THE PROPOSED VEGETATION CLEARING OF APPROXIMATELY 72 HA (CONSISTING OF THREE AREAS OF APPROXIMATELY 5HA, 51 HA AND 37HA) HISTORICALLY PLOUGHED LAND WHERE THE TOPSOIL WAS NOT DISTURBED THE LAST 10 YEARS ON REMAINDER OF FARM SCHALKENBOSCH 229, TULBAGH.
DEA&DP: REF. NO. 16/3/3/2/B5/14/1088/26.

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

in support of an

ENVIRONMENTAL AUTHORISATION

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COMMITMENT AND DECLARATION OF UNDERSTANDING BY CONTRACTOR AND DEVELOPER FOR THE PROPOSED DEVELOPMENT

I, the undersigned …….., as duly authorized by the Contractor, have studied and understand the contents of this document. On behalf of the Contractor, I confirm that the Contractor undertakes to adhere to the conditions as set out herein, unless specifically otherwise agreed to in writing.

Signed at ……. on this …….. Day of …….20……

…….
For Contractor

I, the undersigned ……, as duly authorized by the Developer have studied and approve the contents of this document on behalf of the Developer, for implementation by all Contractors involved at the site.

Signed at ……. on this …….. day of …….20…….

…….
Developer's Representative

DEFINITIONS

Auditing:	In terms of Regulation 34 of the NEMA EIA Regulations, 2014 (as amended), the holder must conduct environmental audits to determine compliance with the conditions of the Environmental Authorisation and the EMPr and submit Environmental Audit Reports to the Competent Authority. The Environmental Audit Report must be prepared by an independent person with the relevant environmental auditing expertise and must contain all the information required in Appendix 7 of the NEMA EIA Regulations, 2014 (as amended).
Biodiversity:	The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.
Contractor:	An employer, as defined in section 1 of the Occupational Health and Safety Act 85 of 1993, who performs construction work and includes principal contractors
Environment:	A place where living, non-living and man-made features interact, and where life and diversity is sustained over time.
Developer:	One who builds on land or alters the use of an existing building for some new purpose
Independent:	Is independent and has no interest in any business related to the development site, nor will receive any payment or benefit other than fair remuneration for the task undertaken
Groundwater:	Subsurface water in the zone in which permeable rocks, and often the overlaying soil, are saturated under pressure equal to or greater than atmospheric.
Landowner:	Holder of the estate in land with considerable rights of ownership or, simply put, an owner of land
Monitoring:	A systematic and objective observation of an organisation's activities and services conducted and reported on regularly.
Natural vegetation:	All existing vegetation species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on a site.
Pollution:	The result of the release into air, water or soil from any process or of any substance, which is capable of causing harm to man or other living organisms supported by the environment.
Protected Plants:	Plant species officially listed under the Threatened or Protected Species regulations as well as on the Protected Plants List (each province has such a list), and which may not be removed or transported without a permit to do so from the relevant provincial authority.
Red Data Species:	Plant and animal species officially listed in the Red Data Lists as being rare, endangered or threatened.
Rehabilitation:	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition, but does involve establishing geological and hydro logically stable landscapes that support the natural ecosystem mosaic.

Site:	Property or area where the proposed development will take place

ACRONYMS

DEA&DP:	Department of Environmental Affairs and Development Planning
DWS:	Department of Water and Sanitation
ECO:	Environmental Control Officer
EA:	Environmental Authorisation
EIA:	Environmental Impact Assessment
EM:	Environmental Manager
EMP:	Environmental Management Programme
EO:	Environmental Officer
ER:	Engineer's Representative
I&AP:	Interested and Affected Party
IEM:	Integrated Environmental Management
PM:	Project Manager
SANS:	South African National Standards

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CHAPTER 1

1.1. Executive Summary

This EMP has been prepared principally in compliance with the requirements of section 24N and Section 34 of the National Environmental Management Act 107 of 1998. This document, together with the conditions in the Environmental Authorisation, must be adhered to.

The EMP must be included as part of all contract documentation for all contractors in the construction phase of the development.

The Author

Enviro-EAP (Pty) Ltd is an independent consulting company and has no interest in any business related to the development site, nor will it receive any payment or benefit other than fair remuneration for the task undertaken, as required in terms of the NEMA Regulations.

This report has been prepared by Nicolaas Hanekom who is a Registered Environmental Assessment Practitioner: 2020/1146 (”EAP”) who holds a Masters Technologiae, Nature Conservation (“Vegetation Ecology and Biodiversity Assessment”) degree from the Cape Peninsula University of Technology. Nicolaas is registered in terms of section 20(3)(a) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), as a Professional Natural Scientist (Ecological Science) Registration Number: 4008274/11. He further qualified in Environmental Management Systems ISO 14001:2004, at the Centre for Environmental Management, North-West University, as well as Environmental Management Systems ISO 14001:2004 Audit: Internal Auditors Course to ISO 19011:2003 level, from the Centre for Environmental Management, North-West University qualifying him to execute audits to ISO/SANS environmental compliance and EMS standards.

He has also completed the suite of Greener Governance courses with certificates in;

- An Overview of Environmental Management at the Local Government Level, Centre for Environmental Management, North-West University;
- Greener Governance for Local Authorities, Centre for Environmental Management, North-West University;
- Tools for Integrated Environmental Management and Governance, Centre for Environmental Management, North-West University.

He further attended and obtained a certificate on Integrated Protected Area Planning at the Centre for Environmental Development, University of Kwa Zulu Natal and a certificate in Project Management (Theory and Practical), through CS Holdings. Nicolaas has lectured in two subjects at the Cape Peninsula University of Technology. He has 26 years of environmental planning experience, working for Free State and Western Cape departments of environmental affairs, where he reviewed and commented on development (EIA) applications, in the West Coast Region.

He has, as practising EAP been responsible for many environmental impact assessments and EIA applications, waste license and atmospheric emission license applications.

He has also been involved in the implementation of several environmental management systems. He has engaged successfully with various clients as set out below.

1.2. Project Description

This section of the report is included in compliance with Section 24N (2) (c) of the National Environmental Management Act 107 of 1998.

The owners propose to clear vegetation of approximately 72 ha (consisting of three areas of 5ha, 51 ha and 37ha) historically ploughed land where the topsoil was not disturbed the last 10 years on remainder of farm Schalkenbosch 229, Tulbagh. No additional water will be required. No irrigation or netting will be used. No roads, pipelines or other infrastructure is required. Only clearing of indigenous vegetation

to reinstate old agricultural lands. The property is zoned Agriculture and is located outside an urban area.

Enviro-EAP is appointed as independent Environmental Assessment Practitioners to undertake the Environmental Impact Assessment Process for the proposed development.

This Environmental Authorization is undertaken in terms of the National Environmental Management Act 107 of 1998 and the EIA regulations 2014 as amended set out in Government Notice (GN R 983, 984 and 985). Listed activities in terms of these regulations have been identified. The nature of the activities to be undertaken requires that a Scoping and Environmental Impact Assessment (EIA) process be undertaken.

Below is a summary of some of the main anticipated impacts related to the proposed development:

- Increased erosion risk and due to the clearing of land for the proposed vegetation clearing leading to increase in storm water flow;
- Biodiversity/ecological impacts on i.e. terrestrial indigenous vegetation and habitat
- Aquatic Biodiversity impacts
- Animal Species impacts
- Social impacts i.e. temporary and permanent job creation;

The EIA will be evaluated by DEA&DP who will either issue an Environmental Authorization (usually with conditions), or alternatively, refuse the application for authorization.

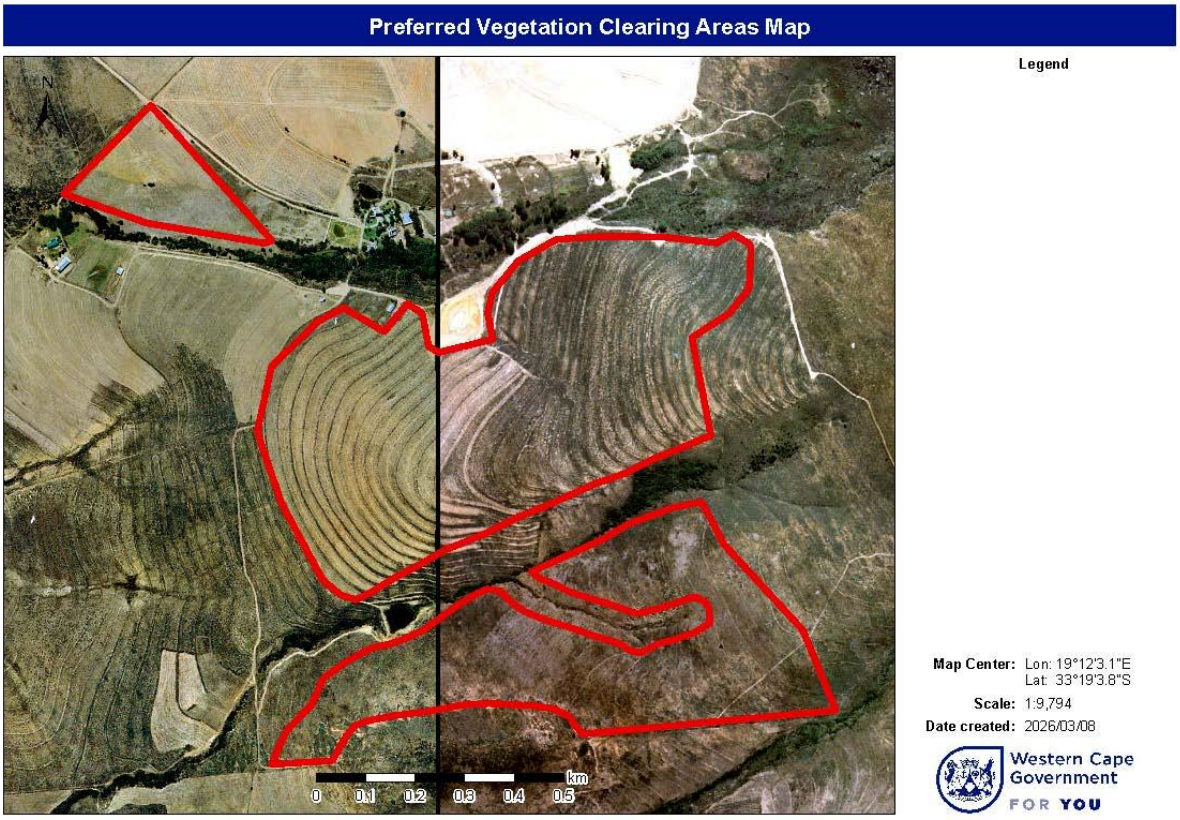

Figure 1: Proposed area to be cleared.

