MOUTON CITRUS (PTY) LTD

ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) FOR THE PROPOSED DEVELOPMENT OF A SOLAR PHOTOVOLTAIC (PV) FACILITY ON FARM NO. 438, BRAKFONTEIN ESTATE, NEAR CITRUSDAL, WESTERN CAPE.

July 2026

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Table of Contents

LIST OF ACRONYMS 4

DETAIL AND EXPERIENCE OF THE EAP WHO PREPARED THE EMPR 5

INTRODUCTION 5

PROJECT DESCRIPTION 6

DESCRIPTION OF ENVIRONMENTAL SETTING AND SENSITIVITY 7

ASPECTS COVERED BY THIS EMP 8

LEGAL FRAMEWORK 11

ENVIRONMENTAL OBJECTIVES, OUTCOMES AND IMPACT MANAGEMENT ACTIONS 13

PLANNING & DESIGN PHASE **13**

Objective 1: Appoint a suitably qualified independent Environmental Control Officer (ECO). 14

Objective 2: Ensure all conditions of the Environmental Authorisation and associated specialist recommendations are incorporated into the final project design. 15

Objective 3: Finalise and implement the approved Stormwater Management Plan. 16

Objective 4: Demarcate the approved development footprint, environmentally sensitive areas and all no-go areas prior to site establishment. 17

Objective 5: Finalise the layout of the solar photovoltaic (PV) facility, Battery Energy Storage System (BESS), access roads and associated infrastructure to minimise environmental disturbance. 18

Objective 6: Prepare and implement a Construction Environmental Awareness and Induction Programme for all personnel. 19

Objective 7: Develop site-specific emergency response procedures, including fire prevention, spill response and incident reporting procedures. 20

Objective 8: Prepare site-specific waste management and hazardous substances management procedures. 21

Objective 9: Establish the construction site camp, material storage areas and associated temporary infrastructure within approved disturbed areas. 22

CONSTRUCTION PHASE: **24**

Objective 1: Soil erosion, compaction and contamination. 25

Objective 2: Surface water and aquatic impacts. 26

Objective 3: Terrestrial biodiversity (flora and fauna). 27

Objective 4: Agricultural impacts. 29

Objective 5: Dust generation. 30

Objective 6: Noise impacts. 31

Objective 7: Waste management. 32

Objective 8: Hazardous substances management (small quantities only). 33

Objective 9: Traffic and road safety. 34

Objective 10: Heritage resources (Chance Finds Procedure). 35
Objective 11: Visual impacts. 36
Objective 12: Fire prevention and occupational health & safety. 37
Objective 13: Positive socio-economic impacts. 39

OPERATIONAL PHASE **40**
Objective 1: Agricultural land occupation 40
Objective 2: Biodiversity impacts 41
Objective 3: Aquatic impacts 43
Objective 4: Stormwater and erosion 44
Objective 5: Waste (PV modules and BESS at end-of-life) 45
Objective 6: Fire and electrical safety 46
Objective 7: Visual impacts 48
Objective 8: Positive renewable energy generation 49
Objective 9: Reduced greenhouse gas emissions 50
Objective 10: Energy security for the Mouton Citrus farming operation 51
Objective 11: Long-term socio-economic benefits 52

IMPLEMENTATION OF THE EMP 54
DOCUMENTATION AND RECORD KEEPING 56
ENVIRONMENTAL AWARENESS AND TRAINING 59
NON-CONFORMANCE MANAGEMENT 60
ESCALATION OF NON-CONFORMANCES 61

LIST OF ACRONYMS

Acronym	Description
BA	Basic Assessment
BAR	Basic Assessment Report
BESS	Battery Energy Storage System
DEA&DP	Department of Environmental Affairs and Development Planning (Western Cape)
ECO	Environmental Control Officer
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GN	Government Notice
GPR	Ground Probing Radar
HWC	Heritage Western Cape
MV	Medium Voltage
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended
OHS	Occupational Health and Safety
PCS	Power Conversion System
PV	Photovoltaic
RMU	Ring Main Unit
SABS	South African Bureau of Standards
SANS	South African National Standards
SCC	Species of Conservation Concern
SEC	Sillito Environmental Consulting (Pty) Ltd
SSVR	Site Sensitivity Verification Report

DETAIL AND EXPERIENCE OF THE EAP WHO PREPARED THE EMPR

This report was prepared by Jonathan Lassen and reviewed by Chantel Müller of Sillito Environmental Consulting (Pty) Ltd.

Chantel has a BA in Social Dynamics and obtained her MPhil Environmental Management at the University of Stellenbosch in October 2008. Chantel is a registered EAP with EAPSA as well as a member of the International Association for Impact Assessment (IAIA). Chantel is also an Accredited Professional with the Green Building Council of South Africa.

Jonathan Lassen obtained his Advanced Diploma in Marine Sciences from the Cape Peninsula University of Technology and is a Candidate Registered EAP with EAPASA as well as a professional member of IASA South Africa.

SEC has extensive experience in environmental impact assessment (EIA) procedures and has completed numerous such applications in most provinces of South Africa since 1998.

INTRODUCTION

This Environmental Management Programme (EMPr) has been compiled in accordance with the requirements of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations, 2014, as amended.

The purpose of this EMPr is to ensure compliance with the principles of sound environmental management and the general duty of care contained in NEMA by prescribing management and mitigation measures to avoid, minimise, rehabilitate and, where necessary, remedy potential environmental impacts associated with the proposed development during the construction, operational, maintenance and decommissioning phases of the project.

This document provides practical and enforceable management measures to ensure that potential environmental impacts associated with the proposed development are appropriately avoided or, where avoidance is not possible, minimised and mitigated to acceptable levels.

This EMPr forms part of the contractual obligations applicable to all persons involved in the implementation of the project, including the Applicant, contractors, sub-contractors, employees and any other parties undertaking work on behalf of the Applicant. It also serves as the primary environmental management document for the project throughout all phases of the proposed development.

The EMPr has been prepared to satisfy the requirements of Section 24N of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, as well as any additional requirements of the competent authority, namely the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP).

The overall objective of the EMPr is to provide clear environmental management requirements and responsibilities for all parties involved in the implementation of the project, thereby ensuring that the proposed development is undertaken in an environmentally responsible manner. The EMPr seeks to prevent avoidable environmental impacts and to minimise or

mitigate unavoidable impacts associated with the construction, operation, maintenance and decommissioning of the proposed solar photovoltaic (PV) facility.

The objectives of the EMPr will be achieved through the implementation of the mitigation and management measures contained within this document, together with ongoing compliance monitoring, environmental auditing and adaptive management where necessary.

The EMPr:

- identifies project activities that may result in actual or potential environmental impacts and prescribes the management measures required to address such impacts;
- identifies the roles and responsibilities of the Applicant, Environmental Control Officer (ECO), contractors and other responsible persons;
- provides site-specific environmental management measures to avoid, minimise and mitigate adverse environmental impacts while promoting good environmental practice;
- identifies site-specific requirements relating to construction activities, access routes, laydown areas, material storage areas, waste management areas and other project infrastructure;
- provides documented environmental procedures, responsibilities and requirements applicable to all personnel involved in the project;
- establishes a compliance monitoring and environmental auditing programme to assess implementation of the EMPr and identify any corrective actions that may be required; and
- provides a framework for recording and demonstrating compliance with the mitigation and management measures throughout the duration of the project.

PROJECT DESCRIPTION

The proposed development entails the construction, operation, maintenance and eventual decommissioning of a solar photovoltaic (PV) energy facility with a combined installed generation capacity of approximately 3.651 MWp on Farm No. 438 (Brakfontein Estate), approximately 12 km north of Citrusdal within the Cederberg Local Municipality, Western Cape. The facility is intended to generate renewable electricity for the existing Mouton Citrus (Pty) Ltd agricultural operation, including the adjacent packhouse and associated agricultural infrastructure, thereby improving energy security and reducing reliance on the national electricity grid.

The proposed development comprises the following principal components:

- A ground-mounted solar PV array with an installed capacity of approximately 2.502 MWp DC (1.98 MWac), mounted on fixed-tilt support structures inclined at approximately 20°, occupying an area of approximately 27,297 m^2.
- Rooftop-mounted solar PV panels installed on existing agricultural and industrial buildings adjacent to the proposed ground-mounted facility to supplement the overall generating capacity.
- A 4.308 MWh Battery Energy Storage System (BESS) comprising a Sungrow Power Titan 2.0 unit with a 2.5 MW Power Conversion System (PCS).

- Associated electrical infrastructure, including:
    - Solar inverters;
    - Step-up transformers;
    - Two 1,250 kVA medium-voltage (MV) substations, each equipped with three-way Ring Main Units (RMUs);
    - Approximately 4,000 m of underground medium-voltage cabling connecting the PV facility, BESS, substations and the existing electrical network; and
    - Ancillary electrical switchgear, protection and monitoring equipment.
- A small control, operations and maintenance building.
- Internal gravel access roads and turning areas where required.
- Perimeter security fencing, controlled access gates and limited low-level security lighting.

The proposed development has been designed to make use of previously disturbed agricultural land located immediately adjacent to existing agricultural infrastructure. The layout has been informed by the findings of the specialist studies and has been configured, where practicable, to avoid environmentally sensitive features and minimise potential impacts on biodiversity, aquatic resources and agricultural land. Upon completion of construction, the facility will operate as supporting infrastructure to the existing agricultural enterprise and will contribute towards the long-term sustainability and resilience of the farming operation.

DESCRIPTION OF ENVIRONMENTAL SETTING AND SENSITIVITY

The proposed solar photovoltaic (PV) facility is located on Farm No. 438 (Brakfontein Estate), approximately 12 km north of Citrusdal within the Cederberg Local Municipality, Western Cape. The proposed development is situated immediately adjacent to the existing Mouton Citrus agricultural and industrial complex and has been designed to function as ancillary infrastructure to the existing farming operation.

The development footprint comprises previously disturbed agricultural land that has been extensively transformed through historical and ongoing agricultural activities, including rooibos cultivation. Existing land uses within the surrounding area are predominantly agricultural, with associated farming, packing and processing infrastructure. The proposed development has been positioned to make efficient use of existing infrastructure while avoiding environmentally sensitive areas where practicable.

A National Web-Based Environmental Screening Tool Report was generated for the site, and the identified environmental sensitivities were subsequently verified through specialist investigations undertaken as part of the Basic Assessment process. The completed specialist studies confirmed that:

- the Agricultural Theme is appropriately verified as High sensitivity, rather than the Screening Tool's Very High sensitivity;
- the Plant Species Theme and Animal Species Theme are of Low sensitivity within the proposed development footprint due to the previously transformed nature of the site;

- the Aquatic Biodiversity Theme is of Low sensitivity, with the development footprint located outside identified aquatic features;
- the Archaeological and Cultural Heritage Theme is of Low sensitivity, subject to implementation of a Chance Finds Procedure during construction;
- the proposed development footprint comprises a previously disturbed agricultural area of Very Low terrestrial biodiversity sensitivity, with no Species of Conservation Concern recorded during field assessments; and
- no fatal environmental flaws were identified that would preclude the proposed development, provided that the recommended mitigation measures contained within this EMPr and the specialist studies are implemented.

The layout of the proposed development has been informed by the findings of the specialist investigations and has been refined, where practicable, to avoid environmentally sensitive features and minimise potential impacts on biodiversity, aquatic resources and agricultural land. Environmental management measures contained within this EMPr have been developed to address the identified environmental sensitivities and ensure that construction, operation, maintenance and decommissioning activities are undertaken in an environmentally responsible manner.

ASPECTS COVERED BY THIS EMP

The proposed development entails the construction, operation, maintenance and eventual decommissioning of a solar photovoltaic (PV) energy facility, associated Battery Energy Storage System (BESS) and ancillary electrical infrastructure. The potential environmental impacts associated with the project have been identified through the Basic Assessment process and specialist investigations. This EMPr prescribes management and mitigation measures to avoid, minimise and manage these impacts throughout the lifecycle of the proposed development.

Construction Phase

The primary environmental aspects associated with the construction phase include:

- **Soil Erosion, Compaction and Contamination:** Vegetation clearance, earthworks, excavation, vehicle movement and material storage may result in soil disturbance, erosion, compaction and localised contamination if not appropriately managed.

- **Surface Water and Aquatic Impacts:** Construction activities, stormwater runoff and sediment mobilisation have the potential to impact nearby drainage features if adequate erosion and sediment control measures are not implemented.

- **Terrestrial Biodiversity (Flora and Fauna):** Although the development footprint is located within a previously transformed agricultural area, construction activities may result in the disturbance of remaining vegetation and fauna if confined work areas are not maintained.

- **Agricultural Impacts:** Construction activities will permanently occupy a portion of agricultural land and may result in unnecessary disturbance of adjacent cultivated areas if construction activities are not appropriately managed.

- **Dust Generation:** Earthworks, excavation activities, vehicle movement and the transportation of construction materials may generate dust, particularly during dry and windy conditions.

- **Noise Impacts:** Temporary increases in noise levels may occur as a result of construction vehicles, machinery and equipment operating on site.

- **Waste Generation:** General construction waste, packaging materials, scrap materials and domestic waste generated by construction personnel require appropriate storage, handling and disposal.

- **Hazardous Substances:** Small quantities of fuels, oils, lubricants, paints and other hazardous substances required during construction have the potential to contaminate the environment if improperly stored or handled.

- **Traffic and Road Safety:** Increased construction traffic associated with the delivery of equipment, construction materials and personnel may temporarily affect road safety and local traffic conditions.

- **Heritage Resources:** Although no significant heritage resources were identified, there remains the possibility of previously unknown archaeological or palaeontological material being uncovered during excavation activities. A Chance Finds Procedure will therefore be implemented.

- **Visual Impacts:** Temporary visual impacts associated with construction equipment, material stockpiles, site establishment and construction activities will occur during the construction period.

