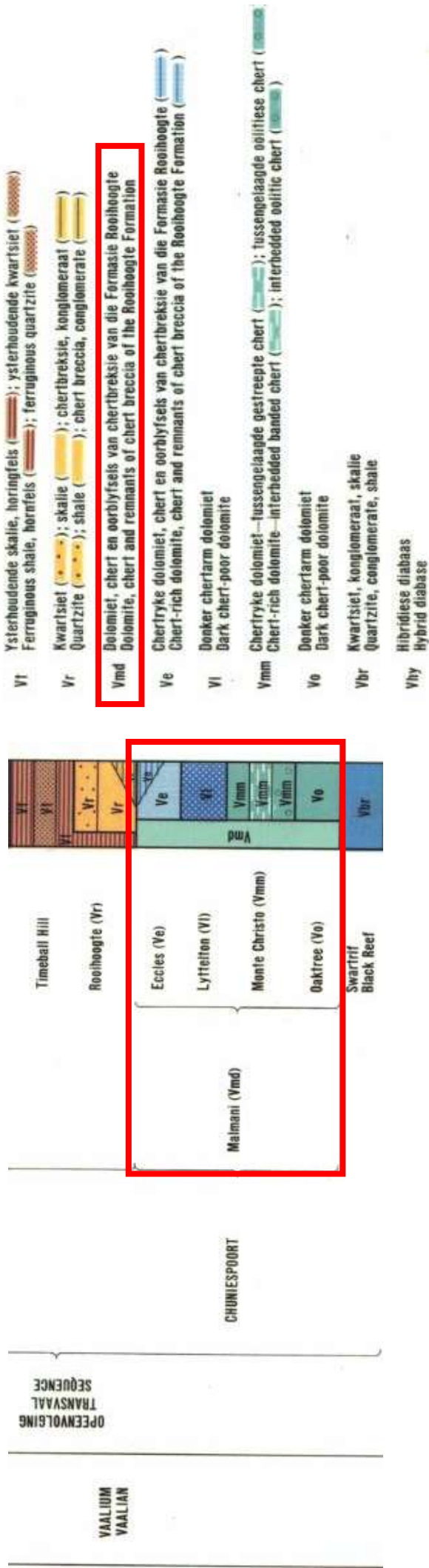
The Seelo Alpha Solar PV (as part of the Seelo Solar PV Cluster), near Carletonville in the North West Province State is depicted on the 1: 250 000 West-Rand 2626 (1986) Geological Map (Council for Geosciences, Pretoria) (**Figure 3, Table 1**). This map indicates that the proposed development is completely underlain by the Precambrian dolomites and associated marine sedimentary rocks of the of the Malmani Subgroup (Vmd, light blue; Chuniespoort Group, Transvaal Supergroup).





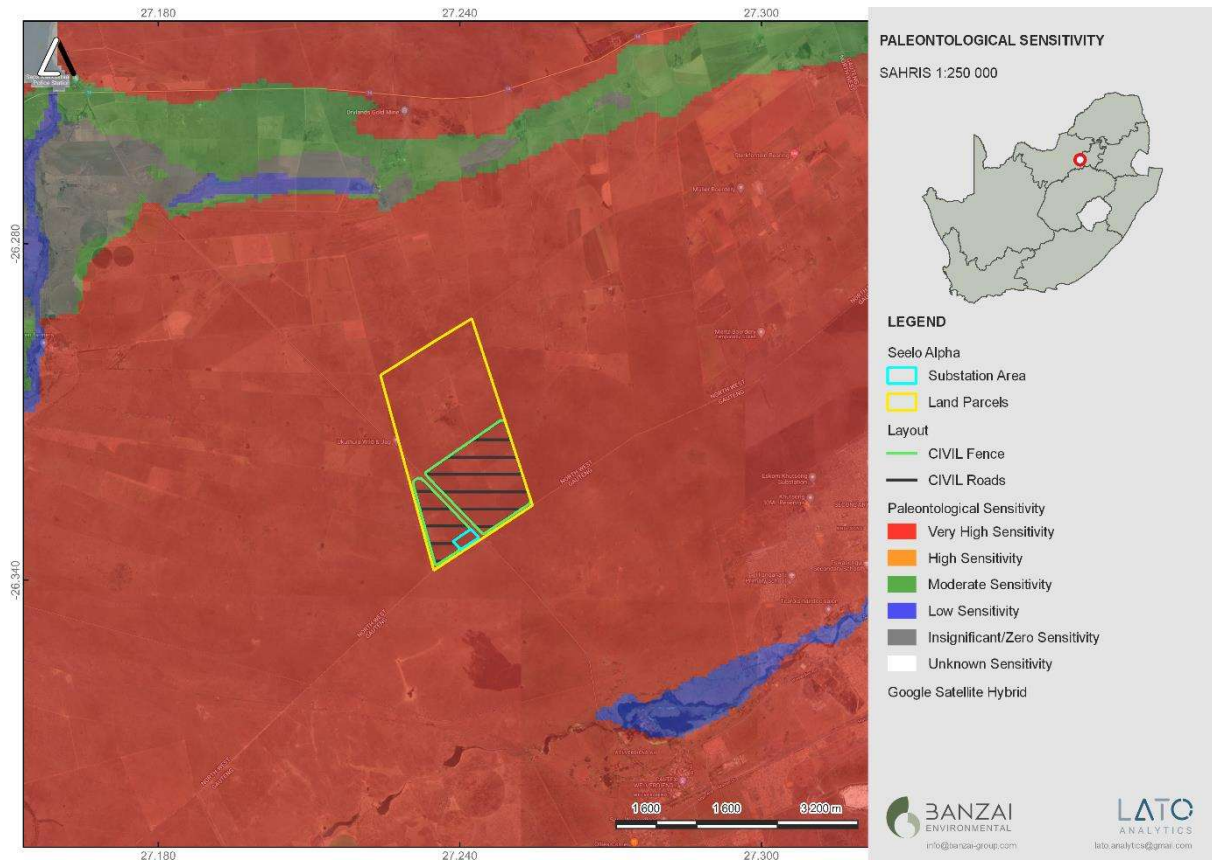
**Table 1: Legend of the 2626 West-Rand (1986) Geological Map (Council for Geoscience, Pretoria).**