CHAPTER 2

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

It deals with issues relating to the implementation of the EMP.

2.1 Organizational Structure

The organizational structure identifies and defines the responsibilities and authority of the various persons and organizations involved in the project. All instructions and official communications regarding environmental matters must follow the organizational structure.

The Environmental Official (EO), to whom the Engineer's Representative (ER) and/or Environmental Control Officer (ECO) must report and interact, must be the responsible client representative.

The EMP must be an agenda item at the monthly site and operations meetings and the responsible client representative(s) may attend these meetings in order to provide input with respect to compliance with the EMP.

2.2 Responsibilities and Functions of the Environmental Control Officer

The ECO will be responsible for monitoring, reviewing and verifying compliance with the EMP and/or EA by all contractors and site management during site visits.

The ECO duties in this regard will include the following:

With the assistance, where necessary of the ER, to ensure all necessary environmental authorizations and permits have been obtained and are available and visible on site at the ER offices.

- monitor and verify that the EMP and/or EA is adhered to at all times and by taking action if the specifications are not followed;
- conduct the initial environmental awareness training for construction employees before construction commences onsite;
- monitor and verify that environmental impacts are kept to a minimum;
- review and approve construction method statements, with input as appropriate from the ER;
- assist the contractor in finding environmentally responsible solutions to problems;
- report on the environmental issues at the site meetings and other meetings that may be called regarding environmental matters, if requested by ER;
- inspect the site and surrounding areas regularly with regard to compliance with the EMP and/or EA;
- monitor the environmental awareness training for all new personnel coming onto site;
- advise management on the removal of person(s) and/or equipment not complying with the specifications, after collaboration with the ER. Recommendations must be recorded by the ER in Site Instruction Book.
- ensure that activities on site comply with known legislation of relevance to the environment;
- recommend the issuing of penalties via the developer for contraventions of the EMP and/or EA;
- keep a photographic record of progress on site from an environmental perspective; and
- Undertake a continual internal review of the EMP and/or EA and submit a report to the developer and the responsible DEA&DP Environmental Official as according to EA conditions.

2.3 Agreed Work Plan and Site Visit Schedule of ECO

After initial construction start-up site visit it is recommended that an ECO site visit be conducted once a month during construction and annually during operation.

Information recording activity on site, and any guidelines or instructions emanating there from will be routinely made available electronically to the developer and applicable contractors and a copy of the report must be available at the site office.
Clearly matters of urgency or immediate action may be channelled appropriately on an urgent basis.

2.4 Site Manager

The site manager will have the following environmental control responsibilities:

- In conjunction with the ECO will present the environmental education programs to all persons employed on site.
- Consult with the ECO, landowner, developer and any contractor to resolve all environmental issues.
- Issue any instructions from the ECO to the management team via a formal site instruction book or appropriate management tool used for the purpose.
- Take responsibility for the penalty system. The ECO and developer recommendations must be considered when deciding whether or not to impose a penalty.
- The engineer will, via the ECO actions, be accountable for the overall implementation of the Environmental Management Programme.
- Keep a site diary and complaints register

2.5 Contractors

As part of any tender, the tendering contractor must submit a first draft of a contractor's programme, to the developer which must include the environmental considerations to be followed prior to appointment.

The appointed Contractor's representative will have the following responsibilities:

- Ensure that all staff is familiar with the Environmental Management Programme, which explains the environmental policy for the project.
- Allow for sufficient time between surveying the exact locations where services will be intended and actual construction, for the ECO to facilitate and instruct for the removal of plants, seeds and cuttings if necessary.
- The contractor must keep his personnel fully aware of environmental issues and ensure they show adequate consideration to all environmental aspects.
- Establish environmental signs to be erected on the construction site at locations identified by the ECO and approved by the engineer.
- Be responsible for the cost of the restoration of any damage caused, in environmentally sensitive areas, as a result of contractor responsibility regarding negligence. This must be done in accordance with the engineer / ECO's specifications.
- Take responsibility and active steps to avoid any increase in the fire hazard.
- The contractor must take responsibility for implementing all the relevant provisions of the EMP, or if he encounters difficulties with the specifications, he must discuss alternative approaches with the ECO and engineer prior to proceeding.

Failure to comply with the EMP may result in the application of fines as set out, and any reported non-compliance may result in the suspension of work or termination of a contract.

2.6. Record keeping of activities, inclusive of recording of non-compliances and corrective actions

The ECO or ER must keep a record of all activities relating to environmental matters on site, including:

- method statements received and approved;
- issues arising on site;
- cases of non-compliance with the EMP;
- corrective action taken and penalties issued.

This information will be recorded in an appropriate manner by the ECO or ER in a site diary, registers, issues/warning book, etc.

2.7 Compliance with other legislation

It is important that all on site staff are aware of other relevant legislation that may relate to the activities taking place on site, especially local authority required compliances.

CHAPTER 3

Applicable Legislation, Policy and Environmental Principles

3.1. Applicable Legislation Identified

1. ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT, 21 OF 1940
2. BASIC CONDITIONS OF EMPLOYMENT ACT, 75 OF 1997
3. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 130 OF 1993
4. CONSERVATION OF AGRICULTURAL RESOURCES ACT, 43 OF 1983
5. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996
6. EMPLOYMENT EQUITY ACT, 55 OF 1998
7. ENVIRONMENT CONSERVATION ACT, 73 OF 1989
8. ENVIRONMENT CONSERVATION ACT, 73 OF 1989: WESTERN CAPE NOISE CONTROL REGULATIONS
9. FENCING ACT, 31 OF 1963
10. HAZARDOUS SUBSTANCES ACT, 15 OF 1973
11. LABOUR RELATIONS ACT, 66 OF 1995
12. NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT, 103 OF 1977
13. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 107 OF 1998
14. NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 39 OF 2004
15. NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 10 OF 2004
16. NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 59 OF 2008
17. NATIONAL FORESTS ACT, 84 OF 1998
18. NATIONAL HEALTH ACT 61 OF 2003
19. NATIONAL HERITAGE RESOURCES ACT, 25 OF 1999
20. NATIONAL VELD AND FOREST FIRE ACT, 101 OF 1998
21. NATIONAL WATER ACT, 36 OF 1998
22. OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993
23. TOBACCO PRODUCTS CONTROL ACT, 83 OF 1993
24. WATER SERVICES ACT, 108 OF 1997

CHAPTER 4

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

4.1. Monitoring and Auditing

4.1.1 Introduction

In keeping with current environmental and associated legislation, all environmental management procedures and actions must be reviewed and refined on an ongoing basis.

This is in accordance with the dynamic nature of environmental management and allows for the timeous identification and mitigation of issues as they come to light.

The process of review and refinement, built into the requirements of the EMP, is known as monitoring and auditing. The audit must assessment of the effectiveness of monitoring and management arrangements after implementation. The holder must undertake an environmental audit within three (3) months of the commencement of the development activities and submit an Environmental Audit Report to the Competent Authority one (1) month after the completion of the environmental audit.

4.1.2. Roles and responsibilities

Efficient implementation of the performance specifications, effective monitoring and auditing, as well as clear responsibility and accountability allocation requires that various role-players be defined for the construction implementation project.

Depending on the nature and scale of a project, implementing teams could be composed of any number

of role-players, each with their own specified responsibilities.

Therefore, for the purpose of this document, the following role-players are defined, based purely on responsibility and accountability allocation. The actual designation of role-players may vary, but the responsibilities will largely remain as stated.

4.1.2.1. Developer/landowner or custodian of the land

The developer/landowner or custodian of the land is the person or organization with decision making capacity for the land in question, and thus ultimately accountable for what takes place on that land and implementation of the EA and EMP requirements.

4.1.2.2. Contractor

Contractors are appointed to undertake the works as specified in the contract. It is the responsibility of the contractor to do whatever is necessary from their side to ensure that he or an appointed advisor is well versed in environmental studies, so that they may accurately and efficiently carry out the requirements of the environmental specification.

The contractor is liable for any and all remedial work required in terms of the environmental specification, resulting from his environmental negligence, mismanagement and / or non-compliance.

4.1.2.3. Environmental Control Officer

An environmental control officer will manage and undertake monthly environmental inspections for the duration of the construction phase of the project as required.

The contractors or line management are answerable to the ECO for non-compliance with the performance specifications. Issues of non-compliance raised by the ECO/EO must be taken up by the project manager, and resolved as per the conditions of his contract.

Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation and not allowed for in the performance specification) must be endorsed by the project manager.

4.2. The Monitoring Procedure

Environmental monitoring is the continuous evaluation of the status and condition of environmental elements. Its purpose is to detect change that takes place in the environment over time and involves the measuring and recording of physical, social and economic variables associated with development impacts.

Many techniques for environmental monitoring have been proposed, each detailing a specific protocol. Regardless of which technique is used, the ultimate aim is that each environmental management specification be checked by means of a system in which a score may be allocated for:

- Full compliance
- Satisfactory performance
- Unsatisfactory performance and
- No action taken

Completed monitoring reports will be submitted to the project engineer, developer/landowner and the contractor, who will attend to issues. These reports must be kept on file and be made available upon request by any environmental authority requesting such.

All persons employed, the contractor or his sub-contractors, must abide by the requirements of these performance specifications as they apply to the works. Any employees, the contractor or his sub-contractors found to be in breach of any of the environmental specifications, may be ordered to vacate the site forthwith and/or be subject to a disciplinary process.

The order may be given orally or in writing by the ECO. Confirmation of an oral order will be given as soon as practicable, but lack of confirmation in writing must not be a cause for the offender to remain on site, or not be subject to a disciplinary process. Supervisory staff, the contractor or his sub-contractor

may not direct any person to undertake any activities which would place such person in contravention of the EMP, legislation and specifications.