- **Fire and Occupational Health & Safety:** Construction activities involving electrical equipment, machinery, welding, cutting or fuel storage may present fire and occupational health and safety risks if not appropriately managed.

- **Positive Socio-economic Impacts:** The construction phase will generate temporary employment opportunities and demand for local goods and services, contributing positively to the local economy.

Operational Phase

The primary environmental aspects associated with the operational phase include:

- **Agricultural Land Occupation:** The solar PV facility will permanently occupy a portion of agricultural land; however, the development has been designed to minimise the loss of productive agricultural land while supporting the continued operation of the Mouton Citrus farming enterprise.

- **Biodiversity Impacts:** Routine operation and maintenance activities have the potential to result in minor disturbance to vegetation and fauna if not appropriately managed.

- **Aquatic Impacts:** Improper stormwater management, erosion or maintenance activities could adversely affect nearby drainage features if appropriate controls are not maintained.

- **Stormwater and Erosion:** Poor management of stormwater runoff or inadequate maintenance of erosion control measures may result in localised erosion or sedimentation.

- **Waste Generation:** Operational waste will primarily comprise general maintenance waste, with end-of-life management of photovoltaic modules, electrical equipment and Battery Energy Storage System (BESS) components requiring disposal or recycling through appropriately authorised facilities.

- **Fire and Electrical Safety:** Electrical infrastructure, transformers, substations and the Battery Energy Storage System present potential fire and electrical safety risks that require ongoing inspection, maintenance and emergency preparedness.

- **Visual Impacts:** The solar PV facility will introduce permanent infrastructure into the landscape; however, visual impacts have been minimised through the location of the facility adjacent to existing agricultural infrastructure.

- **Positive Renewable Energy Generation:** The project will generate renewable electricity, reducing reliance on the national electricity grid and supporting South Africa's transition towards cleaner energy generation.

- **Reduced Greenhouse Gas Emissions:** By generating electricity from renewable solar energy, the project will contribute to reducing greenhouse gas emissions associated with conventional electricity generation.

- **Energy Security:** The facility will improve the reliability and resilience of electricity supply for the Mouton Citrus farming operation, supporting continued agricultural production and associated processing activities.

- **Long-term Socio-economic Benefits:** The project will contribute to the long-term sustainability of the farming enterprise, assist in protecting existing employment opportunities and provide ongoing economic benefits through improved operational efficiency and energy resilience.

To minimise the potential negative environmental impacts associated with the proposed development, it is imperative that all phases of the project, including construction, operation, maintenance and eventual decommissioning, are undertaken in accordance with the management measures contained in this EMPr. The mitigation measures prescribed herein directly address the identified environmental aspects and are intended to ensure that the proposed solar photovoltaic (PV) facility is developed and operated in an environmentally responsible manner while maximising the positive environmental and socio-economic benefits associated with renewable energy generation.

LEGAL FRAMEWORK

This Environmental Management Programme (EMPr) has been compiled in fulfilment of the requirements of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA). The contents of this EMPr have been prepared in accordance with the requirements of Appendix 4 of the Environmental Impact Assessment Regulations, 2014 (as amended), promulgated in terms of NEMA.

The proposed development triggers the following listed activity in terms of the Environmental Impact Assessment Regulations, 2014 (as amended):

- **Listing Notice 1, Activity 28**

Accordingly, a Basic Assessment (BA) process is being undertaken to obtain Environmental Authorisation from the competent authority, namely the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), prior to the commencement of the proposed development.

This EMPr forms part of the Basic Assessment process and establishes the environmental management measures to be implemented during the construction, operation, maintenance and eventual decommissioning of the proposed solar photovoltaic (PV) facility and associated infrastructure.

The EMPr shall be binding on the Applicant, contractors, sub-contractors and all personnel involved in the implementation of the project. The mitigation and management measures contained herein shall be implemented throughout the lifecycle of the proposed development to ensure compliance with the Environmental Authorisation, applicable environmental legislation and recognised best environmental management practices.

The Applicant shall remain responsible for ensuring compliance with this EMPr and the general duty of care prescribed under Section 28 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, including the prevention, remediation and rehabilitation of any environmental damage resulting from the proposed development. Any amendments to this EMPr shall be undertaken in accordance with the requirements of the Environmental Authorisation and applicable environmental legislation.

The Applicant shall comply with all applicable environmental legislation and any other statutory requirements relevant to the proposed development, including, but not limited to, the following:

- National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended;
- Environmental Impact Assessment Regulations, 2014 (as amended);
- National Water Act, 1998 (Act No. 36 of 1998);
- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended;
- National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), as amended;
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), as amended;

- National Heritage Resources Act, 1999 (Act No. 25 of 1999);
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), together with all applicable regulations;
- Disaster Management Act, 2002 (Act No. 57 of 2002);
- Fire Brigade Services Act, 1987 (Act No. 99 of 1987);
- National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977);
- Applicable South African National Standards (SANS) relating to electrical installations, photovoltaic systems, battery energy storage systems (BESS), construction activities and occupational health and safety;
- National Dust Control Regulations (GN R.827 of 1 November 2013), promulgated in terms of the National Environmental Management: Air Quality Act, 2004; and
- Any other applicable legislation, regulations, standards, permits, licence conditions and guidelines relevant to the proposed development.

ENVIRONMENTAL OBJECTIVES, OUTCOMES AND IMPACT MANAGEMENT ACTIONS

PLANNING & DESIGN PHASE

Although the planning and design phase does not involve physical site disturbance and is therefore not expected to result in direct environmental impacts, decisions made during this phase will have a significant influence on the environmental performance of the proposed development throughout its lifecycle. Inadequate planning or inappropriate design may increase the potential for adverse environmental impacts during the construction, operational and eventual decommissioning phases.

The planning and design of the proposed solar photovoltaic (PV) facility, Battery Energy Storage System (BESS) and associated infrastructure shall therefore incorporate the findings and recommendations of the Basic Assessment process, including the specialist investigations undertaken as part of the Environmental Impact Assessment. Particular consideration shall be given to the protection of identified environmental sensitivities, optimisation of the development layout, implementation of appropriate stormwater management measures, and avoidance or minimisation of unnecessary disturbance to surrounding agricultural land and the receiving environment.

The environmental management objectives for the Planning and Design Phase, together with the corresponding management measures required to achieve these objectives and minimise potential environmental impacts, are presented below. These measures are intended to ensure that environmental considerations are integrated into the final design and planning of the proposed development prior to the commencement of construction activities.

The environmental management objectives (goals) listed below shall be implemented during the detailed planning and design phase, prior to the commencement of construction activities:

1. Appoint a suitably qualified independent Environmental Control Officer (ECO).
2. Ensure all conditions of the Environmental Authorisation and associated specialist recommendations are incorporated into the final project design.
3. Finalise and implement the approved Stormwater Management Plan.
4. Demarcate the approved development footprint, environmentally sensitive areas and all no-go areas prior to site establishment.
5. Finalise the layout of the solar photovoltaic (PV) facility, Battery Energy Storage System (BESS), access roads and associated infrastructure to minimise environmental disturbance.
6. Prepare and implement a Construction Environmental Awareness and Induction Programme for all personnel.
7. Develop site-specific emergency response procedures, including fire prevention, spill response and incident reporting procedures.
8. Prepare site-specific waste management and hazardous substances management procedures.
9. Establish the construction site camp, material storage areas and associated temporary infrastructure within approved disturbed areas.

10. Undertake a pre-construction site inspection by the Environmental Control Officer (ECO) to verify compliance with the Environmental Authorisation, this EMPr and the approved site layout prior to the commencement of construction activities.

Objective 1: Appoint a suitably qualified independent Environmental Control Officer (ECO).

Impact Management Outcome: A suitably qualified and independent Environmental Control Officer (ECO) is appointed prior to the commencement of construction to oversee implementation of the Environmental Authorisation, this EMPr and the approved specialist recommendations throughout the construction phase.

Mitigation Measure	Responsible	Time Period
1. A suitably qualified and independent Environmental Control Officer (ECO) shall be appointed by the Applicant prior to the commencement of any construction activities.	Applicant (Mouton Citrus (Pty) Ltd)	Prior to commencement of construction
2. The ECO shall be provided with the approved Environmental Authorisation, this EMPr, the Basic Assessment Report and all relevant specialist reports prior to commencing duties.	Applicant	Prior to commencement of construction
3. The ECO shall undertake a pre-construction site inspection to verify that the approved development footprint, environmentally sensitive areas and no-go areas have been correctly identified and demarcated prior to site establishment.	ECO	Prior to commencement of construction
4. The ECO shall conduct an environmental induction for all contractors and site personnel prior to the commencement of construction activities.	ECO / Principal Contractor	Prior to commencement of construction
5. The ECO shall undertake regular environmental compliance inspections during the construction phase and provide written compliance reports to the Applicant, highlighting any non-compliances and recommending corrective actions where necessary.	ECO	Throughout the construction phase
6. The ECO shall verify that any environmental incidents, complaints or non-compliances are appropriately recorded, investigated and closed out through the implementation of suitable corrective actions.	ECO / Principal Contractor	Throughout the construction phase

Performance Indicator: A suitably qualified and independent ECO has been appointed prior to construction, a pre-construction inspection and environmental induction have been completed, and environmental compliance inspections

and reporting are undertaken throughout the construction phase in accordance with the Environmental Authorisation and this EMPr.

Objective 2: Ensure all conditions of the Environmental Authorisation and associated specialist recommendations are incorporated into the final project design.

Impact Management Outcome: The final design of the proposed solar photovoltaic (PV) facility incorporates all applicable conditions of the Environmental Authorisation, the commitments contained in the Basic Assessment Report (BAR), and the recommendations of the specialist studies, thereby avoiding or minimising potential environmental impacts prior to construction.

Mitigation Measure	Responsible	Time Period
1. The final engineering design shall be consistent with the approved layout assessed during the Basic Assessment process and authorised by the competent authority.	Applicant / Design Engineer	Prior to commencement of construction
2. All applicable conditions of the Environmental Authorisation shall be incorporated into the final project design, construction planning and implementation programme.	Applicant / EAP	Prior to commencement of construction
3. All mitigation measures and design recommendations contained within the specialist studies shall be incorporated into the final engineering design and construction documentation, where applicable.	Applicant / Design Engineer	Prior to commencement of construction
4. The approved development footprint shall not be expanded beyond that assessed during the Environmental Impact Assessment process unless authorised in terms of the applicable environmental legislation.	Applicant / Design Engineer	Prior to commencement of construction
5. Environmentally sensitive areas identified during the Basic Assessment process shall be incorporated into the final design and clearly reflected on construction drawings, with no-go areas demarcated prior to construction.	Design Engineer / ECO	Prior to commencement of construction
6. Any material design changes that may alter the nature, extent or significance of the assessed environmental impacts shall be reviewed by the Environmental Assessment Practitioner (EAP) to determine whether further environmental authorisation or amendment is required prior to implementation.	Applicant / EAP	Throughout the planning and design phase

Performance Indicator: The final project design is fully aligned with the Environmental Authorisation, Basic Assessment Report, specialist recommendations and approved development layout, with all environmental commitments incorporated prior to the commencement of construction activities.

Objective 3: Finalise and implement the approved Stormwater Management Plan.

Impact Management Outcome: The final Stormwater Management Plan (SWMP) is incorporated into the detailed engineering design to ensure that stormwater runoff is appropriately managed, thereby preventing erosion, sedimentation, flooding and pollution of the receiving environment throughout the lifecycle of the proposed development.

Mitigation Measure	Responsible	Time Period
1. A detailed Stormwater Management Plan (SWMP) shall be finalised and incorporated into the final engineering design prior to the commencement of construction activities.	Applicant / Design Engineer	Prior to commencement of construction
2. The Stormwater Management Plan shall be designed to minimise surface water runoff, erosion and sedimentation, and prevent the discharge of contaminated stormwater into the surrounding environment.	Design Engineer	Prior to commencement of construction
3. Stormwater infrastructure, including drainage channels, attenuation measures, erosion protection and energy dissipation structures, shall be designed in accordance with recognised engineering standards and good practice.	Design Engineer	Prior to commencement of construction
4. The final layout shall ensure that natural drainage patterns are maintained, where practicable, and that stormwater is safely conveyed without causing downstream erosion or environmental degradation.	Design Engineer	Prior to commencement of construction
5. Temporary and permanent stormwater management measures shall be incorporated into the construction planning to minimise erosion and sediment transport during construction.	Design Engineer / Principal Contractor	Prior to commencement of construction
6. The ECO shall review the proposed stormwater management measures during the pre-construction site inspection to verify that the approved design has been incorporated into the project prior to construction commencing.	ECO	Prior to commencement of construction

Performance Indicator: A project-specific Stormwater Management Plan has been finalised, incorporated into the approved engineering design and verified by the ECO prior to the commencement of construction, ensuring that appropriate stormwater management measures are implemented throughout the project.

Objective 4: Demarcate the approved development footprint, environmentally sensitive areas and all no-go areas prior to site establishment.

Impact Management Outcome: The approved development footprint, environmentally sensitive areas and all designated no-go areas are clearly identified and physically demarcated prior to site establishment, ensuring that construction activities are confined to the authorised development area and unnecessary environmental disturbance is avoided.

Mitigation Measure	Responsible	Time Period
1. The approved development footprint shall be surveyed and clearly demarcated on site prior to the commencement of any site establishment or construction activities.	Applicant / Surveyor / Principal Contractor	Prior to commencement of construction
2. All environmentally sensitive areas identified during the Basic Assessment process and associated specialist studies shall be clearly demarcated and designated as no-go areas prior to construction commencing.	Applicant / ECO	Prior to commencement of construction
3. No construction activities, vegetation clearance, material stockpiling, vehicle parking or movement of construction machinery shall be permitted outside the approved development footprint unless specifically authorised.	Principal Contractor	Throughout site establishment and construction
4. Temporary fencing, barrier tape, danger tape, pegs or other suitable demarcation measures shall be installed and maintained around the approved development footprint and all designated no-go areas for the duration of the construction phase.	Principal Contractor	Prior to and throughout construction
5. The Environmental Control Officer (ECO) shall verify the adequacy of all site demarcation during the pre-construction site inspection and prior to the commencement of construction activities.	ECO	Prior to commencement of construction
6. Any damaged, removed or displaced demarcation shall be immediately reinstated to the satisfaction of the ECO.	Principal Contractor	Throughout construction

Performance Indicator: The approved development footprint, environmentally sensitive areas and all no-go areas have been clearly demarcated and verified by the ECO prior to site establishment, with all construction activities remaining within the approved development footprint for the duration of the construction phase.