Relevant sediments are indicated in a red square





The SAHRIS Palaeomap indicates that the Palaeontological Sensitivity of the proposed development is underlain by sediments with a Very High (red) Palaeontological Sensitivity.



**Figure 4:** Extract of the 1: 250 000 SAHRIS PalaeoMap map (Council of Geosciences) indicating the proposed Seelo Alpha Solar PV development.





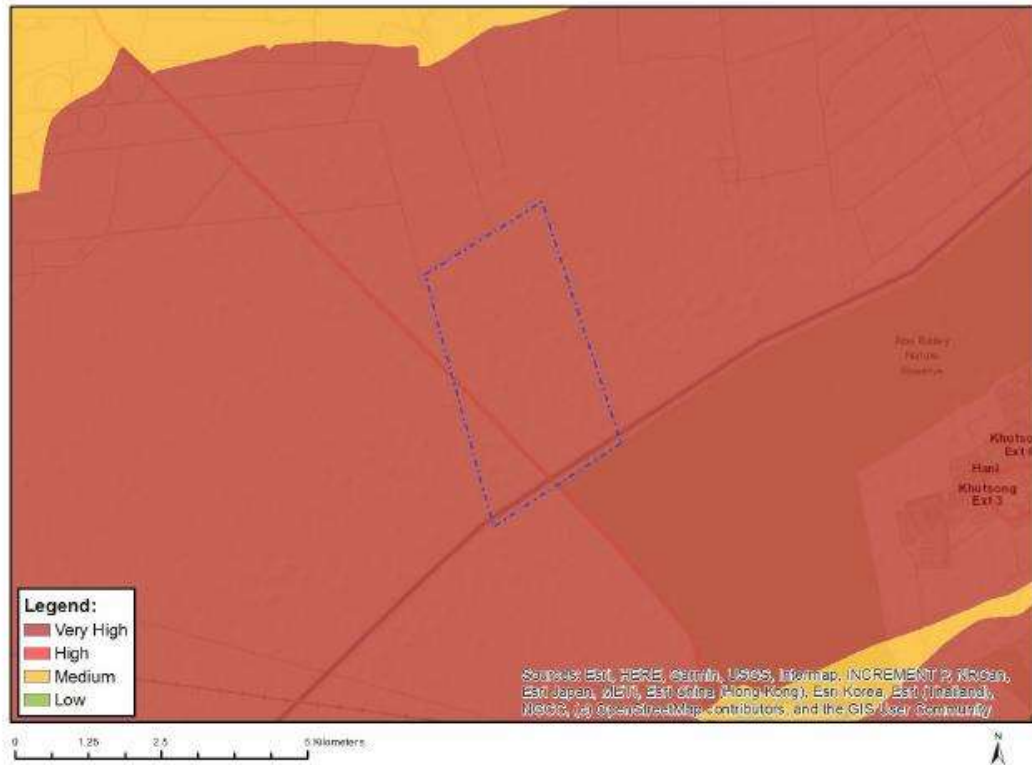
**Table 2: Palaeontological Sensitivity according to the SAHRIS PalaeoMap (Almond *et al.*, 2013; SAHRIS website).**

Colour	Sensitivity	Required Action
<b>RED</b>	<b>VERY HIGH</b>	<b>field assessment and protocol for finds is required</b>
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study; a field assessment is likely
<b>GREEN</b>	<b>MODERATE</b>	<b>desktop study is required</b>
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

The PalaeoMap of the South African Heritage Resources Information System (**Figure 3, Table 2**) indicates that the Palaeontological Sensitivity of the Seelo Alpha Solar PV development is Very High (red) (Almond and Pether, 2009; Almond *et al.*, 2013).



### MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

#### Sensitivity Features:

Sensitivity	Feature(s)
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

**Figure 4:** Palaeontological Sensitivity of the Seelo Alpha Solar PV by the National Environmental Web-based Screening Tool.

The National Environmental Web-based Screening Tool indicates that the Palaeontological Sensitivity of the development is Very High (dark red).



## **5. CONCLUSION**

The Site Sensitivities of the proposed Seelo Alpha Solar PV has been verified and it was found that:

The SAHRIS Palaeosensitivity map indicates that the Palaeontological Sensitivity of the development is Very High.

and

The National Environmental Web-based Screening Tool indicates that the Palaeontological Sensitivity of the development is Very High (dark red).

These maps indicate that the proposed Seelo Alpha Solar PV development is highly Sensitive from a Palaeontological point of view. A site investigation in March 2023 uncovered fossiliferous outcrops. This classification is thus in agreement (National Environmental Web-bases Screening Tool and SAHRIS) as far as the impact of the Seelo Alpha Solar PV development is concerned, based on actual conditions recorded on the ground during the site visit in March 2023.