The contractor and staff are deemed not to have complied with the performance specifications if:

- There is evidence of wilful or accidental contravention of any specification included in the specification;
- There is evidence of the contractor carrying out activities not permitted in terms of the EMP, contract and / or the specification;
- There is evidence of environmental negligence and / or mismanagement resulting in negative impacts on the environment;
- Has failed to meet with the requirements of the approved schedule.

The contractor and developer/landowner will be informed via ECO monthly reports, as well as by means of direct instruction (if necessary) as to what corrective actions are required in terms of environmental compliance.

Disregard for an instruction, and failure to respond adequately to complaints from the public will be construed as non-compliance. Non-compliance may lead to parties being penalised.

In more serious cases, the ECO may give notice, and halt operations until such a time that the corrective action is taken and the site complies with the performance specifications.

In cases of persistent non-compliance, the contractor or staff may be evicted from site after disciplinary process is followed. Only the developer/landowner may issue such instruction, retaining any costs required to remedy situations perpetuated by environmental negligence, mismanagement and / or non-compliance.

4.3. The Auditing Procedure

Environmental auditing is the process of comparing the impacts predicted with those which have actually occurred during implementation.

An environmental performance audit examines and assesses practices and procedures which, in the event of failure, would cause an environmental impact or result in an environmental risk. During each of the lifecycle phases, various issues will be monitored. The performance audit will ensure that the monitoring was correctly undertaken and that compliance was best achieved.

In terms of Regulation 34 of the NEMA EIA Regulations, 2014 (as amended), the holder must conduct environmental audits to determine compliance with the conditions of the Environmental Authorisation and the EMPr and submit Environmental Audit Reports to the Competent Authority. The Environmental Audit Report must be prepared by an independent person with the relevant environmental auditing expertise and must contain all the information required in Appendix 7 of the NEMA EIA Regulations, 2014 (as amended).

The holder must undertake an environmental audit within three (3) months of the commencement of the development activities and submit an Environmental Audit Report to the Competent Authority one (1) month after the completion of the environmental audit.

These reports must be kept on record and be made available upon request by the developer/landowner/custodian of the land and any environmental authority or I&AP requesting such.

4.4 Compliance Auditing and Monitoring Schedule/s

Construction Phase	**Submission of Audit Report To**
Monthly ECO compliance monitoring	Construction Site Manager
Annual ECO compliance monitoring	Developer and DEA&DP
Completion of Construction Phase ECO compliance monitoring	Developer and DEA&DP

4.5 Retentions and Penalties

It is recommended that a penalty retention system be combined with the penalty system to both motivate and compel the contractor to adhere to the EMP for the duration of the contract.

In this way incentives may be created to perform (i.e. in the form of the retention amounts that will only be paid to the contractor at the end of the contract), without creating the misunderstanding that adherence to the EMP is optional.

Persistent non-compliance will not only result in the contractor forfeiting any retention amount, but he will also be fined.

Of importance is that the contract specifies exactly how the penalty and retention system will operate, as well as how any funds resultant from retentions and penalties will be utilised.

All such funds must be used to improve environmental conditions on the site in general.

4.5.1. The retention system

For this system, a percentage value for each of the sections priced for in the environmental bill of quantities is retained until the full completion of the contract works.

If the monitoring process reveals persistent and/or wilful non-compliance with any aspect of the environmental performance specifications, then the full retention associated with that particular item will be withheld.

The project may then apply these retained funds to rectify the problem on site possibly making use of other or alternate resources at his disposal.

At the end of the contract or action, all remaining environmental retention amounts will be paid out to the contractor or staff pending approval by the ECO, after having confirmed full compliance with the relevant performance and rehabilitation specifications.

4.5.2. Penalty System

A system of penalties will be introduced to reinforce environmentally sensitive and prudent behaviour. The maximum penalties that will be fined per incident that may be enforced are listed below. The penalty amount will be determined (inter alia) by the severity of the offence.

Non-compliance	R 5 000.00 (ex VAT) per non-compliant act, per day until compliance is achieved
Casual Litter on site resulting from operation	R250 / offence / day
Disposal of any litter or construction material in non-specified area or by non-compliant means	R5000 / m^3/per day
Dumping of cement, concrete, fuel or oil in an area or other than that authorised and suitable	R10 000 per offence/day
Failure to use portable / toilets	R100 / observed incident or evidence of human excrement on site

In addition to the above, all costs incurred by the client/developer to remedy any damage will be the responsibility of the offender.

Should the monitoring process reveal acts of persistent and / or wilful non-compliance with the environmental performance specifications, then the contractor or staff member will be fined according to the specified value of that item. The ECO will issue the fine to the offender on which the value of the

fine will be prescribed. All penalties will be paid directly to an environmental charity / NGO as identified by the ECO.

4.6. Method Statements

Contractors must provide written statements if requested by the ECO on environmentally sensitive aspects of the contract. Environmentally sensitive aspects include by example excavations, work close to sensitive areas, collection and storage of top soil and vegetation, erosion control, wash water control, waste control, etc.

Methods Statement (MS) Content

Examples of sensitive aspects that may require method statements will be requested by the ECO. It is important to note that the ECO may request further methods specification, if it be deemed necessary in his view.

- MS to specify the construction.
- MS to indicate the timing and sequence of events to follow in sensitive areas to give sufficient time for the ECO to survey these areas and remove plants.

The Method Statement must include a site plan, preparatory steps, materials, and supervision details.

Example of Environmental Method Statement Form:

METHOD STATEMENT

CONTRACT:……..……... **DATE:**……..

PROPOSED ACTIVITY (give title of method statement and reference number from the EMP):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:	End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible):

Note: please attach extra pages if more space is required

DECLARATIONS

1) ENVIRONMENTAL SITE OFFICER/ ENGINEERS REPRESENTATIVE [select correct term]

The work described in this method statement, if carried out according to the methodology described, is satisfactorily mitigated to prevent avoidable environmental harm:

_____ _____
(signed) (print name)

Dated: _____

2) PERSON UNDERTAKING THE WORKS

I understand the contents of this method statement and the scope of the works required of me. I further understand that this method statement may be amended on application to other signatories and that the ECO / EO and ER will audit my compliance with the contents of this method statement

_____ _____
(signed) (print name)

Dated: _____

3) APPROVING AUTHORITY (Engineer)

The works described in this method statement are approved.

_____ _____ _____
(signed) (print name) (designation)

Dated: _____

CHAPTER 5

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

5.1. Good Housekeeping

The developer/landowner will ensure the maintenance of “good housekeeping” practices during operations.

This will help avoid several disputes regarding responsibility and will allow for the smooth running of the operation as a whole.

Good housekeeping extends beyond the environmentally sensitive construction methods to include the care for and preservation of the surrounding environment.

5.2 Record Keeping

The developer/landowner will ensure that a filing system, identifying all documentation related to the EMP, is established.

A list of reports likely to be generated during the project is set out below.

All applicable documentation must be included in the environmental filing system catalogue or document retrieval index.

- Approved EMP, authorizations, licenses or permits;
- Final design documents and diagrams issued;
- All communications detailing changes of design/scope that may have environmental implications;
- Daily, weekly and monthly site monitoring reports;
- Complaints register;
- Environmental training manual;
- Environmental training attendance registers;
- Incident and accident reports;
- Emergency preparedness and response plans;
- Copies of all relevant environmental legislation;
- Permits and legal documents as part of emergency preparedness teams e.g. fire teams, etc.;
- Crisis communication manual;
- Disciplinary procedures;
- Monthly site meeting minutes during construction;
- All relevant permits;
- All method statements for all phases of the project.

5.3 Document Control

The developer/landowner will be responsible for establishing a procedure for document control.

The document control procedure must comply with the following requirements:

Documents must be identifiable by organisation, division, function, activity and contact person;
Every document must identify the person and their positions, responsible for drafting and compiling the document, for reviewing and recommending approval, and final approval of the document for distribution;

All documents must be dated, provided with a version number and reference number, filed systematically, and retained for a specified period.

The owner will ensure that documents are periodically reviewed and revised where necessary, and that current versions are available at all locations where operations essential to the functioning of the EMP are performed. All documents will be made available to the external auditor.

CHAPTER 6

6.1. Public Communication Protocols

This section of the report is included in compliance with Section 24N (2) (e) of the National Environmental Management Act 107 of 1998.

The developer/landowner must be responsible for regulating public access to information and compliance reporting.

The developer/landowner must respond to third party or public queries and complaints.

The developer/landowner must also be responsible for maintaining the compliance register to record complaints received and action taken.

CHAPTER 7

This section of the report is included in compliance with Section 24 N 2 (d - g) and 3 (a - b) of the National Environmental Management Act 107 of 1998.

Specialist Recommendations to be adhered to before and During Commencement of Construction, Operational and Decommissioning Phases

Plant Species and Terrestrial Biodiversity Impact (Keet 2025)

This ecological assessment report details the findings of a botanical survey and ecological evaluation conducted on 10 October 2025 for the farm Schalkenbosch 229, Tulbagh, Western Cape province. The proposed activities specifically involve clearing indigenous vegetation that has established on previously ploughed land so the area can be returned to agricultural use. Three disjunct areas were assessed, named Driehoekkamp, Damkamp, and Agterstekamp.

The desktop data, which classified the area as having Very High Biodiversity Theme Sensitivity, was partially contradicted by on-site observations. Fieldwork confirmed that the area does not contain the mapped Breede Alluvium Fynbos and Breede Shale Fynbos, nor does the current Secondary Renosterveld (which has developed over the historic fields) fully conform to true Breede Shale Renosterveld due to past ploughing and the extremely high dominance of renosterbos. Thus, it also does not qualify as being classified as either CBA1 or CBA2 areas. However, it nonetheless holds ecological value.

The most critical finding is the presence of six Species of Conservation Concern (SCC), three of which are Endangered, predominantly in the eastern sections of Damkamp and Agterstekamp. Notably, a large and valuable population of the Near Threatened *Babiana villosa* was recorded. The presence of these species, along with the area's function as a supporting area for the adjacent Witzenberg Nature Reserve, justifies reclassifying the intact portions of Secondary Renosterveld as Ecological Support Area 1 (ESA1). Consequently, the true Site Ecological Importance (SEI) for the Secondary Renosterveld units, particularly the eastern parts of Damkamp as well as the entire Agterstekamp, is scored as Medium.