Objective 5: Finalise the layout of the solar photovoltaic (PV) facility, Battery Energy Storage System (BESS), access roads and associated infrastructure to minimise environmental disturbance.

Impact Management Outcome: The final layout of the proposed solar photovoltaic (PV) facility, Battery Energy Storage System (BESS), access roads and associated infrastructure is optimised to minimise environmental disturbance, avoid environmentally sensitive areas where practicable and ensure compliance with the approved Environmental Authorisation and specialist recommendations.

Mitigation Measure	Responsible	Time Period
1. The final project layout shall be consistent with the layout assessed during the Basic Assessment process and approved by the competent authority.	Applicant / Design Engineer	Prior to commencement of construction
2. The location of the solar photovoltaic (PV) arrays, Battery Energy Storage System (BESS), substations, underground electrical cabling, internal access roads and associated infrastructure shall be optimised to minimise environmental disturbance and unnecessary earthworks.	Design Engineer	Prior to commencement of construction
3. The development footprint shall be confined to previously disturbed areas, where practicable, to minimise impacts on agricultural land, biodiversity and the surrounding environment.	Applicant / Design Engineer	Prior to commencement of construction
4. The final layout shall incorporate the avoidance measures and design recommendations contained within the specialist studies, including the protection of environmentally sensitive areas and designated no-go areas.	Applicant / Design Engineer	Prior to commencement of construction
5. Existing drainage patterns shall be maintained, where practicable, and infrastructure shall be positioned to minimise erosion, stormwater impacts and unnecessary alteration of natural surface drainage.	Design Engineer	Prior to commencement of construction
6. Temporary construction areas, including laydown areas, site camps, material storage areas and vehicle parking areas, shall be located within approved disturbed areas and outside environmentally sensitive areas.	Applicant / Principal Contractor / ECO	Prior to commencement of construction
7. Any proposed design changes that may alter the approved development footprint or increase the significance of the environmental impacts assessed during the Basic Assessment process shall be reviewed by the Environmental Assessment Practitioner (EAP) prior to implementation to determine whether additional environmental authorisation is required.	Applicant / EAP	Throughout the planning and design phase

Performance Indicator: The final project layout is consistent with the approved Environmental Authorisation, Basic Assessment Report and specialist recommendations, with all infrastructure located within the approved development footprint and environmental disturbance minimised through appropriate design and layout optimisation.

Objective 6: Prepare and implement a Construction Environmental Awareness and Induction Programme for all personnel.

Impact Management Outcome: All personnel involved in the construction of the proposed solar photovoltaic (PV) facility receive appropriate environmental awareness and induction training prior to commencing work on site, ensuring that they understand the environmental sensitivities of the site, the requirements of the Environmental Authorisation and this EMPr, and their individual environmental responsibilities.

Mitigation Measure	Responsible	Time Period
1. A project-specific Environmental Awareness and Induction Programme shall be prepared prior to the commencement of construction activities.	ECO / Principal Contractor	Prior to commencement of construction
2. All personnel, including contractors, sub-contractors, suppliers and visitors requiring access to the construction site, shall undergo environmental induction training before commencing work on site.	ECO / Principal Contractor	Prior to commencement of construction and throughout construction for new personnel
3. The environmental induction shall include, as a minimum, the requirements of the Environmental Authorisation, this EMPr, environmentally sensitive areas and no-go areas, waste management, spill prevention and response, fire prevention, heritage chance finds procedures, emergency response procedures, incident reporting and the responsibilities of all personnel.	ECO	Prior to commencement of construction
4. Attendance registers shall be maintained for all environmental induction sessions and made available for inspection by the ECO or competent authority upon request.	Principal Contractor	Throughout construction
5. Refresher environmental awareness training shall be provided where necessary, particularly following significant environmental incidents, amendments to the EMPr or where recurring non-compliances are identified.	ECO	Throughout construction

6. Toolbox talks shall be undertaken regularly to reinforce environmental awareness and address site-specific environmental issues as construction progresses.	Principal Contractor / ECO	Throughout construction

Performance Indicator: All personnel have received environmental induction training prior to commencing work on site, attendance records are maintained, regular environmental awareness training is undertaken throughout construction, and personnel demonstrate an understanding of the environmental requirements applicable to the project.

Objective 7: Develop site-specific emergency response procedures, including fire prevention, spill response and incident reporting procedures.

Impact Management Outcome: Site-specific emergency response procedures are established and implemented prior to the commencement of construction to ensure that environmental incidents, fires, hazardous substance spills and other emergencies are managed effectively, thereby minimising risks to personnel, property and the receiving environment.

Mitigation Measure	Responsible	Time Period
1. A project-specific Emergency Response Plan shall be prepared and implemented prior to the commencement of construction activities.	Principal Contractor	Prior to commencement of construction
2. The Emergency Response Plan shall include procedures for fire prevention and response, hazardous substance spills, medical emergencies, environmental incidents, severe weather events and other foreseeable emergencies associated with the construction of the proposed solar photovoltaic (PV) facility.	Principal Contractor	Prior to commencement of construction
3. Suitable fire-fighting equipment, spill response equipment and first aid facilities shall be provided on site and maintained in a serviceable condition throughout the construction phase.	Principal Contractor	Prior to and throughout construction
4. Emergency contact details, evacuation procedures and assembly points shall be clearly displayed at the site camp and other prominent locations on site.	Principal Contractor	Prior to commencement of construction
5. All personnel shall receive training on the emergency response procedures applicable to the site as part of the environmental and health and safety induction programme.	Principal Contractor / ECO	Prior to commencement of construction and throughout construction for new personnel

6. All environmental incidents, spills, fires and emergencies shall be reported immediately to the Principal Contractor and Environmental Control Officer (ECO), investigated, documented and appropriate corrective actions implemented to prevent recurrence.	Principal Contractor / ECO	Throughout construction
7. Spill kits shall be strategically located wherever fuels, oils or other hazardous substances are stored or used, and all spills shall be contained and cleaned up immediately using appropriate spill response procedures.	Principal Contractor	Throughout construction
8. Emergency response procedures shall be reviewed periodically and updated where necessary to reflect changes in construction activities, identified risks or lessons learnt from incidents or emergency drills.	Principal Contractor / ECO	Throughout construction

Performance Indicator: A project-specific Emergency Response Plan has been implemented prior to construction, emergency equipment is available and maintained on site, personnel have been trained in emergency response procedures, and all environmental incidents are appropriately reported, investigated and addressed.

Objective 8: Prepare site-specific waste management and hazardous substances management procedures.

Impact Management Outcome: Site-specific waste management and hazardous substances management procedures are developed and implemented prior to the commencement of construction to ensure that waste is appropriately managed, and hazardous substances are stored, handled and disposed of in a manner that prevents pollution and minimises environmental risk.

Mitigation Measure	**Responsible**	**Time Period**
1. A project-specific Waste Management Procedure shall be prepared prior to the commencement of construction activities.	Principal Contractor	Prior to commencement of construction
2. A project-specific Hazardous Substances Management Procedure shall be prepared for the storage, handling, use and disposal of fuels, oils, lubricants, paints and other hazardous substances required during construction.	Principal Contractor	Prior to commencement of construction
3. Suitable areas for the temporary storage of general waste, recyclable materials and hazardous waste shall be identified	Principal Contractor	Prior to commencement of construction

within the approved site camp and incorporated into the site layout plan.		
4. Suitable areas for the storage of hazardous substances shall be established within the approved construction site and shall be located away from environmentally sensitive areas and designed to prevent spills and contamination of soil and surface water resources.	Principal Contractor	Prior to commencement of construction
5. Appropriate waste collection facilities and clearly labelled waste receptacles shall be provided for the segregation of general waste, recyclable materials and hazardous waste.	Principal Contractor	Prior to commencement of construction
6. Spill response equipment shall be provided at all hazardous substance storage areas and in areas where hazardous substances are used or handled.	Principal Contractor	Prior to commencement of construction
7. All personnel shall receive training on the waste management procedures and hazardous substances management requirements applicable to the project as part of the environmental induction programme.	Principal Contractor / ECO	Prior to commencement of construction and throughout construction for new personnel
8. Waste management and hazardous substances management procedures shall be reviewed and updated where necessary to accommodate changes in construction activities or identified environmental risks.	Principal Contractor / ECO	Throughout construction

Performance Indicator: Project-specific waste management and hazardous substances management procedures have been implemented prior to construction, designated storage and waste management areas have been established, appropriate waste and hazardous substance facilities are available on site, and all personnel have received the necessary training prior to commencing construction activities.

Objective 9: Establish the construction site camp, material storage areas and associated temporary infrastructure within approved disturbed areas.

Impact Management Outcome: The construction site camp, material storage areas and all associated temporary infrastructure are established within approved disturbed areas to minimise environmental disturbance, avoid environmentally sensitive areas and facilitate effective environmental management throughout the construction phase.

Mitigation Measure	Responsible	Time Period
1. The location of the construction site camp, material storage areas, laydown areas, vehicle parking areas and other temporary infrastructure shall be approved by the Environmental Control Officer (ECO) prior to site establishment.	Applicant / Principal Contractor / ECO	Prior to commencement of construction
2. All temporary construction infrastructure shall be established within previously disturbed areas and confined to the approved development footprint.	Principal Contractor	Prior to commencement of construction
3. Construction site camps, material storage areas and temporary infrastructure shall not be established within environmentally sensitive areas, designated no-go areas or areas where they may result in pollution of the surrounding environment.	Principal Contractor	Prior to commencement of construction
4. The construction site camp shall be maintained in a neat, orderly and safe condition throughout the construction phase, with appropriate facilities provided for waste storage, sanitation, hazardous substance storage and stormwater management.	Principal Contractor	Throughout construction
5. Temporary infrastructure shall be limited to the minimum area required for construction activities to minimise unnecessary disturbance of soils, vegetation and agricultural land.	Principal Contractor	Throughout construction
6. Upon completion of construction, all temporary infrastructure, equipment, waste, stockpiled materials and surplus construction materials shall be removed from the site, unless otherwise approved, and all disturbed areas rehabilitated to the satisfaction of the ECO.	Principal Contractor	Upon completion of construction

Performance Indicator: The construction site camp, material storage areas and associated temporary infrastructure have been established within approved disturbed areas, verified by the ECO prior to construction, maintained in an environmentally acceptable condition throughout construction, and fully removed with disturbed areas rehabilitated following completion of construction.

CONSTRUCTION PHASE:

During the construction phase of the proposed solar photovoltaic (PV) facility, temporary environmental impacts may arise as a result of vegetation clearance, earthworks, excavation, construction activities and the movement of construction vehicles and machinery. These impacts include soil erosion, compaction and contamination, impacts on surface water resources, terrestrial biodiversity and agricultural land, dust generation, noise, waste generation, the handling and storage of small quantities of hazardous substances, traffic and road safety impacts, potential impacts on heritage resources through accidental discoveries, temporary visual impacts, and fire and occupational health and safety risks. These impacts are expected to be temporary in nature and can be effectively avoided, minimised or managed through the implementation of the mitigation measures contained within this Environmental Management Programme (EMPr). In addition, the construction phase is expected to result in positive socio-economic benefits through temporary employment opportunities and the procurement of local goods and services.

The environmental management objectives (goals) listed below shall be implemented throughout the construction phase of the proposed solar photovoltaic (PV) facility to prevent, minimise and manage the environmental impacts associated with construction activities:

1. Soil erosion, compaction and contamination.
2. Surface water and aquatic impacts.
3. Terrestrial biodiversity (flora and fauna).
4. Agricultural impacts.
5. Dust generation.
6. Noise impacts.
7. Waste management.
8. Hazardous substances management (small quantities only).
9. Traffic and road safety.
10. Heritage resources (Chance Finds Procedure).
11. Visual impacts.
12. Fire prevention and occupational health & safety.
13. Positive socio-economic impacts.

Objective 1: Soil erosion, compaction and contamination.

Impact Management Outcome: Soil erosion, compaction and contamination resulting from construction activities are prevented or minimised through appropriate planning, construction practices and rehabilitation measures, thereby maintaining soil stability, preserving agricultural productivity and preventing pollution of the surrounding environment.

Mitigation Measure	Responsible	Time Period
1. Construction activities shall be confined to the approved development footprint to minimise unnecessary disturbance of soils and surrounding agricultural land.	Principal Contractor	Throughout construction
2. The minimum area of land required for construction shall be disturbed at any given time, with progressive rehabilitation undertaken where practicable.	Principal Contractor	Throughout construction
3. Topsoil shall be stripped separately from subsoil where excavation is required, stockpiled within designated areas and protected from erosion, contamination and compaction for use during rehabilitation.	Principal Contractor	Throughout construction
4. Construction vehicles and machinery shall utilise designated access routes and working areas to minimise unnecessary soil compaction.	Principal Contractor	Throughout construction
5. No unnecessary movement of vehicles or construction equipment shall be permitted outside the approved construction footprint.	Principal Contractor	Throughout construction
6. Appropriate erosion control measures, including berms, silt fencing, erosion blankets, energy dissipation structures or other suitable measures, shall be implemented where there is a risk of soil erosion.	Principal Contractor	Throughout construction
7. Exposed soils shall be stabilised as soon as reasonably practicable following completion of construction activities in each work area.	Principal Contractor	Throughout construction
8. Fuel, oils, lubricants, concrete, cement, chemicals and other potential contaminants shall be stored and handled in designated areas to prevent contamination of soil.	Principal Contractor	Throughout construction
9. Refuelling and routine maintenance of construction vehicles and machinery shall only take place within designated areas equipped with suitable spill containment measures.	Principal Contractor	Throughout construction

10. Any soil contaminated as a result of spills or leaks shall be immediately contained, removed and disposed of at a suitably authorised waste disposal facility in accordance with applicable legislation.	Principal Contractor	As required throughout construction
11. The Environmental Control Officer (ECO) shall regularly inspect disturbed areas to identify signs of erosion, excessive compaction or soil contamination and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Construction activities remain confined to the approved development footprint, soil erosion and compaction are effectively controlled, contaminated soil is promptly remediated where required, topsoil is appropriately managed for rehabilitation purposes, and no significant soil degradation or pollution occurs as a result of construction activities.

Objective 2: Surface water and aquatic impacts.

Impact Management Outcome: Surface water resources and the surrounding aquatic environment are protected from pollution, sedimentation, erosion and unnecessary disturbance during construction through the implementation of appropriate stormwater management, erosion control and pollution prevention measures.

Mitigation Measure	Responsible	Time Period
1. Construction activities shall be undertaken in accordance with the approved Stormwater Management Plan and associated engineering design.	Principal Contractor	Throughout construction
2. Construction activities shall be confined to the approved development footprint, and no unnecessary disturbance of surrounding areas shall be permitted.	Principal Contractor	Throughout construction
3. Existing drainage patterns shall be maintained, where practicable, to prevent the concentration or diversion of stormwater runoff.	Principal Contractor	Throughout construction
4. Appropriate erosion and sediment control measures shall be implemented and maintained throughout the construction phase to prevent sediment-laden runoff from leaving the construction site.	Principal Contractor	Throughout construction
5. Stockpiles of soil, construction materials and waste shall be located away from drainage lines and positioned to prevent erosion, sedimentation and pollution of surrounding areas.	Principal Contractor	Throughout construction
6. Cement, concrete, fuels, oils, chemicals and other hazardous substances shall be stored, handled and used in a manner that prevents contamination of surface water resources.	Principal Contractor	Throughout construction

7. The discharge of contaminated water, wastewater, concrete wash water or any other pollutants onto the surrounding land or into drainage pathways shall be strictly prohibited.	Principal Contractor	Throughout construction
8. Any spill or incident with the potential to pollute surface water resources shall be contained immediately, cleaned up using appropriate spill response procedures and reported to the Environmental Control Officer (ECO).	Principal Contractor	As required throughout construction
9. Construction activities shall be suspended where heavy rainfall**,** or adverse weather conditions may result in excessive erosion, sediment transport or pollution of surrounding areas until appropriate control measures have been implemented.	Principal Contractor	As required throughout construction
10. The Environmental Control Officer (ECO) shall regularly inspect stormwater management measures, erosion control structures and surrounding areas to verify compliance and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Surface water resources remain free from pollution and excessive sedimentation throughout the construction phase, stormwater and erosion control measures are effectively implemented and maintained, and no significant adverse impacts on the surrounding aquatic environment occur as a result of construction activities.

Objective 3: Terrestrial biodiversity (flora and fauna).

Impact Management Outcome: Impacts on terrestrial biodiversity, including indigenous vegetation, fauna and their associated habitats, are avoided or minimised by confining construction activities to the approved development footprint, protecting environmentally sensitive areas and implementing appropriate environmental management measures throughout the construction phase.

Mitigation Measure	**Responsible**	**Time Period**
1. Construction activities shall be confined to the approved development footprint, and no unnecessary disturbance of surrounding vegetation or habitat shall be permitted.	Principal Contractor	Throughout construction
2. All environmentally sensitive areas and designated no-go areas shall remain clearly demarcated and shall not be accessed, disturbed or utilised for construction-related activities.	Principal Contractor	Throughout construction
3. Vegetation clearance shall be restricted to the minimum area required to facilitate construction and shall not extend beyond the approved development footprint.	Principal Contractor	Throughout construction

4. Existing vegetation outside the approved development footprint shall be retained and protected from accidental damage by construction vehicles, machinery and personnel.	Principal Contractor	Throughout construction
5. Construction personnel shall not intentionally harm, capture, disturb or kill wildlife encountered on site. Where fauna cannot safely move away from construction activities, the Environmental Control Officer (ECO) shall be notified to determine the appropriate course of action.	Principal Contractor	Throughout construction
6. Hunting, trapping, snaring, poisoning or the collection of plants, animals or firewood by construction personnel shall be strictly prohibited.	Principal Contractor	Throughout construction
7. The speed of construction vehicles shall be restricted on site to minimise the risk of collisions with fauna.	Principal Contractor	Throughout construction
8. Open excavations shall, where practicable, be inspected daily for trapped fauna. Any trapped animals shall be safely released by a suitably competent person or under the direction of the ECO.	Principal Contractor	Throughout construction
9. Construction materials, equipment and waste shall be stored within designated areas to prevent unnecessary disturbance of surrounding habitats.	Principal Contractor	Throughout construction
10. Should any Species of Conservation Concern be encountered during construction activities, work in the immediate vicinity shall cease and the ECO shall be notified to determine the appropriate mitigation measures in consultation with a suitably qualified specialist, if required.	Principal Contractor / ECO	As required throughout construction
11. The Environmental Control Officer (ECO) shall undertake regular inspections to verify compliance with the biodiversity mitigation measures and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Construction activities remain confined to the approved development footprint, environmentally sensitive areas remain undisturbed, unnecessary loss of indigenous vegetation and fauna is avoided, no unauthorised disturbance of terrestrial biodiversity occurs, and all biodiversity mitigation measures are effectively implemented throughout the construction phase.

Objective 4: Agricultural impacts.

Impact Management Outcome: Impacts on agricultural land and soil resources are minimised by restricting construction activities to the approved development footprint, preserving soil resources and preventing unnecessary disturbance of surrounding agricultural areas, thereby maintaining the long-term agricultural productivity of the property.

Mitigation Measure	Responsible	Time Period
1. Construction activities shall be confined to the approved development footprint to minimise the loss and disturbance of agricultural land.	Principal Contractor	Throughout construction
2. Disturbance of agricultural land shall be limited to the minimum area required for the construction of the proposed solar photovoltaic (PV) facility and associated infrastructure.	Principal Contractor	Throughout construction
3. Topsoil shall be stripped, stockpiled separately from subsoil and protected from erosion, compaction and contamination for use during site rehabilitation.	Principal Contractor	Throughout construction
4. Construction vehicles and machinery shall utilise designated access routes and working areas to minimise unnecessary soil compaction within and adjacent to the construction footprint.	Principal Contractor	Throughout construction
5. No construction materials, waste, equipment or hazardous substances shall be stored outside designated areas or in a manner that may result in the contamination of agricultural soils.	Principal Contractor	Throughout construction
6. Construction personnel shall not unnecessarily damage existing agricultural infrastructure, including fencing, irrigation infrastructure, access roads or drainage features. Any damage shall be repaired to the satisfaction of the landowner.	Principal Contractor	Throughout construction
7. Dust suppression measures shall be implemented where necessary to minimise dust deposition on adjacent agricultural areas and crops.	Principal Contractor	Throughout construction
8. Disturbed areas not required for the permanent operation of the facility shall be rehabilitated as soon as reasonably practicable following completion of construction activities.	Principal Contractor	Throughout construction and upon completion of construction
9. The Environmental Control Officer (ECO) shall undertake regular inspections to verify compliance with the agricultural mitigation measures and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Construction activities remain confined to the approved development footprint, unnecessary disturbance of agricultural land is avoided, agricultural soils remain free from contamination, agricultural infrastructure is protected or reinstated where necessary, and disturbed areas are appropriately rehabilitated following construction.

Objective 5: Dust generation.

Impact Management Outcome: Dust generated during construction activities is effectively controlled to minimise nuisance to surrounding land uses, protect adjacent agricultural activities, maintain acceptable air quality and prevent unnecessary impacts on the surrounding environment.

Mitigation Measure	Responsible	Time Period
1. Reasonable dust suppression measures shall be implemented where necessary to minimise dust generation from construction activities, exposed surfaces and vehicle movements.	Principal Contractor	Throughout construction
2. Exposed soils and disturbed areas shall be kept to the minimum area necessary for construction activities at any given time.	Principal Contractor	Throughout construction
3. Construction vehicles shall adhere to appropriate speed limits on unpaved access roads and within the construction site to minimise dust generation.	Principal Contractor	Throughout construction
4. Water or other suitable dust suppression methods shall be applied to exposed surfaces, haul roads and stockpiles where excessive dust generation is observed, provided that water is used efficiently and does not result in erosion or excessive runoff.	Principal Contractor	As required throughout construction
5. Soil stockpiles shall be located within designated areas and stabilised or covered where they are likely to generate excessive dust.	Principal Contractor	Throughout construction
6. Construction materials likely to generate dust shall be transported and stored in a manner that minimises wind-blown dust.	Principal Contractor	Throughout construction
7. Construction activities shall be managed to minimise dust impacts on adjacent agricultural land, existing infrastructure and neighbouring properties.	Principal Contractor	Throughout construction
8. Should excessive dust generation or dust-related complaints be received, the Principal Contractor shall investigate the cause and implement appropriate corrective measures without delay.	Principal Contractor	As required throughout construction
9. The Environmental Control Officer (ECO) shall monitor dust management practices during routine site inspections and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Dust generation is effectively controlled throughout the construction phase, no significant dust nuisance or adverse air quality impacts occur beyond the construction footprint, and appropriate corrective measures are implemented where excessive dust generation is identified or complaints are received.

Objective 6: Noise impacts.

Impact Management Outcome: Noise generated during construction activities is managed to minimise disturbance to surrounding land uses, adjacent agricultural operations and nearby receptors through the implementation of appropriate construction practices and good housekeeping measures.

Mitigation Measure	Responsible	Time Period
Construction activities shall be undertaken during normal working hours, unless otherwise approved by the Applicant and relevant authority, where applicable.	Principal Contractor	Throughout construction
Construction vehicles, plant and equipment shall be maintained in good working order to minimise unnecessary noise emissions.	Principal Contractor	Throughout construction
Construction machinery shall not be left idling unnecessarily when not in use.	Principal Contractor	Throughout construction
All equipment fitted with silencers, mufflers or other noise suppression devices shall be maintained in good working condition and shall not be modified or removed.	Principal Contractor	Throughout construction
Construction activities with the potential to generate elevated noise levels shall be planned and managed to minimise the duration and extent of disturbance to surrounding land uses.	Principal Contractor	Throughout construction
Construction personnel shall avoid unnecessary shouting, hooting, loud music or other avoidable sources of noise within the construction site.	Principal Contractor	Throughout construction
Should noise-related complaints be received from surrounding landowners or other affected parties, the Principal Contractor shall investigate the source of the disturbance and implement appropriate corrective measures where necessary.	Principal Contractor	As required throughout construction
The Environmental Control Officer (ECO) shall monitor compliance with the noise management measures during routine site inspections and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Construction-related noise is effectively managed throughout the construction phase, no unnecessary or prolonged noise disturbance occurs, construction equipment is appropriately maintained, and any noise-related complaints are investigated and addressed through the implementation of appropriate corrective measures.

Objective 7: Waste management.

Impact Management Outcome: Waste generated during the construction phase is effectively managed through the application of the waste management hierarchy, ensuring that waste generation is minimised, recyclable materials are recovered where practicable, and all waste is stored, handled and disposed of in a manner that prevents pollution and protects the surrounding environment.

Mitigation Measure	Responsible	Time Period
1. Waste generation shall be minimised through appropriate planning, material management and the efficient use of construction materials.	Principal Contractor	Throughout construction
2. General waste, recyclable waste and hazardous waste shall be separated at source and stored in clearly designated and appropriately labelled containers.	Principal Contractor	Throughout construction
3. Waste storage areas shall be maintained in a neat and orderly condition and shall be located within designated areas to prevent pollution of the surrounding environment.	Principal Contractor	Throughout construction
4. Waste shall not be buried, burned or disposed of on site.	Principal Contractor	Throughout construction
5. General waste shall be removed from the construction site at regular intervals and disposed of at a suitably authorised waste disposal facility.	Principal Contractor	Throughout construction
6. Hazardous waste shall be stored separately from general waste and disposed of by a suitably authorised waste service provider at an appropriately authorised hazardous waste disposal facility.	Principal Contractor	Throughout construction
7. Littering shall be strictly prohibited, and the construction site shall be kept clean and free of waste at all times.	Principal Contractor	Throughout construction
8. Waste collection containers shall be inspected regularly and emptied before reaching capacity to prevent wind-blown litter and pest infestations.	Principal Contractor	Throughout construction
9. Waste disposal records and waste disposal certificates, where applicable, shall be retained and made available for inspection by the Environmental Control Officer (ECO) upon request.	Principal Contractor	Throughout construction
10. The Environmental Control Officer (ECO) shall monitor waste management practices during routine site inspections and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Waste generated during construction is appropriately segregated, stored, collected and disposed of at suitably authorised facilities, the construction site remains free of litter and illegal dumping, waste disposal records are maintained, and no pollution of the surrounding environment occurs as a result of poor waste management practices.

Objective 8: Hazardous substances management (small quantities only).

Impact Management Outcome: Small quantities of hazardous substances required during the construction phase are stored, handled, transported and disposed of in a safe and environmentally responsible manner to prevent pollution of soil and surface water resources, minimise environmental risk and ensure compliance with applicable legislation.