The most significant negative direct impacts of the proposed construction activities, primarily involving ploughing, are the complete loss of plant communities and ESA1 areas, and potential loss of SCC. Before mitigation, the significance of these impacts is assessed as High. To address this, the report proposes establishing No-Go areas encompassing the easternmost parts of Agterstekamp and Damkamp where SCC are concentrated, as well as the section overlapping the Witzenberg Nature Reserve. Furthermore, buffer zones around watercourses may require a Water Use Licence. Implementing the No-Go areas would effectively reduce the significance of the loss of SCC from High to Low. However, the residual impact on the loss of plant communities and ESA1 areas remains Medium, indicating that while critical species are protected, the overall ecological

impact on Secondary Renosterveld is only partially mitigated. Active management, including the control of invasive alien plant species, is also a necessary mitigation for a Low residual impact. The cumulative impact on provincial and national conservation targets can also be mitigated from Medium-High to Low by preserving the proposed No-Go areas.

Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report (Venter, J.A. 2026)

This Terrestrial Animal Site Sensitivity Verification and Species Specialist Assessment Report evaluates the potential faunal impacts associated with the proposed vegetation clearing on the remainder of Farm Schalkenbosch 229, Tulbagh, Western Cape. The site is situated within a modified agricultural landscape south-east of Tulbagh, where historically ploughed fields, grazing areas and active agricultural lands occur within a broader matrix of fynbos and renosterveld associated with the Witzenberg foothills. The proposed clearing area is approximately 81 ha and consists mainly of historically modified old fields, brush-cut areas, servitude-line vegetation and secondary renosterveld.

The DFFE Screening Tool identified the Animal Species Theme as Medium sensitivity and flagged Sensitive Species 19, Mute Winter Katydid (*Brinckiella aptera*) and Peringuey's Meadow Katydid (*Conocephalus peringueyi*) for assessment. Additional species of conservation concern considered in the assessment include Grey Rhebuck, Leopard, Cape Clawless Otter, Blue Crane, African Darter, Hamerkop and Yellow-billed Egret. Field surveys recorded several faunal species within the development site and surrounding habitats, including Cape Clawless Otter, African Darter, Hamerkop and Yellow-billed Egret.

The main faunal constraint identified in the assessment is the Agterstekamp faunal landscape corridor. This area retains semi-natural secondary renosterveld, drainage-line habitat and a functional linkage with the Witzenberg Nature Reserve within an otherwise transformed agricultural valley. The corridor provides movement, cover and refuge opportunities for fauna and contributes to connectivity between the adjacent protected area, remnant natural vegetation, riparian features and broader foothill / mountain habitats. The faunal landscape connectivity receptor is assessed as having High Site Ecological Importance, and loss or narrowing of this corridor is the most important faunal impact risk associated with the proposed clearing.

A second important receptor is the secondary renosterveld that may provide marginal potential habitat for Sensitive Animal Species 19. The species is Critically Endangered and the site occurs within the broader Tulbagh–Worcester regional context. However, the habitat on site is secondary, historically ploughed, modified, located more on foothill slopes than preferred valley-bottom habitat, and no individuals were recorded during the field survey. The best remaining secondary renosterveld in Agterstekamp and parts of Damkamp is therefore assessed as Medium SEI, while disturbed old fields, cultivated areas, dwellings, gardens and other transformed habitats are assessed as Low SEI for this receptor.

The remaining species-habitat receptors are generally assessed as Low significance in relation to the proposed clearing footprint. Blue Crane and Grey Rhebuck are likely to use the broader agricultural and open habitat mosaic opportunistically. Yellow-billed Egret, African Darter, Hamerkop and Cape Clawless Otter are mainly associated with farm dams, drainage lines, riparian vegetation and wetland-edge features, which can be retained through no-go areas, watercourse buffers and corridor protection. Mute Winter Katydid and Peringuey's Meadow Katydid are considered unlikely to occur within the proposed clearing footprint, and no likely or confirmed habitat receptor was identified for these species.

The overall Site Ecological Importance for the proposed clearing footprint and PAOI is assessed as High, primarily because of the faunal landscape connectivity receptor associated with the Agterstekamp corridor and its linkage with the Witzenberg Nature Reserve. The impact assessment compares a No Clearing option with the Clearing option. The No Clearing option would retain the

existing faunal habitat mosaic, while the Clearing option could result in habitat loss, reduced shrubland structure, narrowing of movement habitat and reduced ecological function if not carefully controlled.

The proposed clearing can be supported from a faunal specialist perspective only if the key avoidance and mitigation measures are implemented. The most important requirement is to retain the 100 m critical faunal corridor associated with the Agterstekamp drainage-line system and to avoid clearing, ploughing, soil disturbance or fencing barriers within this corridor. Further requirements include protection of drainage-line and riparian habitat, maintenance of watercourse buffers, strict footprint control, avoidance or minimisation of clearing in higher-value secondary renosterveld, demarcation of no-go areas, prevention of snaring, hunting and dog-related disturbance, and allowing fauna to move away from active work areas. With these measures in place, the most significant faunal impacts can be avoided or reduced to acceptable levels; without them, residual impacts on faunal landscape connectivity could remain Medium to High.

Freshwater Risk and Impact Assessment (Morton, R., Fortune, F., & Van Zyl, K. 2026)
Delta Ecology was appointed by Enviro EAP to undertake a Freshwater Risk and Impact Assessment for the proposed vegetation clearing on the Remainder of Farm Schalkenbosch 229, located near Tulbagh in the Western Cape. The proposed activity comprises the clearing of indigenous vegetation that has established within historically cultivated agricultural fields to facilitate the return of these areas to agricultural production. The assessment was undertaken in support of the Environmental Authorisation (EA) process following the identification of Very High Aquatic Biodiversity Theme Sensitivity by the National Web-based Environmental Screening Tool.

The assessment confirmed the presence of several non-perennial rivers, associated tributaries, one seep wetland and a highly modified agricultural flow path within or adjacent to the proposed vegetation clearing areas (**Figure 1**). The non-perennial rivers were assessed as being in a largely natural to moderately modified ecological condition (PES Categories B/C), while the seep wetland was assessed as largely natural (PES Category B). These freshwater ecosystems provide important riparian habitat, maintain ecological connectivity within the upper Breede River catchment and contribute to local biodiversity.

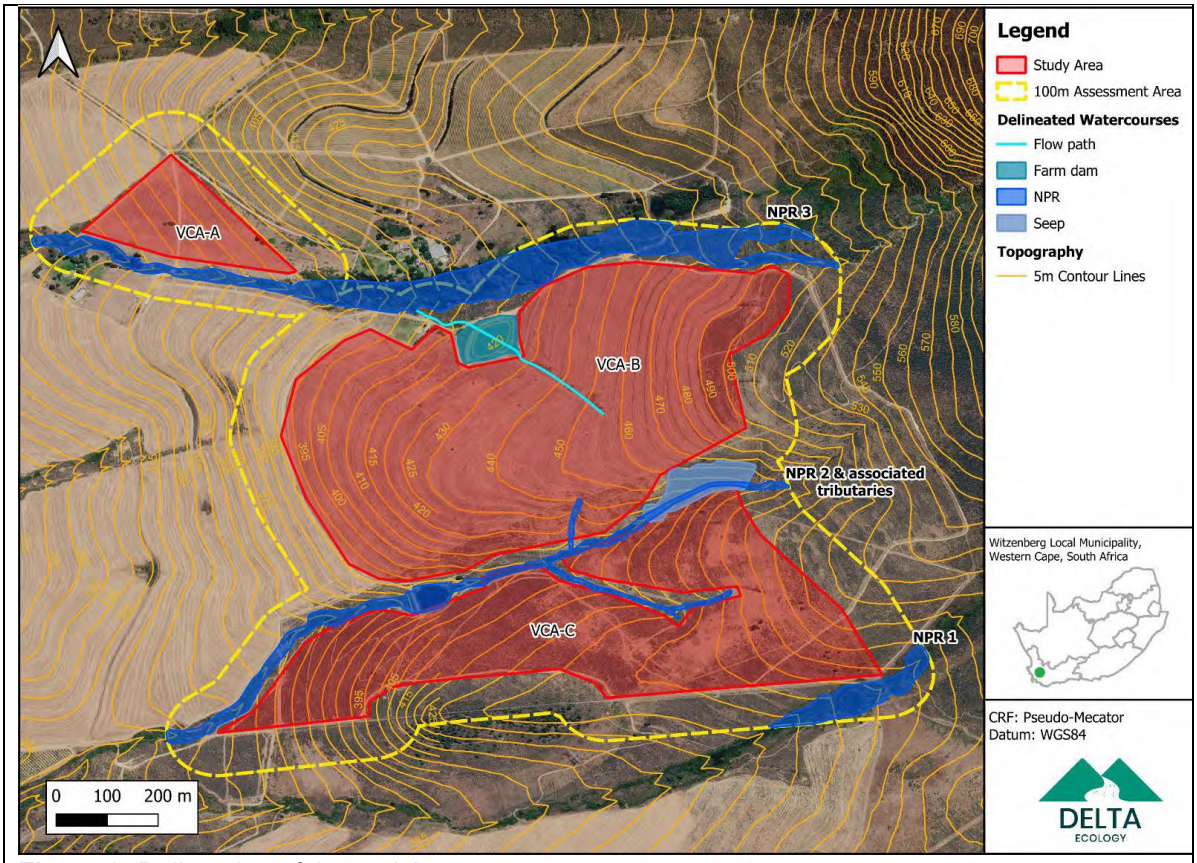

Figure 2: Delineation of the at-risk watercourses.

The agricultural flow path was assessed as PES Category E/F (Critically Modified) and functions primarily as an agricultural drainage feature with negligible remaining aquatic habitat or ecological function. Consequently, from an aquatic biodiversity perspective, avoidance of this feature and the implementation of a freshwater buffer are not considered necessary, provided that vegetation clearing and subsequent agricultural activities do not result in concentrated runoff, erosion or sediment delivery into downstream freshwater ecosystems.

The proposed activity does not include new infrastructure or instream works. The principal freshwater risks are therefore indirect and relate to vegetation clearing in proximity to freshwater ecosystems, including disturbance of riparian habitat, altered surface water runoff, increased erosion and sedimentation, and deterioration of water quality. Four potential impacts were assessed, namely:

- Loss and degradation of freshwater and riparian habitat;
- Alteration of surface water runoff and hydrological processes;
- Increased sediment input and erosion; and
- Water quality impairment.