Mitigation Measure	Responsible	Time Period
1. Hazardous substances, including fuels, oils, lubricants, paints and chemicals, shall be limited to the minimum quantities required for construction activities.	Principal Contractor	Throughout construction
2. All hazardous substances shall be stored within designated areas on an impervious surface with appropriate secondary containment capable of containing at least 110% of the volume of the largest container or 25% of the total stored volume, whichever is greater.	Principal Contractor	Throughout construction
3. Hazardous substances shall be stored in appropriately labelled containers that are maintained in good condition and kept securely closed when not in use.	Principal Contractor	Throughout construction
4. Spill kits and appropriate spill response equipment shall be readily available at all hazardous substance storage areas and in areas where hazardous substances are handled or used.	Principal Contractor	Throughout construction
5. Refuelling and the transfer of hazardous substances shall only be undertaken within designated areas using appropriate spill prevention measures.	Principal Contractor	Throughout construction
6. Construction vehicles and machinery shall be regularly inspected for leaks, and any leaks shall be repaired immediately. Equipment that cannot be repaired on site shall be removed from the construction area until repaired.	Principal Contractor	Throughout construction
7. Any spill or leak of hazardous substances shall be contained immediately, cleaned up using appropriate spill response procedures, and contaminated material shall be removed and disposed of at a suitably authorised waste disposal facility.	Principal Contractor	As required throughout construction
8. Hazardous waste generated during construction shall be stored separately from general waste and disposed of by a suitably authorised waste contractor at an appropriately authorised hazardous waste disposal facility.	Principal Contractor	Throughout construction

9. Safety Data Sheets (SDSs) for all hazardous substances used on site shall be readily available and accessible to construction personnel.	Principal Contractor	Throughout construction
10. The Environmental Control Officer (ECO) shall regularly inspect hazardous substance storage and handling areas to verify compliance with this EMPr and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Hazardous substances are appropriately stored, handled and managed throughout the construction phase, no pollution of soil or water resources occurs as a result of hazardous substance handling, spill response equipment is maintained on site, and any spills are promptly contained, remediated and documented.

Objective 9: Traffic and road safety.

Impact Management Outcome: Construction-related traffic is managed in a safe and responsible manner to minimise risks to road users, construction personnel, neighbouring landowners and surrounding communities, while preventing damage to existing road infrastructure and maintaining safe access throughout the construction phase.

Mitigation Measure	Responsible	Time Period
1. Construction vehicles shall utilise approved access routes and designated site access points for the duration of the construction phase.	Principal Contractor	Throughout construction
2. Construction traffic shall be planned and managed to minimise disruption to existing road users, neighbouring properties and adjacent agricultural activities.	Principal Contractor	Throughout construction
3. Appropriate traffic signage and warning signs shall be erected and maintained at the site entrance and along construction access routes where necessary to promote road safety.	Principal Contractor	Prior to and throughout construction
4. Construction vehicles shall comply with all applicable road traffic legislation, including speed limits, vehicle load restrictions and road safety requirements.	Principal Contractor	Throughout construction
5. Vehicle speeds within the construction site and along unpaved access roads shall be restricted to minimise dust generation and ensure the safety of construction personnel and other road users.	Principal Contractor	Throughout construction
6. Construction vehicles and equipment shall be maintained in a roadworthy condition, and any vehicle deemed unsafe shall be removed from service until repaired.	Principal Contractor	Throughout construction

7. Mud, soil, construction materials or debris deposited onto public roads as a result of construction activities shall be removed immediately to maintain safe driving conditions.	Principal Contractor	As required throughout construction
8. Construction vehicles shall not obstruct public roads, access routes or neighbouring property entrances unless appropriate traffic control measures have been implemented.	Principal Contractor	Throughout construction
9. Any damage to existing roads or associated infrastructure resulting from construction activities shall be repaired to the satisfaction of the relevant road authority or landowner.	Principal Contractor	As required throughout construction
10. The Environmental Control Officer (ECO) shall monitor traffic management practices during routine site inspections and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Construction traffic is safely managed throughout the construction phase, access to neighbouring properties and public roads is maintained, no significant traffic safety incidents occur as a result of construction activities, and any damage to existing road infrastructure is promptly repaired.

Objective 10: Heritage resources (Chance Finds Procedure).

Impact Management Outcome: Potential impacts on archaeological, palaeontological and other heritage resources are avoided or minimised through the implementation of a Chance Finds Procedure, ensuring that any previously unidentified heritage resources encountered during construction are appropriately protected and managed in accordance with the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

Mitigation Measure	**Responsible**	**Time Period**
1. All construction personnel shall be informed of the requirements of the Chance Finds Procedure as part of the environmental awareness and induction programme.	ECO / Principal Contractor	Prior to and throughout construction
2. Should any archaeological, palaeontological or cultural heritage resources, including stone tools, pottery, fossil material, human remains or historical structures, be uncovered during construction, all work within the immediate vicinity of the find shall cease immediately.	Principal Contractor	As required throughout construction
3. The discovered heritage resource shall be protected from further disturbance, damage or unauthorised access until it has been inspected by a suitably qualified heritage specialist.	Principal Contractor	As required throughout construction

4.	The Environmental Control Officer (ECO) shall be notified immediately of any suspected heritage find and shall arrange for the appropriate heritage specialist to assess the significance of the discovery.	Principal Contractor / ECO	As required throughout construction
5.	No heritage resource shall be removed, disturbed or damaged unless authorised by the relevant heritage authority and undertaken in accordance with the recommendations of the appointed heritage specialist.	Principal Contractor	As required throughout construction
6.	Construction activities within the affected area shall only recommence once written authorisation or clearance has been provided by the relevant heritage authority or the appointed heritage specialist, where applicable.	Applicant / ECO / Principal Contractor	As required throughout construction
7.	All heritage finds, investigations and associated actions shall be documented and retained as part of the environmental compliance records for the project.	ECO	As required throughout construction

Performance Indicator: No heritage resources are unnecessarily disturbed or damaged during construction, all chance finds are managed in accordance with the approved Chance Finds Procedure and the National Heritage Resources Act, and construction activities only recommence following the implementation of the recommendations of the appointed heritage specialist and, where applicable, the relevant heritage authority.

Objective 11: Visual impacts.

Impact Management Outcome: Visual impacts associated with the construction phase are minimised through good site management, effective housekeeping and the appropriate storage of construction materials, equipment and waste, thereby reducing the temporary visual intrusion of construction activities on the surrounding landscape.

Mitigation Measure		**Responsible**	**Time Period**
1.	Construction activities shall be confined to the approved development footprint to minimise the visual extent of disturbance.	Principal Contractor	Throughout construction
2.	The construction site shall be maintained in a neat, orderly and well-managed condition throughout the construction phase.	Principal Contractor	Throughout construction
3.	Construction materials, equipment, machinery and waste shall be stored within designated areas and shall not be unnecessarily scattered across the site.	Principal Contractor	Throughout construction
4.	Construction waste shall be removed from the site at regular intervals and shall not be allowed to accumulate unnecessarily.	Principal Contractor	Throughout construction

5. Temporary structures, including site offices, storage containers and ablution facilities, shall be located within approved construction areas and maintained in a clean and serviceable condition.	Principal Contractor	Throughout construction
6. Disturbed areas that are no longer required for construction activities shall be rehabilitated as soon as reasonably practicable to reduce the visual impact of exposed soils and disturbed surfaces.	Principal Contractor	Throughout construction
7. Construction lighting, where required, shall be limited to the minimum necessary for safe working conditions and directed away from surrounding properties, where practicable.	Principal Contractor	Throughout construction
8. Upon completion of construction, all temporary infrastructure, surplus materials, equipment and waste shall be removed from the site, unless otherwise approved, and disturbed areas rehabilitated to the satisfaction of the Environmental Control Officer (ECO).	Principal Contractor	Upon completion of construction
9. The Environmental Control Officer (ECO) shall monitor site housekeeping and the implementation of visual management measures during routine site inspections and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: The construction site remains neat and well maintained throughout the construction phase, temporary visual impacts are minimised through effective housekeeping and site management, and all temporary infrastructure, waste and surplus materials are removed and disturbed areas rehabilitated upon completion of construction.

Objective 12: Fire prevention and occupational health & safety.

Impact Management Outcome: Construction activities are undertaken in a manner that minimises the risk of fire, protects the health and safety of construction personnel and the public, and prevents environmental damage through the implementation of appropriate fire prevention measures, safe working practices and compliance with applicable occupational health and safety legislation.

Mitigation Measure	**Responsible**	**Time Period**
1. All construction activities shall be undertaken in accordance with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), and all applicable regulations.	Principal Contractor	Throughout construction
2. A site-specific Health and Safety Plan shall be implemented and maintained for the duration of the construction phase.	Principal Contractor	Throughout construction
3. Appropriate fire-fighting equipment shall be provided at the construction site, including fuel storage areas, hazardous substance storage areas, site	Principal Contractor	Throughout construction

	offices and construction vehicles, and shall be maintained in a serviceable condition.		
4.	Construction personnel shall receive appropriate training on fire prevention, emergency response procedures and the correct use of fire-fighting equipment.	Principal Contractor	Prior to and throughout construction
5.	Smoking shall only be permitted within designated smoking areas, and smoking shall be strictly prohibited in the vicinity of hazardous substance storage areas or where flammable materials are present.	Principal Contractor	Throughout construction
6.	Combustible materials, fuels and other flammable substances shall be stored and handled in accordance with applicable safety requirements and away from potential ignition sources.	Principal Contractor	Throughout construction
7.	Hot works, including welding, cutting and grinding, shall only be undertaken where appropriate fire prevention measures have been implemented and suitable fire-fighting equipment is readily available.	Principal Contractor	Throughout construction
8.	Construction personnel shall wear appropriate personal protective equipment (PPE) relevant to the activities being undertaken and shall comply with all applicable site health and safety requirements.	Principal Contractor	Throughout construction
9.	Emergency access routes shall be maintained at all times to facilitate access by emergency response personnel and vehicles.	Principal Contractor	Throughout construction
10.	All fire incidents, injuries, near misses and health and safety incidents shall be reported, investigated and appropriate corrective actions implemented to prevent recurrence.	Principal Contractor	As required throughout construction
11.	The Environmental Control Officer (ECO) shall monitor compliance with the environmental aspects of fire prevention and occupational health and safety during routine site inspections and recommend corrective actions where necessary.	ECO	Throughout construction

Performance Indicator: Construction activities are undertaken in accordance with applicable occupational health and safety requirements, fire prevention measures are effectively implemented and maintained, appropriate emergency equipment is available on site, and no significant fire incidents or environmental damage occur as a result of construction activities.

Objective 13: Positive socio-economic impacts.

Impact Management Outcome: The construction phase contributes positively to the local economy through the creation of temporary employment opportunities, the utilisation of local goods and services where practicable, and the promotion of safe, responsible and respectful engagement with surrounding landowners and communities.

Mitigation Measure	Responsible	Time Period
1. Employment opportunities shall, where practicable, be made available to suitably qualified local labour for the duration of the construction phase.	Applicant / Principal Contractor	Throughout construction
2. Local suppliers, service providers and contractors shall be utilised where practicable, provided that they meet the required technical, commercial and safety standards.	Applicant / Principal Contractor	Throughout construction
3. Construction personnel shall conduct themselves in a responsible and respectful manner when interacting with neighbouring landowners, surrounding communities and other stakeholders.	Principal Contractor	Throughout construction
4. Access to neighbouring properties and existing agricultural operations shall be maintained throughout the construction phase, unless otherwise agreed with the affected landowner.	Principal Contractor	Throughout construction
5. Construction activities shall be planned and managed to minimise unnecessary disruption to surrounding land uses and existing farming activities.	Principal Contractor	Throughout construction
6. Any complaints received from landowners, neighbouring properties or other interested and affected parties relating to construction activities shall be recorded, investigated and addressed within a reasonable timeframe.	Principal Contractor / Applicant	Throughout construction
7. Where practicable, procurement of construction materials and support services shall prioritise local businesses to maximise local economic benefits.	Applicant / Principal Contractor	Throughout construction
8. The Environmental Control Officer (ECO) shall verify that construction activities are undertaken in accordance with the requirements of this EMPr and that any socio-economic complaints with an environmental component are appropriately addressed.	ECO	Throughout construction

Performance Indicator: Construction activities provide positive socio-economic benefits through local employment and procurement opportunities where practicable, neighbouring land uses and agricultural activities are not unreasonably disrupted, stakeholder complaints are appropriately managed, and construction activities are undertaken in a responsible manner that promotes positive relationships with surrounding landowners and communities.

OPERATIONAL PHASE

During the operational phase of the proposed solar photovoltaic (PV) facility, environmental impacts are expected to be limited and primarily associated with the routine operation and maintenance of the facility and its associated infrastructure. Potential impacts include soil erosion and stormwater management, impacts on surface water resources, terrestrial biodiversity and agricultural land, the generation of maintenance-related waste, the handling and storage of small quantities of hazardous substances, visual impacts associated with the long-term presence of the facility, and fire and occupational health and safety risks associated with the operation of the solar photovoltaic (PV) arrays and Battery Energy Storage System (BESS). These impacts are anticipated to be of low significance and can be effectively avoided, minimised and managed through the implementation of the mitigation measures contained within this Environmental Management Programme (EMPr). Furthermore, the operational phase is expected to provide long-term positive socio-economic benefits through improved energy security, the continued support of agricultural operations and the creation of sustained employment opportunities associated with the operation and maintenance of the facility.

The environmental management objectives (goals) listed below shall be implemented throughout the operational phase of the proposed solar photovoltaic (PV) facility to ensure the ongoing protection of the receiving environment, maintain the effectiveness of environmental mitigation measures, and prevent, minimise and manage the environmental impacts associated with the operation and maintenance of the facility.

1. Agricultural land occupation
2. Biodiversity impacts
3. Aquatic impacts
4. Stormwater and erosion
5. Waste (PV modules and BESS at end-of-life)
6. Fire and electrical safety
7. Visual impacts
8. Positive renewable energy generation
9. Reduced greenhouse gas emissions
10. Energy security for the Mouton Citrus farming operation
11. Long-term socio-economic benefits

Objective 1: Agricultural land occupation

Impact Management Outcome: The operational footprint of the proposed solar photovoltaic (PV) facility is managed to minimise long-term impacts on agricultural land, maintain the surrounding agricultural productivity of the property where practicable, and ensure that the operation and maintenance of the facility do not result in unnecessary degradation of soil or adjacent agricultural areas.