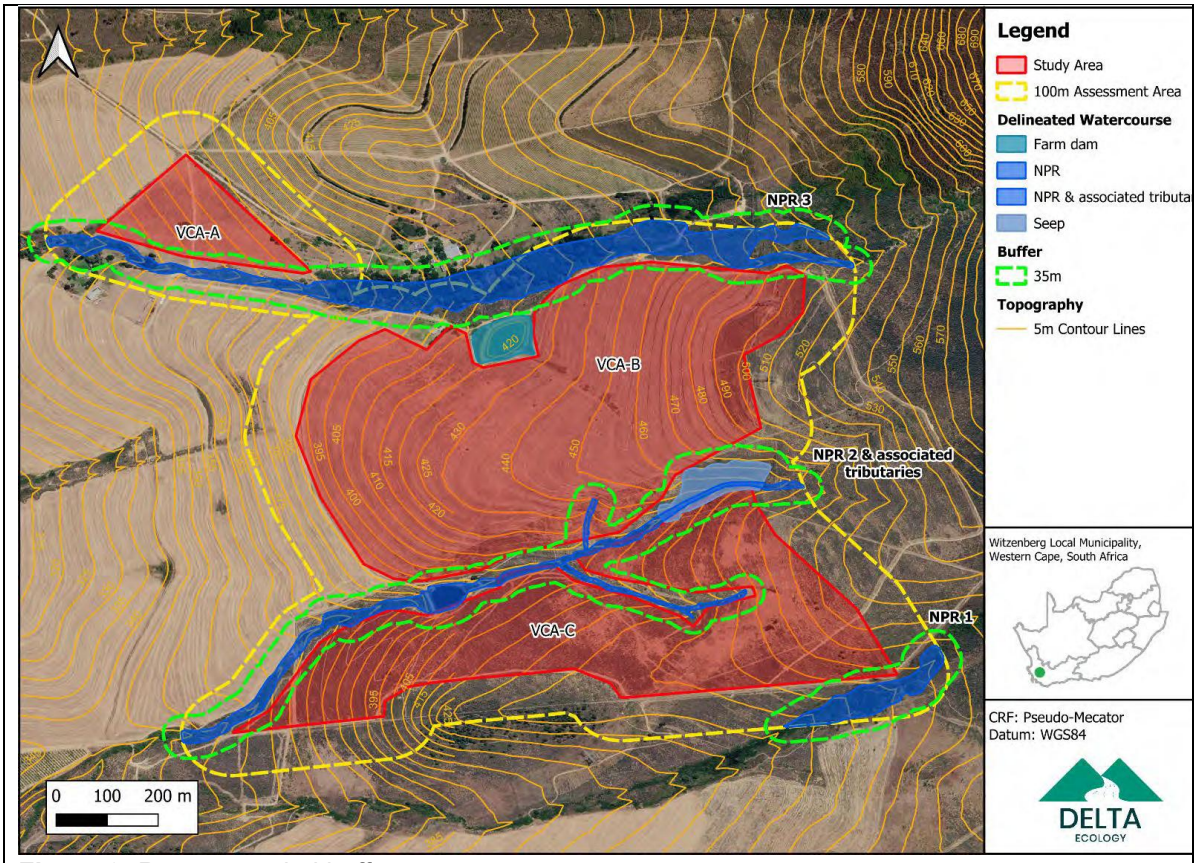

Figure 3: Recommended buffer.

The assessment identified the establishment and maintenance of a 35 m freshwater buffer around all delineated non-perennial rivers and the seep wetland as the primary mitigation measure (**Figure 2**). Additional mitigation includes maintaining existing drainage patterns and contour banks, implementing erosion and sediment control measures, protecting riparian vegetation, applying good agricultural management practices, and preventing contamination of freshwater ecosystems.

Following implementation of the recommended mitigation measures, all identified impacts are expected to reduce to Low significance. The Risk Assessment Matrix (RAM), undertaken in accordance with Government Notice 4167 of 2023, indicates that the anticipated Section 21(c) and (i) water uses fall within the Low Risk category. It is therefore considered that the proposed water uses may be authorised under the applicable General Authorisation (GA), subject to confirmation by the Department of Water and Sanitation (DWS).

From an aquatic biodiversity perspective, the proposed vegetation clearing is considered acceptable, provided that the recommended mitigation measures are implemented, the delineated 35 m freshwater buffers are maintained as permanent no-go areas, and good agricultural management practices are followed throughout vegetation clearing and subsequent agricultural activities.

Specific issues to be addressed in the EMPr as per recommendations of key departments/organ of state and I&APs include:

- Detailed construction (vegetation clearing) management requirements;
- Detailed operational management requirements i.e. stormwater, erosion and alien vegetation;
- Waste management (and associated pollution prevention/mitigation);

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Goal for Planning and Design

Overall Goal for Planning and Design: Undertake the planning and design phase of the development in a way that:

- Ensures that the design of the development responds to the identified environmental constraints and opportunities.
- Ensures that pre-construction activities are undertaken in accordance with all relevant legislative requirements.
- Ensures that adequate regard has been taken of any landowner concerns and that these are appropriately addressed through design and planning (where appropriate).
- Ensures that the best environmental options are selected for the project.
- Enables the development construction activities to be undertaken without significant disruption to other land uses in the area.
- In order to meet this goal, the following objectives have been identified, together with necessary actions and monitoring requirements.

OBJECTIVE PD1: PRE-CONDITIONS

The following pre-conditions must be fully met before any construction activities may commence.

A site meeting between the contractors and the representatives of the developer must take place at least 5 days prior to commencement of construction work to:

- Demarcate micro construction sites, services routes, access routes, working boundaries and no-go areas;
- Discuss methods of stockpiling (vegetation, topsoil, sub-soil, shell-grit, etc);
- Check required toilets and fire-fighting facilities to be in place;
- Discuss and agree restricted access to construction site;
- Sign the Declaration of Understanding (Contractors);
- Discuss and agree communication channels including contact details;
- Discuss and agree areas of responsibility;
- Discuss and agree the demarcation and control of construction and building sites.

Minutes of this site meeting must be kept, and are to be distributed to all parties.

The no-go area must be verified by the ECO prior to commencement of construction. Construction may only take place within the boundaries of the site as the river is directly adjacent to the boundary of the site.

The following equipment must be on every micro or sub site before any construction work is due to start:

- Sufficient and suitable chemical toilet facilities.
- Sufficient refuse bins, which are weather and wind proof, with proper lids.
- 1 x type ABC (all purpose) 12.5 kg fire extinguisher

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

As the Western Cape is a Water stressed province the use of municipal water for construction and operation must as far as reasonably practicable is to be done in accordance with Circular C1 of 2018: Water Crisis Response Guidelines for the Western Cape.

OBJECTIVE PD2: ADVERTISING

The contractors may place no advertising material on the property unless prior formal written permission has been obtained from the landowner.

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

OBJECTIVE PD3: METHOD STATEMENTS

To ensure all construction activities are undertaken with the appropriate level of environmental awareness to minimise environmental risk, in line with the specifications of the EMPr.

The environmental specifications are required to be underpinned by a series of Method Statements, within which the contractors and service providers are required to outline how any identified environmental risks will practically be mitigated and managed for the duration of the contract, and how specifications within this EMPr will be met. That is, the contractor will be required to describe how specified requirements will be achieved through the submission of written method statements to the site manager.

A method statement is defined as “a written submission by the contractor in response to the environmental specification or a request by the site manager, setting out the plant, materials, labour and method the contractor proposes using to conduct an activity, in such detail that the site manager is able to assess whether the contractor's proposal is in accordance with the specifications and/or will produce results in accordance with the specifications”.

The method statement must cover applicable details with regard to:
• Details of the responsible person/s
• Construction procedures
• Materials and equipment to be used
• Getting the equipment to and from site
• How the equipment/material will be moved while on-site
• How and where material will be stored

The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur
• Timing and location of activities
• Compliance/non-compliance with the specifications
• Any other information deemed necessary by the site manager

Method statements must be compiled for all activities which affect any aspect of the environment and should be applied consistently to all activities.

Specific areas to be addressed in the method statement pre, during and post construction may include:

General Administration:
• Designation of access road and protocol to be followed whilst the road is in use;
• Site establishment (which explains all activities from induction training to offloading, construction sequence for site establishment and the different amenities and to be established etc. Including a site camp plan indicating all of these). Preparation of the site (i.e. clearing vegetation, compacting soils and removing existing infrastructure and waste).

Soil Management:
• Soil management/stockpiling and erosion control.
• Excavations and backfilling procedure.

Water Management:
• Stipulate norms and standards for water supply and usage (i.e.: comply strictly to licence and legislation requirements and restrictions)
• Stipulate the storm water management procedures recommended in the storm water management method statement.
• Ablution facilities (placement, maintenance, management and servicing)

Solid Waste Management:
• Description of the waste storage facilities (on site and accumulative).
• Placement of waste stored (on site and accumulative).
• Management and collection of waste process.
• Recycle, re-use and removal process and procedure.

Liquid Waste Management:
• The design, establish, maintain and operate suitable pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended materials into rivers, streams or existing drainage systems.
• Should grey water (i.e. water from basins, showers, baths, kitchen sinks etc.) need to be disposed of, link into an existing facility where possible. Where no facilities are available, grey water runoff must be controlled to ensure there is no seepage into wetlands or natural watercourses.

Dust and Noise Pollution:
• Describe necessary measures to ensure that noise from construction activities is maintained within lawfully acceptable levels.
• Procedure to control dust at all times on the site, access roads, borrow pits and spoil sites (dust control shall be sufficient so as not to have significant impacts in terms of the biophysical and social environments). These impacts include visual pollution, decreased safety due to reduced visibility, negative effects on human health and the ecology due to dust particle accumulation.

Hazardous Substance Storage:
• Ensure compliance with all national, regional and local legislation with regard to the storage of oils, fuels, lubricants, solvents, wood treatments, bitumen, cement, pesticides and any other harmful and hazardous substances and materials (South African National Standards apply.
• Lists of all potentially hazardous substances to be used. Appropriate handling, storage and disposal procedures.
• Prevention protocol of accidental contamination of soil at storage and handling areas. All storage areas, (i.e.: for harmful substances appropriately bunded with a suitable collection point for accidental spills must be implemented and drip trays underneath dispensing mechanisms including leaking engines/machinery).