Mitigation Measure	Responsible	Time Period
1. Operation and maintenance activities shall be confined to the approved operational footprint and associated access roads.	Applicant / Operations Manager	Throughout operation

2. Areas outside the approved operational footprint shall not be unnecessarily disturbed during routine inspection, maintenance or repair activities.	Operations Manager	Throughout operation
3. Existing access roads shall be utilised for routine maintenance activities, and the creation of new tracks or access routes shall be avoided unless authorised.	Operations Manager	Throughout operation
4. Ground cover within and around the solar photovoltaic (PV) arrays shall be maintained, where practicable, to minimise soil erosion and preserve soil stability.	Operations Manager	Throughout operation
5. Routine maintenance activities shall be undertaken in a manner that prevents unnecessary compaction, degradation or contamination of surrounding agricultural soils.	Operations Manager	Throughout operation
6. Any areas disturbed during maintenance or repair activities shall be rehabilitated as soon as reasonably practicable following completion of the works.	Operations Manager	As required throughout operation
7. Invasive alien plant species occurring within the operational footprint shall be monitored and controlled in accordance with applicable legislation and recognised best practice.	Operations Manager	Throughout operation
8. The Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, shall periodically inspect the operational footprint to verify that agricultural land is being appropriately managed and that unnecessary land degradation is not occurring.	Applicant / ECO	As required throughout operation

Performance Indicator: The operational footprint remains confined to the approved development area, surrounding agricultural land is protected from unnecessary disturbance or degradation, ground cover is appropriately maintained, disturbed areas are rehabilitated where required, and the long-term agricultural productivity of the surrounding property is not adversely affected by the operation of the facility.

Objective 2: Biodiversity impacts

Impact Management Outcome: The operation and maintenance of the proposed solar photovoltaic (PV) facility are undertaken in a manner that protects terrestrial biodiversity, prevents the unnecessary disturbance of indigenous vegetation and fauna, and maintains the ecological integrity of the surrounding environment through the implementation of appropriate biodiversity management measures.

Mitigation Measure	Responsible	Time Period
1. Operation and maintenance activities shall be confined to the approved operational footprint and existing access roads.	Operations Manager	Throughout operation
2. Environmentally sensitive areas and designated no-go areas shall remain protected and shall not be disturbed during routine inspection, maintenance or repair activities.	Operations Manager	Throughout operation
3. Vegetation management within the operational footprint shall be undertaken only where necessary to maintain the safe and efficient operation of the facility, and unnecessary clearing of indigenous vegetation shall be avoided.	Operations Manager	Throughout operation
4. Existing indigenous vegetation outside the approved operational footprint shall be retained and protected from unnecessary disturbance.	Operations Manager	Throughout operation
5. Invasive alien plant species shall be monitored and controlled in accordance with applicable legislation and recognised best practice to prevent their spread within and beyond the operational footprint.	Operations Manager	Throughout operation
6. Personnel shall not intentionally harm, capture, disturb or kill wildlife encountered during routine operation or maintenance activities.	Operations Manager	Throughout operation
7. Routine maintenance activities shall be planned to minimise disturbance to fauna and their habitats, particularly where wildlife is present within or adjacent to the operational footprint.	Operations Manager	Throughout operation
8. Any injured or trapped fauna encountered during operational activities shall be reported to the Operations Manager and, where necessary, managed in consultation with a suitably qualified environmental specialist.	Operations Manager	As required throughout operation
9. Any previously unidentified Species of Conservation Concern encountered during operation or maintenance activities shall be reported to the Environmental Control Officer (ECO) or suitably qualified environmental representative for appropriate management.	Operations Manager	As required throughout operation
10. Periodic environmental inspections shall be undertaken to verify compliance with the biodiversity management measures and identify any emerging environmental concerns requiring corrective action.	Applicant / ECO	As required throughout operation

Performance Indicator: Operation and maintenance activities remain confined to the approved operational footprint, environmentally sensitive areas remain protected, unnecessary disturbance to indigenous vegetation and fauna is avoided,

invasive alien plants are effectively managed, and the ecological integrity of the surrounding environment is maintained throughout the operational life of the facility.

Objective 3: Aquatic impacts

Impact Management Outcome: The operation and maintenance of the proposed solar photovoltaic (PV) facility are undertaken in a manner that protects surface water resources and the surrounding aquatic environment by preventing pollution, maintaining the integrity of stormwater management infrastructure and minimising the risk of erosion or contaminated runoff.

Mitigation Measure	Responsible	Time Period
1. Operation and maintenance activities shall be undertaken in accordance with the approved Stormwater Management Plan and associated operational procedures.	Operations Manager	Throughout operation
2. Existing stormwater infrastructure, drainage channels and erosion control measures shall be routinely inspected and maintained to ensure their continued functionality.	Operations Manager	Throughout operation
3. Routine maintenance activities shall not obstruct, alter or damage natural drainage pathways or stormwater infrastructure.	Operations Manager	Throughout operation
4. No hazardous substances, waste, wastewater or contaminated runoff shall be discharged onto the surrounding land or into drainage pathways.	Operations Manager	Throughout operation
5. Small quantities of fuels, oils, lubricants and other hazardous substances required for maintenance activities shall be stored, handled and used in accordance with the Hazardous Substances Management Procedure.	Operations Manager	Throughout operation
6. Any spill or incident with the potential to pollute surface water resources shall be contained immediately, cleaned up using appropriate spill response procedures, and reported to the Environmental Control Officer (ECO).	Operations Manager	As required throughout operation
7. Areas disturbed during maintenance or repair activities shall be reinstated and stabilised as soon as reasonably practicable to prevent erosion and sedimentation.	Operations Manager	As required throughout operation
8. Accumulated sediment, debris or vegetation that may impair the performance of stormwater management infrastructure shall be removed as part of routine maintenance activities.	Operations Manager	Throughout operation

9. Periodic inspections shall be undertaken to identify evidence of erosion, sedimentation, stormwater damage or pollution, and appropriate corrective actions shall be implemented where necessary.	Applicant / ECO	As required throughout operation

Performance Indicator: Surface water resources remain free from pollution, stormwater management infrastructure is effectively maintained and fully functional, erosion and sedimentation are appropriately controlled, and no significant adverse impacts on the surrounding aquatic environment occur as a result of the operation and maintenance of the facility.

Objective 4: Stormwater and erosion

Impact Management Outcome: Stormwater runoff and erosion are effectively managed throughout the operational phase to maintain the integrity of the proposed solar photovoltaic (PV) facility, prevent soil loss, minimise sediment transport and protect the surrounding environment from erosion-related impacts.

Mitigation Measure	Responsible	Time Period
1. The approved Stormwater Management Plan shall be implemented and maintained throughout the operational life of the facility.	Operations Manager	Throughout operation
2. Stormwater infrastructure, including drainage channels, culverts, attenuation measures and erosion protection structures, shall be routinely inspected and maintained to ensure their continued functionality.	Operations Manager	Throughout operation
3. Areas showing signs of erosion shall be stabilised as soon as reasonably practicable using appropriate erosion control measures.	Operations Manager	As required throughout operation
4. Ground cover within and around the solar photovoltaic (PV) arrays shall be maintained, where practicable, to minimise soil erosion and promote infiltration.	Operations Manager	Throughout operation
5. Routine maintenance activities shall not impede natural drainage patterns or compromise the effectiveness of the stormwater management system.	Operations Manager	Throughout operation
6. Sediment, debris and vegetation that may obstruct stormwater infrastructure shall be removed during routine maintenance activities to maintain adequate drainage capacity.	Operations Manager	Throughout operation
7. Any maintenance activities resulting in soil disturbance shall be limited to the minimum area necessary, and disturbed areas shall be reinstated and stabilised immediately following completion of the works.	Operations Manager	As required throughout operation

8. Stormwater management infrastructure shall be inspected following significant rainfall events, and any damage or erosion identified shall be repaired without undue delay.	Operations Manager	As required throughout operation
9. The Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, shall periodically inspect stormwater management measures and erosion control structures to verify compliance and recommend corrective actions where necessary.	Applicant / ECO	As required throughout operation

Performance Indicator: Stormwater is effectively managed throughout the operational phase, erosion is prevented or promptly remediated, stormwater infrastructure remains functional and well maintained, and no significant off-site erosion, sedimentation or stormwater-related environmental impacts occur as a result of the operation of the facility.

Objective 5: Waste (PV modules and BESS at end-of-life)

Impact Management Outcome: Waste generated during the operation, maintenance and eventual replacement or decommissioning of the proposed solar photovoltaic (PV) facility, including photovoltaic (PV) modules, Battery Energy Storage System (BESS) components and associated electrical equipment, is managed in accordance with the waste management hierarchy to prevent pollution, maximise opportunities for reuse and recycling, and ensure lawful disposal at appropriately authorised facilities.

Mitigation Measure	**Responsible**	**Time Period**
1. Waste generated during routine operation and maintenance activities shall be minimised through appropriate planning and material management practices.	Operations Manager	Throughout operation
2. General waste, recyclable waste and hazardous waste shall be separated at source and stored in clearly designated and appropriately labelled containers.	Operations Manager	Throughout operation
3. Waste storage areas shall be maintained in a neat and orderly condition and shall prevent the pollution of surrounding soil and water resources.	Operations Manager	Throughout operation
4. Damaged or defective photovoltaic (PV) modules shall be removed, stored and handled in accordance with the manufacturer's recommendations to prevent damage and environmental contamination.	Operations Manager	As required throughout operation
5. End-of-life or defective PV modules, Battery Energy Storage System (BESS) components, batteries and associated electrical equipment shall, where practicable, be returned to the manufacturer, recycled through an	Applicant / Operations Manager	As required throughout operation

appropriately authorised recycling facility or disposed of at an appropriately authorised waste disposal facility in accordance with applicable legislation.		
6. Waste electrical and electronic equipment (WEEE) generated during maintenance or replacement activities shall be managed separately from general waste and disposed of through appropriately authorised service providers.	Operations Manager	As required throughout operation
7. Waste shall not be buried, burned or disposed of on site.	Operations Manager	Throughout operation
8. Waste disposal records, waste manifests and disposal certificates, where applicable, shall be retained and made available for inspection by the Environmental Control Officer (ECO) or competent authority upon request.	Operations Manager	Throughout operation
9. The Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, shall periodically verify that operational waste is being managed in accordance with this EMPr and applicable waste management legislation.	Applicant / ECO	As required throughout operation

Performance Indicator: Operational waste is appropriately segregated, stored and disposed of through suitably authorised facilities, end-of-life photovoltaic (PV) modules, Battery Energy Storage System (BESS) components and associated electrical equipment are managed in accordance with applicable legislation and recognised industry best practice, waste records are maintained, and no pollution of the surrounding environment occurs as a result of poor waste management practices.

Objective 6: Fire and electrical safety

Impact Management Outcome: The proposed solar photovoltaic (PV) facility is operated and maintained in a manner that minimises the risk of fire and electrical hazards, protects personnel, property and the surrounding environment, and ensures the safe and reliable operation of the photovoltaic (PV) arrays, Battery Energy Storage System (BESS) and associated electrical infrastructure.

Mitigation Measure	Responsible	Time Period
1. The solar photovoltaic (PV) facility, Battery Energy Storage System (BESS) and associated electrical infrastructure shall be operated and maintained in accordance with the manufacturer's specifications and applicable industry standards.	Operations Manager	Throughout operation

2. Routine inspections and preventative maintenance shall be undertaken on all electrical infrastructure, including PV modules, inverters, transformers, switchgear, substations, underground cabling and the Battery Energy Storage System (BESS).	Operations Manager	Throughout operation
3. Fire-fighting equipment appropriate to the identified fire risks shall be provided at strategic locations throughout the facility and maintained in a serviceable condition.	Operations Manager	Throughout operation
4. Access to fire-fighting equipment, substations, transformers, the Battery Energy Storage System (BESS) and emergency isolation points shall be maintained at all times.	Operations Manager	Throughout operation
5. Vegetation within and immediately surrounding the operational footprint shall be managed, where necessary, to reduce the accumulation of combustible material and minimise the risk of fire.	Operations Manager	Throughout operation
6. Only suitably qualified and authorised personnel shall undertake maintenance or repair work on electrical infrastructure and the Battery Energy Storage System (BESS).	Applicant / Operations Manager	Throughout operation
7. Appropriate lock-out and tag-out procedures shall be implemented during maintenance activities involving electrical equipment to protect personnel from electrical hazards.	Operations Manager	Throughout operation
8. Emergency response procedures for fire and electrical incidents shall be maintained, and operational personnel shall receive appropriate training in their implementation.	Applicant / Operations Manager	Throughout operation
9. Any fire, electrical fault or safety-related incident shall be reported, investigated and appropriate corrective actions implemented to prevent recurrence.	Operations Manager	As required throughout operation
10. The Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, shall periodically verify compliance with the environmental aspects of fire prevention and electrical safety during operational inspections.	Applicant / ECO	As required throughout operation

Performance Indicator: The solar photovoltaic (PV) facility, Battery Energy Storage System (BESS) and associated electrical infrastructure are safely operated and maintained, fire prevention measures and emergency response procedures remain effective, routine inspections and maintenance are undertaken, and no significant fire or electrical incidents resulting in environmental harm occur during the operational life of the facility.

Objective 7: Visual impacts

Impact Management Outcome: The visual character of the proposed solar photovoltaic (PV) facility is maintained throughout the operational phase through appropriate housekeeping, routine maintenance and vegetation management, ensuring that the facility remains neat, orderly and compatible with the surrounding rural landscape.