Fire Prevention and Management:
• Fire management protocols and procedures to be put in place in accordance with relevant legislature.

Environmental Reporting:
• Incident and accident reporting protocol and procedures to be put in place on site in accordance with relevant legislature.

The contractor may not commence the activity covered by the method statement until it has been approved by the site manager, except in the case of emergency activities and then only with the consent of the site manager. Approval of the method statement will not absolve the contractor from their obligations or responsibilities in terms of their contract.

Failure to submit a method statement may result in suspension of the activity concerned until such time as a method statement has been submitted and approved.

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

CONSTRUCTION PHASE
CIVIL CONTRACTOR

Goal for Construction Phase

Overall Goal for Construction:
Undertake the construction the development infrastructure in a way that:
- ensures that construction activities are properly managed in respect of environmental aspects and impacts;
- enables construction activities to be undertaken without significant disruption to other land uses in the area, in particular concerning noise impacts, dust, farming practices, traffic and road use, and effects on local residents;
- minimises the impact on the surrounding area;
- minimises impacts on avifauna and other fauna using the site; and

- minimises the impact on the heritage and historical value of the site
- minimise possible health impacts.

Objectives
In order to meet this goal, the following objectives have been identified, together with the necessary actions and monitoring requirements.

OBJECTIVE C1: WORKING HOURS

Civil & Construction Sites	
Mondays to Fridays	06h00 – 19h00
Saturdays & Public Holidays	06h00 – 17h00

Project Component/s	Development site;
Potential Impact	Surrounding landowners and residents are exposed to noise generated from the development site.
Activities/Risk Sources	Activities associated with site construction; Activities associated with site operation.
Mitigation: Target/Objective	Effective communication with affected and surrounding landowners; Addressing of any issues and concerns raised as far as possible in as short a timeframe as possible.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Contractors may only be present on the site during the public time hours.	Developer and contractor.	Construction and operational phase.

Performance indicator	Effective communication and procedures in place.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

OBJECTIVE C2: SAFETY

Project Component/s	Development site;
Potential Impact	Safety of surrounding landowners and residents; Safety of personnel working on site.
Activities/Risk Sources	Activities associated with site construction; Activities associated with site operation.
Mitigation: Target/Objective	To protect all involved from incidents and injury.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Telephone numbers of emergency services, including the local fire-fighting services, must be posted conspicuously in the contractor's office and near the telephone. No firearms are permitted on the construction site, other than those authorised by the developer for the property security service provider if needed. Notices should be displayed at all public entrances to the property, warning visitors that they are entering a construction site.	Contractor	Construction and operational phase

Performance indicator	Effective communication and procedures in place.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

OBJECTIVE C3: SPEED LIMIT

Project Component/s	Development site.

Potential Impact	Speeding motorists and construction vehicles could injure personnel, members of the public or cause damage to property/infrastructure. Dust.
Activities/Risk Sources	Activities associated with site construction; Activities associated with site operation; Dust may be generated as a result of speeding vehicles on the development site.
Mitigation: Target/Objective	To protect all involved from incidents and injury. Regular maintenance of access roads and low speed limits must be undertaken to minimize dust pollution.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
For security and safety reasons the speed limit on the property for all contractors' vehicles is 30 km per hour. The contractor is responsible for ensuring that all his employees, sub-contractors and delivery vehicles adhere to this rule. Dust control must be implemented to ensure that dust does not become a nuisance to the public during construction activities.	Contractor	Construction and operational phase

Performance indicator	Effective communication and procedures in place.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

OBJECTIVE C4: ROADS

Project Component/s	Access roads.
Potential Impact	Increased traffic/congestion. Construction vehicles pose a potential risk to other road uses and the natural environment if they do not use designated routes.
Activities/Risk Sources	Activities associated with facility construction, receiving of goods by road.
Mitigation: Target/Objective	Designation of specific routes for construction vehicles to reduce impact on the environment and other road users.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Only existing access routes to the property will be used during construction work, so as to control the movement of construction vehicles. The contractor shall ensure that access to construction sites and associated infrastructure and equipment is designated off-limits to the public at all times during construction. Traffic safety measures shall be considered in determining entry or exit points to public roads.	Contractor	Construction phase

Performance indicator	To minimise the impacts on road users and the environment.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

OBJECTIVE C5: ARCHAEOLOGY AND PALAEONTOLOGY MANAGEMENT

Project Component/s	Development site;
Potential Impact	The loss of cultural or heritage resources.
Activities/Risk Sources	Activities associated with site construction; Activities associated with site operation.

Mitigation: Target/Objective	To protect and mitigate the potential loss of cultural and heritage resources.

Mitigation: Action/Control	Responsibility	Timeframe
Should any heritage or fossil remains be exposed during any excavation or related activities, these must immediately be reported to the provincial heritage resource authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No.25 of 1999) via the ECO. Heritage remains uncovered or disturbed during earthworks must not be disturbed until inspection and verified by the professional. Graves located within the proposed development area must be clearly demarcated prior to commencement of any clearing or ground-breaking activities.	Contractor	Construction phase

Performance indicator	Protection of heritage resources
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

OBJECTIVE C6: AN EFFECTIVE MONITORING SYSTEM TO DETECT ANY LEAKAGE OR SPILLAGE OF ALL HAZARDOUS SUBSTANCES DURING THEIR TRANSPORT, HANDLING USAGE AND STORAGE. THIS MUST INCLUDE PRECAUTIONARY MEASURES TO LIMIT THE POSSIBILITY OF OIL AND OTHER TOXIC LIQUIDS FROM ENTERING THE SOIL OR STORM WATER SYSTEMS.

Project Component/s	Development site.
Potential Impact	Contamination of soil, storm water and ground water resources by hazardous substances.
Activities/Risk Sources	Activities associated with site construction; Activities associated with site operation.
Mitigation: Target/Objective	Prevention and mitigation of the environment contaminated as a result of exposure to hazardous substances.

Mitigation: Action/Control	Responsibility	Timeframe
The EA holder, Landowner, Site Environmental Officer and Environmental Control officer will do daily, weekly and monthly inspections and report and monitor compliance with the management actions included in the EMPr and EA conditions. These monitoring and reporting requirements are recorded in several sections of the EMPr. Monitoring will focus on signs of spillages and procedures during handling and storage of dangerous goods as described in the EMPr. The section on storage and handling of dangerous goods in the EMPr will be enforced. Work within site boundaries with no construction activities outside the boundary of the proposed development. During the construction phase of the project, the impact on the no go areas should be kept to a minimum. After the construction phase, any impacted areas outside the development area should be rehabilitated.	Contractor	Construction phase

Performance indicator	Impacts on hydrological features minimized and mitigated
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit report to be submitted once construction is completed.

Waste Management

Waste is defined as any matter for which the current user has no further purpose, or any matter, gaseous, liquid, or solid or any combination thereof originating from any residential, commercial or industrial use, which has been discarded, accumulated, or stored.

It further is worth noting that on average 80% of waste management costs accrue to transport.

Principally three types of waste occur-

- Gaseous	Open fires
- High moisture (effluent)	sewerage/waste water/ petroleum products
- Low moisture (solid/semi solid)	glass/plastic/ cardboard/ paper/ domestic/ chemical

Some potential consequences-

- Salination of ground/surface/ river water.
- Eutrophication (nutrient enrichment) of natural areas.
- Microbiological contamination of natural areas.
- Sediment & silt migration inflows.
- Harmful inorganic/organic compounds introduction into soil.

Chemical residues and empty containers are required as per purchase contract to be removed ex site by the original supplier. The supplier is asked to further declare that such waste is disposed of within accepted Waste Management Programs standards.

Identified Waste Streams:
Components-
Bottles Tins/cans & glass
Organic Waste (cleared vegetation)
Hazardous waste (used oils, fuel, filters, etc.)
Empty chemical herbicide containers

Integrated Waste Management Strategy:
Waste Avoidance-
Objective is to promote the concept of minimisation in the generation of any waste in all activities and sites.

Waste Reduction-
To promote the reduction of all waste by ensuring that nothing that can be decomposed is disposed of to waste as opposed to recycling.

Waste Recycling-
Re-using waste or selling waste to recycling companies as far as and if possible to prevent re-usable waste from going to municipal landfill site.

Waste Disposal-
To store, dispose or treat all waste that cannot be avoided, recycled, or composted at licensed facilities within regular operational and environmental monitoring and always in accordance with regulatory requirements.

OBJECTIVE 1: HERBICIDES, PESTICIDES AND FERTILIZERS

Project Component/s	Cleared cultivated areas
Potential Impact	Adjacent land/property or natural environments contaminated by the application of herbicides, fertilizers and pesticides.
Activities/Risk	Activities associated with site operation.

Sources	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment and surrounding land users.

Mitigation: Action/Control	Responsibility	Timeframe
All legal requirements regarding herbicide application procedures must be complied with. It is vital that farm management becomes familiar with all the information detailed on every herbicide label before using it. The instructions on the label must be strictly followed throughout. All necessary precautions to prevent overspray of herbicides outside of the cultivated areas and onto natural veld must be implemented. All personnel working with any herbicide, pesticide or fertilizer must be registered and comply with the requirements set in these registrations. The farm manager must put a system in place to control the use of herbicides and pesticides. All equipment associated to herbicides and pesticides must be maintained in accordance to the set standards. The disposal of all redundant and empty containers of herbicides and pesticides must be controlled and disposed of at a waste management facility licensed under the National Environmental Management: Waste Act.	Farm manager	Operation phase

Performance indicator	Herbicide, pesticides and fertilizer use is controlled to prevent impacts on the environment and surrounded land uses.

OBJECTIVE 2: AN EFFECTIVE MONITORING SYSTEM TO DETECT ANY LEAKAGE OR SPILLAGE OF ALL HAZARDOUS SUBSTANCES DURING THEIR TRANSPORT, HANDLING USAGE AND STORAGE. THIS MUST INCLUDE PRECAUTIONARY MEASURES TO LIMIT THE POSSIBILITY OF OIL AND OTHER TOXIC LIQUIDS FROM ENTERING THE SOIL OR STORM WATER SYSTEMS.

Project Component/s	Cleared cultivated areas
Potential Impact	Contamination of soil, storm water and ground water resources by hazardous substances.
Activities/Risk Sources	Activities associated with operations, especially during planting and harvesting; Activities associated with site operation.
Mitigation: Target/Objective	Prevention and mitigation of the environment contaminated as a result of exposure to hazardous substances.

Mitigation: Action/Control	Responsibility	Timeframe
The Landowner will do daily, weekly and monthly inspections and report and monitor compliance. Monitoring will focus on signs of spillages and procedures during handling and storage of dangerous goods. The section on storage and handling of dangerous goods be enforced. Work within site boundaries with no activities outside the cleared and cultivated areas.	Contractor	Construction phase

Performance indicator	Impacts on hydrological features minimized and mitigated
Monitoring	This will be monitored by the farm manager during site visits and recorded, reported and proof kept on file on site.

OBJECTIVE 3: DIESEL FUEL AND LUBRICANT HANDLING PROGRAMME

Project Component/s	Cleared cultivated areas

Potential Impact	Contamination of soil, storm and ground water resources as a result of an oil/diesel/lubricant spill/leak.
Activities/Risk Sources	Activities associated with site operation.
Mitigation: Target/Objective	To protect and mitigate impacts of contaminants on the environment and hydrological features.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Servicing of vehicles and machinery to take place of site. All vehicles must be in a good condition with no leakages leading to possible contamination of soil or water supplies. The following conditions related to the temporary fuel tanks must be implemented: The fuel tanks must be designed and installed in accordance with relevant Oil Industry standards and SANS codes where applicable for the aboveground storage tanks. The tanks must be located within a bund (110 % of the tanks capacity) in order to contain potential spills. During fuel tanker delivery, the tanker driver must be present at all times during product offloading. Should an incident occur the supply vehicle emergency cut-off switch must be activated to immediately stop fuel delivery. Flexible hoses with dry-break couplings and emergency isolation must be used. All spillage incidences and actions taken consequent thereto must be reported to the ECO and recorded in the site register. All fuel and flammable liquids should be stored under secure and fenced conditions and in a bunded site with the volume of the bunding capable of holding 110% of the liquid. The applicant must ensure that effective stock inventory monitoring and regular auditing take place for the early identification of possible leaks. The requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), must be adhered to. Within three months of the tanks ceasing to be used the tanks must be removed at the expense of the applicant, and the site, including all associated infrastructure must be rehabilitated to the satisfaction of the relevant authority. **Refuelling:** Refuelling of equipment must be conducted from the bunded fuel tank and pump at the contractor's camp. Fuel tanks must be bunded and supplied with a concrete apron. The concreted refuelling apron will be constructed with a drain along its extremities to collect any diesel contaminated run-off and channel it to the oil trap where separated oil will be collected and disposed of in the oil recycling container and process. Any spills on the concrete apron of floor below the tank are to be treated with OT8 or Spillsolve or equivalent as per the product instructions. A 500-litre drawn trailer to convey diesel to the equipment for re-fuelling may also be used. Such trailer will be drawn by a specified vehicle and driver. Such tow vehicle may travel at 20kms per hour maximum at any time, be clearly identifiable as such, and may only tow the diesel cart should the pre requisite drip trays and emergency equipment be on the vehicle at the time.	Contractor	Construction phase

On-Site emergency repairs: Only small mobile plant and emergency repairs are to take place on site. These will require the provision of drip trays and funnels to ensure that no oil or fuel leakages occur onto the ground. Should such spill take place, then the oil saturated soil is to be placed in suitable containers and disposed of at a hazardous waste disposal site. Any contamination of soil is to be treated with Spillsolve or similar product. Contaminated water as a result of an oil or fuel spillage on the area should similarly be treated in appropriate way, and the polluted water should not be specifically removed and not allowed to merge with run-off water collected in the trap collecting all run offs from the slab. **Collection of contaminated spares and waste oils:** Contaminated spares, oil filters, gaskets, water, etc. will be collected in separate holders at the designated storage facility for disposal at a licensed H:h site. Staff will require instruction in: • Deleterious effects of oil / fuel on the environment • Identification of oil leaks • Handling of oil / fuel leaks into soil • Location and method in storage of contaminated spares • Fire prevention and emergency drills in case of an accident		

Performance indicator	Ensure that no spillages occur and if it does occur that it is handled and cleaned up accordingly.

OBJECTIVE 4: APPROPRIATE HANDLING AND STORAGE OF CHEMICALS, HAZARDOUS SUBSTANCES AND WASTE (WASTE MANAGEMENT PLAN)

The operation phase will involve the storage and handling of a variety of chemicals including oils and lubricants. The main wastes expected to be generated by the facility will include general solid waste and liquid waste, and may include hazardous waste.

Project Component/s	Cleared cultivated areas
Potential Impact	Incorrect storage, handling, transporting and disposing of hazardous substances resulting in the contamination of soil, storm and ground water resources. Incorrect storage, handling, transporting and disposing of general solid waste resulting in litter, storm water pollution, and creating a nuisance to adjacent landowners/residents. Incorrect storage, handling, transporting and disposing of effluent/liquid waste resulting in the contamination of the storm water system, adjacent property, or hydrological systems. Poor waste management practices, resulting in waste not being reduced, re-used or recycled.
Activities/Risk Sources	Activities associated with site operation; Vehicles associated with site; Hydrocarbon use and storage; Using unregistered waste transporters / facilities.
Mitigation: Target/Objective	Protect and mitigate impacts on the environment and hydrological features;

	Ensure that the storage and handling of chemicals and hydrocarbons on-site does not cause pollution to the environment or harm to persons; Ensure that the storage and maintenance of machinery on-site does not cause pollution of the environment or harm to persons; Comply with waste management guidelines; Minimise production of waste; Ensure appropriate waste storage and disposal; Avoid environmental harm from waste disposal;

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Implement site-specific waste management plan during the operation phase. Specific areas must be designated on-site for the temporary management of various waste streams, i.e. general refuse and contaminated waste as required. Location of such areas must seek to minimise the potential for impact on the surrounding environment, including prevention of contaminated runoff, seepage and vermin control. Where practically possible waste on-site must be reused or recycled. Bins and skips must be available on-site for collection, separation, and storage of waste streams. Disposal of waste must be in accordance with relevant legislative requirements, including the use of licensed contractors and disposal at appropriately licensed waste disposal sites. The National Information Systems Regulation must be adhered to in terms of registering and reporting of hazardous waste generated on site via the Integrated Pollutant Waste Information System (IPWIS) if required. All stored fuels to be maintained within a sealed bund and on a sealed surface. The bund must be at least 110% of the volume of the total containers. Adjacent fuelling areas situated around fuel tanks must be provided with an impervious layer or drip trays must be used during refuelling; Areas around fuel tanks must be appropriately bunded or contained in an appropriate manner as per the requirements of SABS 089:1999 Part 1; Fuel storage areas must be inspected regularly to ensure bund stability, integrity, and function; Oily water from bunds at the substations must be removed from site by licensed contractors; The storage of flammable and combustible liquids such as oils will be in designated areas which are appropriately bunded, and stored in compliance with MSDS files; Any storage and disposal permits/approvals which may be required must be obtained, and the conditions attached to such permits and approvals will be compiled with and copies kept on site in the environmental file; Transport of all hazardous substances must be in accordance with the relevant legislation and regulations	Contractor	Construction phase

Construction sub-contractors must provide specific detailed waste management plans to deal with all waste streams; Spill kits must be made available on-site for the clean-up of spills and leaks of contaminants. Corrective action must be undertaken immediately if a complaint is received, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the affected environment as much as practically possible and implementing preventive measures. Implement an effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems. Leakage of fuels must be avoided at all times and if spillage occurs, it must be remediated immediately. In the event of a major spill or leak of contaminants, the relevant administering authority must be immediately notified as per the notification of emergencies/incidents. Any contaminated/polluted soil removed from the site must be disposed of at a licensed hazardous waste disposal facility. Hydrocarbon waste must be contained and stored in sealed containers within an appropriately bunded area Waste and surplus dangerous goods must be kept to a minimum and must be transported by approved waste transporters to sites designated for their disposal and copies of the safe disposal slips must be kept in the environment file on site. Documentation (waste manifest) must be maintained detailing the quantity, nature, and fate of any regulated waste. Waste disposal records must be available for review at any time. An integrated waste management approach that is based on waste minimisation must be used and must incorporate reduction, recycling, re-use and disposal where appropriate. Green waste generated during the site clearing phase must be taken to an approved municipal or private green waste facility. The Department has initiated a 50% ban of organic waste from landfill by 2022 and a complete ban of organics to landfill by 2027. It is therefore advised that organics be separated from the general waste stream and beneficiated where possible. Alternative treatment technologies for beneficiating this waste type must be considered.		

Performance indicator	Limited chemical spills outside of designated storage areas; No water or soil contamination by spills;

	No complaints received regarding waste on site or indiscriminate dumping; Provision of all appropriate waste manifests for all waste streams.

OBJECTIVE 5: ANTI-EROSION MEASURES (STORMWATER MANAGEMENT)

Project Component/s	Cleared cultivated areas
Potential Impact	Wind/water erosion as a result of operation activities.
Activities/Risk Sources	Activities associated with site operation.
Mitigation: Target/Objective	Reduce the impact of erosion by implementing anti-erosion measures.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Agricultural engineers contours must be maintained. Measures can include brush packing, anchovy net stabilisation, etc. Where required erosion protection measures must be installed.	Contractor	Construction and operational phase

Performance indicator	All possible erosion impacts are controlled and rehabilitated.

CHAPTER 8

ENVIRONMENTAL REPORTING

In order to ensure that the necessary environmental issues are adequately addressed and recorded, the following environmental reporting shall be undertaken:

- Incident reporting; and
- Compliance reporting

The applicant must ensure that "Any emergency incident, originating at the facility, which falls within the definition of section 30(1) of the National Environmental Management Act (NEMA), Act 107 of 1998, must be dealt with by the facility in accordance with Section 30 of NEMA". In the event of any incident the facility must ensure containment by the responsible person and report the incident to the West Coast District Municipality, Cederberg Local Municipality, and DEA&DP.

See below for a template of an Incident Report to serve as a guideline for the recording and addressing of emergency incidents as and when they occur.