Mitigation Measure	Responsible	Time Period
1. The operational footprint shall be maintained in a neat, clean and orderly condition at all times.	Operations Manager	Throughout operation
2. Photovoltaic (PV) modules, mounting structures, fencing, substations, the Battery Energy Storage System (BESS) and associated infrastructure shall be routinely inspected and maintained to ensure they remain in good condition.	Operations Manager	Throughout operation
3. Damaged, deteriorated or vandalised infrastructure shall be repaired or replaced as soon as reasonably practicable.	Operations Manager	As required throughout operation
4. Waste, redundant equipment, construction remnants and unused materials shall not be stockpiled or stored within the operational footprint unless in designated storage areas.	Operations Manager	Throughout operation
5. Vegetation within the operational footprint shall be managed to maintain a neat appearance while avoiding unnecessary disturbance to indigenous vegetation outside the approved development footprint.	Operations Manager	Throughout operation
6. Existing screening vegetation surrounding the facility, where present, shall be retained where practicable and maintained to preserve its visual screening function.	Operations Manager	Throughout operation
7. Security fencing, gates and signage shall be maintained in a safe and visually acceptable condition throughout the operational life of the facility.	Operations Manager	Throughout operation
8. Any graffiti, litter or unauthorised materials deposited within the operational footprint shall be removed as part of routine maintenance activities.	Operations Manager	As required throughout operation
9. The Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, shall periodically verify	Applicant / ECO	As required throughout operation

that housekeeping and visual management measures are being effectively implemented.		

Performance Indicator: The solar photovoltaic (PV) facility remains visually neat and well maintained, operational infrastructure is kept in good condition, waste and redundant materials are appropriately managed, existing screening vegetation is retained where practicable, and no significant deterioration in the visual quality of the surrounding landscape occurs as a result of the operation of the facility.

Objective 8: Positive renewable energy generation

Impact Management Outcome: The proposed solar photovoltaic (PV) facility is operated efficiently and responsibly to maximise the generation of renewable energy, contribute to reducing greenhouse gas emissions and reliance on fossil fuels, and support South Africa's transition towards a more sustainable and resilient energy supply.

Mitigation Measure	Responsible	Time Period
1. The solar photovoltaic (PV) facility shall be operated and maintained to optimise electricity generation and overall system efficiency.	Operations Manager	Throughout operation
2. Routine inspections and preventative maintenance shall be undertaken to ensure the continued performance of the photovoltaic (PV) arrays, Battery Energy Storage System (BESS) and associated electrical infrastructure.	Operations Manager	Throughout operation
3. Damaged or underperforming equipment shall be repaired or replaced as soon as reasonably practicable to minimise operational downtime.	Operations Manager	As required throughout operation
4. Electricity generation and system performance shall be monitored to identify performance trends and facilitate timely maintenance where required.	Operations Manager	Throughout operation
5. The operational life of the facility shall be maximised through the implementation of appropriate asset management and preventative maintenance programmes.	Applicant / Operations Manager	Throughout operation
6. Opportunities to improve operational efficiency and environmental performance shall be considered throughout the operational life of the facility, where technically and economically feasible.	Applicant / Operations Manager	Throughout operation
7. Operational activities shall continue to comply with the conditions of the Environmental Authorisation and the requirements of this Environmental Management Programme (EMPr).	Applicant / Operations Manager	Throughout operation

8. Periodic environmental compliance inspections shall be undertaken by the Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, to verify ongoing compliance with the EMPr and identify opportunities for continual environmental improvement.	Applicant / ECO	As required throughout operation

Performance Indicator: The solar photovoltaic (PV) facility operates efficiently and reliably throughout its operational life, renewable electricity generation is maximised through appropriate maintenance and asset management, compliance with the Environmental Authorisation and EMPr is maintained, and the facility continues to contribute positively towards reducing greenhouse gas emissions and supporting South Africa's renewable energy objectives.

Objective 9: Reduced greenhouse gas emissions

Impact Management Outcome: The operation of the proposed solar photovoltaic (PV) facility contributes to the reduction of greenhouse gas emissions by generating clean, renewable electricity that offsets electricity generated from conventional fossil fuel-based energy sources, while maintaining the long-term operational efficiency of the facility.

Mitigation Measure	Responsible	Time Period
1. The solar photovoltaic (PV) facility shall be operated and maintained to maximise the generation of renewable electricity throughout its operational life.	Operations Manager	Throughout operation
2. Routine inspections and preventative maintenance shall be undertaken to ensure the continued efficiency and reliability of the photovoltaic (PV) arrays, Battery Energy Storage System (BESS) and associated electrical infrastructure.	Operations Manager	Throughout operation
3. Equipment failures and performance losses shall be addressed as soon as reasonably practicable to minimise unnecessary reductions in renewable energy generation.	Operations Manager	As required throughout operation
4. Electricity generation data shall be monitored and maintained to verify operational performance and support continual optimisation of the facility.	Operations Manager	Throughout operation
5. Energy-efficient operational practices shall be implemented, where practicable, to minimise the facility's own operational energy consumption.	Operations Manager	Throughout operation

6. Operational activities shall be undertaken in a manner that supports the long-term contribution of the facility towards reducing greenhouse gas emissions and reliance on fossil fuel-generated electricity.	Applicant / Operations Manager	Throughout operation
7. Periodic environmental compliance inspections shall verify that the facility continues to operate in accordance with the Environmental Authorisation and this Environmental Management Programme (EMPr).	Applicant / ECO	As required throughout operation

Performance Indicator: The solar photovoltaic (PV) facility continues to generate renewable electricity efficiently throughout its operational life, operational performance is maintained through routine maintenance and monitoring, and the facility contributes to the long-term reduction of greenhouse gas emissions by offsetting electricity generated from conventional fossil fuel-based energy sources.

Objective 10: Energy security for the Mouton Citrus farming operation

Impact Management Outcome: The proposed solar photovoltaic (PV) facility provides a reliable and sustainable source of electricity to support the long-term operational requirements of the Mouton Citrus farming operation, improving energy security, reducing exposure to electricity supply interruptions and contributing to the continued productivity and resilience of the agricultural enterprise.

Mitigation Measure	**Responsible**	**Time Period**
1. The solar photovoltaic (PV) facility and Battery Energy Storage System (BESS) shall be operated and maintained to provide a reliable source of electricity for the Mouton Citrus farming operation.	Operations Manager	Throughout operation
2. Routine inspections and preventative maintenance shall be undertaken to maximise system reliability and minimise unplanned outages.	Operations Manager	Throughout operation
3. Operational performance shall be monitored to identify faults or declining system performance, and corrective actions shall be implemented as soon as reasonably practicable.	Operations Manager	Throughout operation
4. Damaged or defective photovoltaic (PV) modules, inverters, Battery Energy Storage System (BESS) components and associated electrical infrastructure shall be repaired or replaced without undue delay to maintain operational reliability.	Operations Manager	As required throughout operation
5. Maintenance activities shall, where practicable, be scheduled to minimise disruption to the electricity requirements of the Mouton Citrus farming operation.	Operations Manager	Throughout operation

6. Appropriate operational procedures shall be maintained to ensure the safe integration and reliable operation of the renewable energy system with the existing electrical infrastructure.	Operations Manager	Throughout operation
7. System performance and maintenance records shall be maintained to support effective asset management and continual operational improvement.	Operations Manager	Throughout operation
8. The Applicant shall periodically review the operational performance of the facility to identify opportunities to improve reliability, efficiency and long-term energy security for the Mouton Citrus farming operation.	Applicant	As required throughout operation

Performance Indicator: The solar photovoltaic (PV) facility provides a reliable source of renewable electricity to support the Mouton Citrus farming operation, system reliability is maintained through routine monitoring and preventative maintenance, operational interruptions are minimised, and the long-term energy security and resilience of the farming operation are enhanced through the continued operation of the facility.

Objective 11: Long-term socio-economic benefits

Impact Management Outcome: The proposed solar photovoltaic (PV) facility continues to provide long-term socio-economic benefits by supporting the sustainability and resilience of the Mouton Citrus farming operation, maintaining employment opportunities, contributing to the local economy and ensuring the reliable operation of critical agricultural infrastructure.

Mitigation Measure	**Responsible**	**Time Period**
1. The solar photovoltaic (PV) facility shall be operated and maintained to support the long-term operational sustainability of the Mouton Citrus farming operation.	Applicant / Operations Manager	Throughout operation
2. Routine operation and maintenance activities shall utilise suitably qualified personnel to ensure the continued safe and efficient operation of the facility.	Operations Manager	Throughout operation
3. Where practicable, local contractors and service providers shall be utilised for routine maintenance, inspections and operational support.	Applicant / Operations Manager	Throughout operation
4. Opportunities for local procurement of goods and services shall be considered, where technically appropriate and economically feasible.	Applicant	Throughout operation

5. The reliable supply of renewable electricity shall be maintained to support agricultural production, irrigation, packing, storage and other associated farming activities.	Operations Manager	Throughout operation
6. Operational activities shall be undertaken in compliance with all applicable environmental, health and safety requirements to ensure the continued responsible operation of the facility.	Applicant / Operations Manager	Throughout operation
7. The Applicant shall periodically review operational performance to identify opportunities to improve operational efficiency, asset performance and the long-term socio-economic value of the facility.	Applicant	As required throughout operation
8. The Environmental Control Officer (ECO), or suitably qualified environmental representative where appointed, shall periodically verify compliance with the environmental requirements of the Environmental Management Programme (EMPr) during the operational phase.	Applicant / ECO	As required throughout operation

Performance Indicator: The solar photovoltaic (PV) facility continues to support the long-term sustainability of the Mouton Citrus farming operation, reliable renewable electricity is maintained, local economic participation is promoted where practicable, operational compliance is maintained, and the facility provides enduring socio-economic benefits throughout its operational life.

IMPLEMENTATION OF THE EMP

ROLES AND RESPONSIBILITIES

The successful implementation of this Environmental Management Programme (EMPr) is dependent upon the commitment of the Applicant and all parties involved in the planning, construction, operation and maintenance of the proposed solar photovoltaic (PV) facility. All persons undertaking activities associated with the development shall comply with the requirements of this EMPr, the Environmental Authorisation, and all applicable environmental legislation.
The responsibilities of the key role players are outlined below.

Applicant (Mouton Citrus (Pty) Ltd)

The Applicant is ultimately responsible for ensuring compliance with the Environmental Authorisation and the requirements of this EMPr throughout the life cycle of the proposed development.

The Applicant shall be responsible for:

- Ensuring that the requirements of the Environmental Authorisation and this EMPr are implemented.
- Appointing suitably qualified contractors, service providers and specialists where required.
- Appointing an independent Environmental Control Officer (ECO) for the construction phase.
- Ensuring that sufficient financial and operational resources are available to implement the mitigation measures contained in this EMPr.
- Ensuring that all contractors, employees and service providers comply with the requirements of this EMPr.
- Maintaining compliance with all applicable environmental legislation and permit conditions.
- Taking reasonable measures to prevent environmental degradation in accordance with the general Duty of Care contained in Section 28 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

Environmental Control Officer (ECO)

An independent Environmental Control Officer (ECO) shall be appointed prior to the commencement of construction activities.

The ECO shall be responsible for monitoring compliance with the Environmental Authorisation and this EMPr throughout the construction phase.

The duties of the ECO shall include, but not be limited to:

- Undertaking regular site inspections and environmental compliance audits during construction.
- Monitoring compliance with the requirements of the Environmental Authorisation and this EMPr.

- Advising the Applicant and Contractor on environmental matters and recommending appropriate corrective actions where necessary.
- Reviewing environmental incidents, complaints and non-compliances and verifying that corrective actions have been implemented.
- Providing environmental awareness guidance where required.
- Maintaining appropriate photographic and written records of environmental performance.
- Preparing environmental compliance reports as required by the Environmental Authorisation.
- Advising the Applicant where activities present an unacceptable environmental risk or where significant non-compliance has been identified.

Should significant environmental non-compliance be identified, the ECO may recommend that the Applicant temporarily suspend the relevant construction activities until appropriate corrective actions have been implemented.
Routine ECO monitoring is not anticipated during the operational phase unless specifically required by the Environmental Authorisation or requested by the Competent Authority.

Contractor

The Contractor shall be responsible for implementing all environmental management measures applicable to the construction phase.

The Contractor shall:

- Ensure full compliance with the Environmental Authorisation and this EMPr.
- Ensure that all employees and subcontractors are aware of and comply with the requirements of this EMPr.
- Implement all mitigation measures relevant to the construction activities.
- Maintain good housekeeping practices throughout the construction period.
- Immediately report environmental incidents, spills and non-compliances to the ECO and Applicant.
- Rectify environmental non-compliances within agreed timeframes.
- Ensure that all required method statements are prepared where specified in this EMPr.

Operations Manager

Following completion of construction, the Operations Manager shall assume responsibility for implementing the operational components of this EMPr.

Responsibilities shall include:

- Implementing all operational environmental management measures contained in this EMPr.
- Maintaining the solar photovoltaic (PV) facility, Battery Energy Storage System (BESS) and associated infrastructure in accordance with manufacturer's specifications.

- Monitoring environmental performance during operation.
- Managing waste, hazardous substances, stormwater and biodiversity protection measures.
- Maintaining environmental records relating to inspections, maintenance, incidents and corrective actions.
- Reporting significant environmental incidents to the Applicant.

Employees and Service Providers

All employees, maintenance personnel and service providers undertaking work on the site shall:

- Comply with the requirements of this EMPr.
- Conduct their activities in an environmentally responsible manner.
- Report environmental incidents or hazards to the Operations Manager.
- Participate in environmental awareness training where required.
- Cooperate with environmental inspections and compliance monitoring.

DOCUMENTATION AND RECORD KEEPING

Proper environmental documentation and record keeping are essential to demonstrate compliance with the Environmental Authorisation, this Environmental Management Programme (EMPr), and applicable environmental legislation throughout the life cycle of the proposed development.

(a) Environmental Auditing

In accordance with Regulation 34 of the Environmental Impact Assessment Regulations, 2014 (as amended), where required by the Environmental Authorisation, the Applicant shall ensure that environmental audits are undertaken to determine compliance with the conditions of the Environmental Authorisation and this EMPr.