ENVIRONMENTAL INCIDENT REPORT

DATE:	**File Ref:**
NAME:	**Copy to:**
EXACT LOCATION OF INCIDENT:	

SECTION 1 : DESCRIPTION OF INCIDENT

SECTION 2 : REMEDIAL ACTION REQUIRED

Remedial Action Due Date:
Confirmation of implementation: **Name:** **Date:**

SECTION 3 : RELEVANT DOCUMENTATION

SECTION 4 : SIGNATURES

Municipal Engineer:

.....

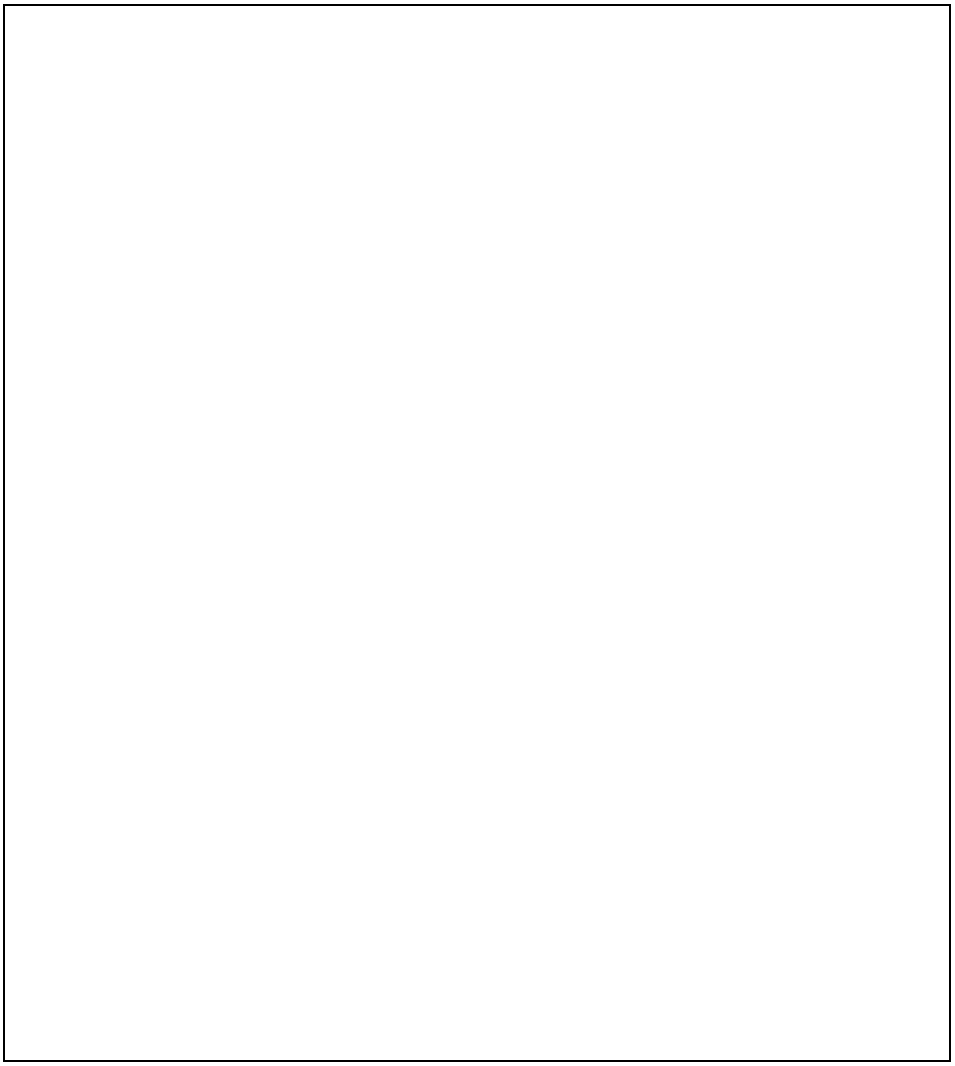
Name:
Date:

ECO:

.....

Name:
Date:

SECTION 5 : DRAWING/SKETCH



CHAPTER 9

DECOMMISSIONING PHASE

As the final phase in the project cycle, decommissioning may present positive environmental opportunities associated with the return of the land for alternative use and the cessation of impacts associated with operational activities. However, depending on the nature of the operational activity, the need to manage risks and potential residual impacts may remain well after operations have ceased.

The decommissioning phase EMP provides specific guidance with respect to the management of the environmental risks associated with the decommissioning stage of a project.

Closure and decommissioning impacts are likely to be similar to the construction phase impacts. The management actions and control under the construction phase EMP need to be implemented to mitigate the negative impacts on the environment and to restore the property to its natural state.

A decommissioning phase is where a structure is removed or otherwise modified to make it incapable for re-use for the original design purpose.

The results of environmental monitoring during the decommissioning phase will be used to assess the impact of the decommissioning on the surrounding environment and demonstrate compliance with regulatory requirements.

The actual scope of the decommissioning environmental monitoring will be established following consultation with the regulatory authorities. The format of decommission management strategy will probably be similar to that of earlier development phases and consist of the following:

- Management Principles

o Develop monitoring procedures in accordance with standard protocols and the requirements of the environmental legislation.
o Undertake environmental monitoring during the decommissioning phase as shown below.

Environmental monitoring during the decommission phase will include terrestrial flora rehabilitation monitoring.

CHAPTER 10

REHABILITATION SPECIFICATIONS AND SITE CLEAN-UP

The contractors must ensure that all temporary structures, equipment, materials and facilities used or created on site for, or during construction activities, are removed once the project has been completed. The construction sites must be cleared, and cleaned to the satisfaction of the developer.

Stabilisation and rehabilitation must take place immediately after construction operations have been completed. No vehicles or unauthorised personnel must be allowed onto areas that have been rehabilitated.

The areas impacted during construction must be stabilised and shaped according to the natural surrounding contours. If topsoil was removed during construction the topsoil must be used to stabilise the impacted areas.

The impacted areas must be re-vegetated with indigenous vegetation species within 3 months after completion of construction activities. Rehabilitated areas must be irrigated as and if required to ensure successful establishment of planted indigenous vegetation.

The rehabilitation of the site must ensure that the final conditions of the site is environmentally acceptable and that there will be no adverse long-term effects on the surrounding environment especially the water resources.

The rehabilitated areas must be monitored on a monthly basis and after heavy rains for signs of erosion. If erosion occurred, mitigation measures to be implemented.

Alien vegetation monitoring of the rehabilitated areas and surrounds must be conducted on an annual basis.

CHAPTER 11

ENVIRONMENTAL AWARENESS INDUCTION COURSE MATERIAL

This section of the report is included in compliance with Section 24N (3) (c) of the National Environmental Management Act 107 of 1998.

HOW DO WE LOOK AFTER THE ENVIRONMENT?

- Report problems to your supervisor/ foreman
- Team work
- Follow the rules in the EMP

WORKING AREAS

Workers & equipment must stay inside the site boundaries at all times

RIVERS & STREAMS

- Do not swim in or drink from streams
- Do not throw oil, petrol, diesel, concrete or rubbish in the stream
- Do not work in the stream without direct instruction
- Do not damage the banks or vegetation of the stream

ANIMALS

- Do not injure or kill any animals on the site
- Ask your supervisor or Contract's Manager to remove animals found on site

TREES AND FLOWERS

- Do not damage or cut down any trees or plants without permission
- Do not pick flowers

SMOKING AND FIRE

- Put cigarette butts in a rubbish bin
- Do not smoke near gas, paints or petrol
- Do not light any fires without permission
- Know the positions of fire fighting equipment
- Report all fires
- Do not burn rubbish or vegetation without permission

PETROL, OIL AND DIESEL

- Work with petrol, oil & diesel in marked areas
- Report any petrol, oil & diesel leaks or spills to your supervisor
- Use a drip tray under vehicles & machinery
- Empty drip trays after rain & throw away where instructed

DUST

Try to avoid producing dust

NOISE

- Do not make loud noises around the site, especially near schools and homes
- Report or repair noisy vehicles

TOILETS

- Use the toilets provided
- Report full or leaking toilets

EATING

- Only eat in demarcated eating areas
- Never eat near a river or stream
- Put packaging & leftover food into rubbish bins

RUBBISH

- Do not litter – put all rubbish (especially cement bags) into the bins provided
- Report full bins to your supervisor
- The responsible person should empty bins regularly

TRUCKS AND DRIVING

- Always keep to the speed limit
- Drivers – check & report leaks and vehicles that belch smoke
- Ensure loads are secure & do not spill

EMERGENCY PHONE NUMBERS

Know all the emergency phone numbers:

- Ambulance:
- Fire:
- Police: 10111

FINES AND PENALTIES

- Spot fines of between R20 and R2000
- Your company may be fined
- Removal from site
- Construction may be stopped

PROBLEMS - WHAT TO DO!

- Report any breaks, floods, fires, leaks and injuries to your supervisor
- Ask questions!

ATTENDANCE REGISTER FOR ……	
PLACE …….	TRAINER……
NAME & SURNAME	SIGNED
SIGNED ……..	DATE & TIME ……

CHAPTER 12

COMPLIANCE WITH THE ENVIRONMENTAL AUTHORISATION

All conditions of the Environmental Authorisation must be adhered to onsite during the construction-, operational-, decommissioning- and rehabilitation phases of the proposed project. A copy of the Environmental Authorisation must be available on site together with the EMP and all contractors on site must sign the Declaration of Understanding as proof of awareness and understanding of all the conditions to be adhered to on site in terms of the EA and EMP.

CHAPTER 13

UPDATING/ADAPTING THE EMP

Although care has been taken to address all known relevant environmental issues for the development, it will become necessary to add or amend certain procedures or instructions to improve the efficiency of the EMP. Only those additions to, or amendments of, this EMP that will either improve environmental protection or can be proven not to have any negative effects would be considered to be included, and any amendments to the EMP must first be approved by the ECO and competent authority/ies i.e. DEA&DP.

REFERENCES

City of Cape Town (2002) Environmental Management Programme (Version 5) for Civil Engineering Construction Activities.

DEA&DP: ENVIRONMENTAL MANAGEMENT PROGRAMME. VER 5 (04/2002). Guideline Document for the ECO / ESO and the ER

Department of Water Affairs and Forestry, February 2005. Environmental Best Practice Specifications: Construction Integrated Environmental Management Sub-Series No. IEMS 1.6. Third Edition. Pretoria.