Environmental Audit Reports shall be prepared by an independent person with the appropriate environmental auditing expertise and shall contain the information prescribed in Appendix 7 of the Environmental Impact Assessment Regulations, 2014 (as amended). Audit reports shall be submitted to the Competent Authority within the timeframes specified in the Environmental Authorisation.

(b) On-site Documentation

Copies of the following documentation, where applicable, shall be maintained on site or be readily accessible throughout the construction and operational phases:

- Environmental Authorisation and associated conditions.
- Approved Environmental Management Programme (EMPr).

- Copies of any applicable permits, licences or approvals.
- Environmental audit reports (where required).
- Environmental inspection records.
- Incident and non-compliance register.
- Complaints register.
- Environmental induction and training records.
- Waste disposal certificates and waste manifests, where applicable.
- Safety Data Sheets (SDSs) for all hazardous substances stored or used on site.
- Emergency response procedures and emergency contact details.
- Maintenance records for the solar photovoltaic (PV) facility, Battery Energy Storage System (BESS), electrical infrastructure and stormwater management infrastructure.

All environmental records shall be retained for the duration required by applicable legislation or the Environmental Authorisation.

(c) Environmental Register

An Environmental Register shall be maintained throughout the construction and operational phases to record environmental compliance and management activities.

The Environmental Register shall include, where applicable:

- Environmental inspection and audit records.
- Details of environmental incidents and corrective actions.
- Records of environmental non-compliances and their close-out.
- Complaints received and the actions taken to address them.
- Environmental training undertaken.
- Waste disposal records.
- Any other environmental matters relevant to the implementation of this EMPr.

(d) Incident and Non-Compliance Register

An Incident and Non-Compliance Register shall be maintained to record all environmental incidents, spills, complaints and instances of non-compliance.

The register shall include:

- Date, time and location of the incident.
- Description of the incident or non-compliance.
- Persons involved.

- Immediate corrective actions implemented.
- Follow-up actions undertaken.
- Date on which the matter was resolved.

(e) Complaints Register

A Complaints Register shall be maintained throughout the construction and operational phases to record all environmental complaints received from interested and affected parties or members of the public.

The register shall include:

- Date and time the complaint was received.
- Name and contact details of the complainant (where provided).
- Nature of the complaint.
- Investigation undertaken.
- Corrective actions implemented.
- Date on which the complaint was resolved.

All complaints shall be investigated promptly, and reasonable measures shall be implemented to address legitimate environmental concerns.

(f) Method Statements

Where construction activities have the potential to result in significant environmental impacts, the Environmental Control Officer (ECO) may require the Contractor to prepare activity-specific Method Statements.

Method Statements shall describe, as applicable:

- The activity to be undertaken.
- The proposed construction methodology.
- The location of the activity.
- Materials and equipment to be used.
- Potential environmental risks.
- Mitigation measures to be implemented.
- Emergency procedures, where applicable.

Method Statements shall be submitted to the ECO for review prior to the commencement of the relevant construction activity where specifically required by this EMPr or requested by the ECO.

ENVIRONMENTAL AWARENESS AND TRAINING

Environmental awareness and training are essential to ensure that all personnel understand their environmental responsibilities and the requirements of the Environmental Authorisation and this Environmental Management Programme (EMPr).

Prior to commencing work on site, all construction personnel, including subcontractors, shall attend an environmental induction conducted by the Environmental Control Officer (ECO), or another suitably qualified person approved by the Applicant. Personnel shall not commence work until the required environmental induction has been completed.

The environmental induction shall include, as a minimum, the following:

- An overview of the Environmental Authorisation and the requirements of this EMPr.
- Roles and responsibilities relating to environmental management.
- Identification of environmentally sensitive areas and designated no-go areas.
- Site access requirements and approved construction areas.
- Waste management procedures and good housekeeping practices.
- Hazardous substance storage, handling and spill response procedures.
- Dust, noise and erosion control measures.
- Protection of indigenous vegetation, wildlife and other environmental features.
- Fire prevention and emergency response procedures.
- Incident reporting procedures.
- General environmental best practice applicable to the proposed development.

Environmental awareness training shall be an ongoing process throughout the construction phase. Refresher training shall be provided where necessary, particularly where environmental non-compliances are identified, significant changes occur to the construction activities, or new personnel commence work on site. Training shall be provided in a language understood by the workforce, with translators utilised where necessary.

During the operational phase, personnel responsible for operating and maintaining the solar photovoltaic (PV) facility and Battery Energy Storage System (BESS) shall receive appropriate environmental awareness training relevant to their duties. Such training shall include environmental incident reporting, waste management, hazardous substance management, biodiversity protection, emergency response procedures and the operational requirements of this EMPr.

Records of all environmental awareness training, including attendance registers and training topics covered, shall be maintained by the Applicant and made available for inspection upon request.

NON-CONFORMANCE MANAGEMENT

A non-conformance occurs when any activity associated with the proposed development does not comply with the requirements of the Environmental Authorisation, this Environmental Management Programme (EMPr), applicable environmental legislation, permit conditions or approved method statements.

All personnel working on the site shall take reasonable measures to prevent environmental non-conformances and shall immediately report any actual or potential non-conformance to the Environmental Control Officer (ECO) during the construction phase, or the Operations Manager during the operational phase.

Where a non-conformance is identified, the following process shall be implemented:

- The nature and extent of the non-conformance shall be investigated.
- Immediate measures shall be implemented to prevent further environmental harm.
- Appropriate corrective actions shall be identified and implemented within an agreed timeframe.
- The effectiveness of the corrective actions shall be verified.
- The non-conformance and associated corrective actions shall be recorded in the Environmental Register.

Where repeated or significant non-conformances are identified, additional environmental awareness training, revised work procedures or other appropriate management interventions shall be implemented to prevent recurrence.

The Environmental Control Officer (ECO) shall monitor the implementation of corrective actions during the construction phase and verify that non-conformances have been appropriately addressed. During the operational phase, the Operations Manager shall be responsible for ensuring that identified non-conformances are investigated, corrected and appropriately documented.

Failure to comply with the conditions of the Environmental Authorisation or applicable environmental legislation may constitute an offence in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and may result in enforcement action by the Competent Authority.

The Applicant, Contractor, employees and all appointed service providers shall cooperate fully with the Environmental Control Officer (ECO) and the Competent Authority in the investigation and resolution of any environmental non-conformance.

ESCALATION OF NON-CONFORMANCES

Where environmental non-conformances are identified, the Environmental Control Officer (ECO) shall record the non-conformance and notify the Contractor and Applicant.

Corrective actions shall be implemented within a timeframe agreed between the Applicant, Contractor and ECO, taking into account the nature and severity of the non-conformance.

Where the same or similar non-conformance is repeated, or where corrective actions are not implemented within the agreed timeframe, the ECO may recommend one or more of the following:

- Additional environmental awareness training.
- Revision of the relevant work method or procedure.
- Increased environmental monitoring.
- Temporary suspension of the activity giving rise to the non-conformance until appropriate corrective actions have been implemented.
- Notification of the Competent Authority where significant or repeated non-compliance with the Environmental Authorisation has occurred.

The Applicant shall ensure that all corrective actions are implemented and that records of the non-conformance and subsequent corrective actions are maintained within the Environmental Register.

Severity	Example	Required Action
Minor	Housekeeping, littering, documentation omissions	Correct within 24 hours
Moderate	Dust control failures, waste management, minor spills	Immediate corrective action and ECO verification
Major	Damage to no-go areas, pollution of watercourses, unauthorised vegetation clearance, repeated non-compliance	Immediate cessation of the activity, investigation and notification of the Applicant; report to the Competent Authority where required

No.	Recommended Contractual Non-Compliance	Recommended Minimum Penalty	Recommended Maximum Penalty
1	Failure to comply with the demarcation of the approved working areas, construction camp (where applicable) and associated facilities.	R1 000	R5 000
2	Failure to comply with the demarcation or protection of designated No-Go Areas.	R2 000	R10 000
3	Unauthorised access or movement of personnel, vehicles or plant outside approved work areas or within No-Go Areas.	R2 000	R10 000
4	Parking or storage of vehicles, machinery, equipment or materials outside approved laydown or storage areas.	R500	R5 000
5	Failure to comply with the requirements relating to the stripping, stockpiling, protection or reinstatement of topsoil.	R1 000	R5 000
6	Failure to comply with waste management requirements, including littering, illegal dumping or burning of waste.	R500	R5 000
7	Failure to comply with the storage, handling or management of fuels, oils, chemicals or other hazardous substances, or any spill resulting in environmental pollution.	R1 000	R10 000
8	Mixing concrete or washing concrete equipment directly on bare ground, or failure to implement approved concrete management measures.	R1 000	R5 000
9	Failure to implement stormwater management, erosion control or rehabilitation measures.	R500	R5 000

10	**Failure to maintain adequate fire prevention measures or firefighting equipment or causing an uncontrolled fire.**	**R500**	**R5 000**
11	**Refuelling or maintenance of vehicles, plant or equipment outside designated areas without appropriate spill containment measures (except in emergency situations).**	**R500**	**R2 000**
12	**Failure to use drip trays, bunding or other spill containment measures where required, or failure to immediately clean up hydrocarbon spills.**	**R500**	**R2 000**
13	**Failure to comply with approved traffic management measures, resulting in unsafe conditions for road users or site personnel.**	**R1 000**	**R10 000**
14	**Failure to prepare or comply with an approved Method Statement where required by the Environmental Control Officer (ECO).**	**R1 000**	**R5 000**
15	**Excessive dust, noise or emissions resulting from inadequate implementation of mitigation measures.**	**R1 000**	**R5 000**
16	**Failure to attend, or ensure attendance at, compulsory environmental awareness training and induction sessions.**	**R1 000**	**R5 000**
17	**Unauthorised clearance, damage or disturbance of indigenous vegetation or protected environmental features outside the approved development footprint.**	**R2 000**	**R10 000**
18	**Failure to report an environmental incident, spill, heritage find or other significant environmental non-compliance to the ECO within a reasonable timeframe.**	**R1 000**	**R5 000**

ANNEXURE A

POSSIBLE METHOD STATEMENT TEMPLATE FOR CONSTRUCTION PHASE

METHOD STATEMENT FOR THE:

.....

This method statement is to be completed by the Contractor (in consultation with the ECO) at least 5 working days prior to the proposed commencement date of the said work and represents a binding agreement to the Method Statement by all site Contractors and Subcontractors involved in the work for which the Method Statement is submitted.

DATE OF SUBMISSION:.....

CONTRACTOR:.....

SUBCONTRACTORS (IF RELEVANT):.....

A) Describe in detail ***what*** work is to be undertaken?

B) Describe in detail ***where*** on the site the works are to be undertaken and the ***extent***? Provide sketch plan and grid block reference.

C) ***When*** will the works start and what is the anticipated finishing date of these works?

D) ***How*** are the works to be undertaken?

1) Lead supervisor/ foreman name and contact details:

2) Number of personnel:

3) Construction activities:

4) Plant and machinery to be used:

5) Materials to be stored (specify hazardous materials):

6) Other:

E) What ***environmental impacts are anticipated and what precautions*** are proposed to prevent these impacts? (refer to the relevant sections of the EMPr for guidance and provide a general camp layout)

Camp site demarcation:
Toilet facilities:
Litter:
Security:
Plant/machinery (operation, servicing, management, storage, refueling etc.):
Emergencies and fire:
Hazardous materials (handling, management, storage etc.):
Have all personnel involved been through an environmental induction course?
Hazardous substances spill remediation and containment measures:
Other:

DECLARATIONS BY PARTIES

1) CONTRACTOR

I UNDERSTAND THE CONTENTS OF THE METHOD STATEMENT AND THE SCOPE OF THE WORKS REQUIRED OF ME. I FURTHER UNDERSTAND THAT THE METHOD STATEMENT MAY BE AMENDED ON APPLICATION TO THE ABOVE SIGNATORIES, AND THAT THE ENVIRONMENTAL CONTROL OFFICER WILL AUDIT MY COMPLIANCE WITH THE CONTENTS OF THIS METHOD STATEMENT.

_____ (PRINT NAME)

_____ (SIGNED) DATED: _____

2) ENVIRONMENTAL CONTROL OFFICER (ECO)

THE WORK DESCRIBED IN THIS METHOD STATEMENT, IF CARRIED OUT ACCORDING TO THE METHODOLOGY DESCRIBED, IS SATISFACTORILY MITIGATED TO PREVENT AVOIDABLE ENVIRONMENTAL HARM.

_____ (PRINT NAME)

_____ (SIGNED) DATED: _____

3) APPLICANT'S REPRESENTATIVE

THE WORK DESCRIBED IN THIS METHOD STATEMENT, IF CARRIED OUT ACCORDING TO THE METHODOLOGY DESCRIBED, IS SATISFACTORILY MITIGATED TO PREVENT AVOIDABLE ENVIRONMENTAL HARM.

_____ (PRINT NAME)

_____ (SIGNED) DATED: _____

ANNEXURE B

INCIDENT REGISTER AND BASIC ACCIDENT REGISTER TEMPLATES

INCIDENT REGISTER (EXAMPLE)

"*Incident*" means - an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed					
Date (yyyy/mm/dd)	**Incident**	**Comments** *(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)*	**Corrective Action Taken** (*Give details and attach documentation as far as possible)*	**Reference no. for On-Site Logbook** (e.g. Rv 6/12 Inc 1)	**Signature**

BASIC ACCIDENT REGISTER (EXAMPLE)

Date (yyyy/mm/dd)	**Accident**	**Names of Persons Involved**	**Comments, Including Injuries Sustained** *(Include any possible explanations for current accident. Include photographs, records etc. if available)*	**Corrective Action Taken** (*Give details and attach documentation as far as possible)*	**Reference no. for OHS Documentation and Attachments** *(e.g. Rv 6/12 Acc 1)*	**Signature**