Appendix H: EMPr

CONSTRUCTION & OPERATIONAL ENVIRONMENTAL MANAGEMENT PROGRAMME

Proposed Clearance of a Vegetation for the Establishment of Vineyard on the Remaining Extent of Portion 10 of Farm 502, Stellenbosch

Reference nr: 16/3/3/6/7/1/B4/45/1140/20

August 2020

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QUALITY CONTROL

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00	08/06/2020	Mische Molife		Draft for comment
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CONTENTS

List of Figures

List of abbreviations

AQA	Air Quality Act
BSc	Bachelor of Science (Latin Baccalaureus Scientiae)
CBA	Critical Biodiversity Area
CER	Contractor's environmental representative
CSIR	Council for Scientific and Industrial Research
DEA&DP	Department of Environmental Affairs and Development Planning
DWS	Department of Water and Sanitation
EA	Environmental authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ECO	Environmental Control Officer as per the environmental authorisation
EMPr	Environmental Management Programme
EMS	Environmental Method Statement
ESA	Ecological Support Areas
EO	Environmental officer as appointed by the client or contractor
GN	Government Notice
HWC	Heritage Western Cape
I&AP	Interested and affected party
IAIASa	International Association for Impact Assessment South Africa
IEM	Integrated Environmental Management
ISO	International Organization for Standardization
NEMA	National Environmental Management Act
NWA	National Water Act
RE/Engineer	Resident Engineer Overseeing the Construction Activity
RD	Registration District
RP	Responsible person
SABS	South African Bureau of Standards
SAICE	South African Institution of Civil Engineering
SANBI	South African National Biodiversity Institute
WCBSP	Western Cape Biodiversity Spatial Plan

Definitions

For the purposes of this specification the following definitions shall apply:

Alien species - Plants and animals that do not arrive naturally in an area – they are brought in by humans. Alien plants often force indigenous species out of the area. *Rooikrans* is a good example of alien species in the Cape.

Alternative – A possible course of action in place of another that would meet the same purpose and need defined by the development proposal. Alternatives considered in the Environmental Impact Assessment (EIA) process can include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.

Aspect – Element of an organisation's activities, products or services that can interact with the environment.

Auditing – A systematic, documented, periodic and objective evaluation of how well the environmental management programme is performing to help safeguard the environment by facilitating the management control that would include meeting regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.

Biodiversity – The rich variety of plants and animals that live in their own environment. Fynbos is a good example of rich biodiversity in the Cape.

Built environment – Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.

Conservation – Protecting, using and saving resources wisely, especially the biodiversity found in an are a.

Construction site, working area or site – Any area within the boundaries of the property(ies) where construction is taking place.

Contamination – Polluting or making something impure.

Corrective (or remedial) action – Response required to address an environmental problem that is in conflict with the requirements of the Environmental Management Programme Report (EMPr). The need for corrective action will be determined through monitoring, audits or management review.

Degradation – The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

Ecology – The scientific study of the relationship between living things (animals, plants and humans) and their environment.

Ecosystem – The relationship and interaction between plants, animals and the non-living environment.

Environment – Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings and our effect on our surroundings.

Environmental Impact Assessment (EIA) – An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of a proposed development. The EIA includes an evaluation of alternatives, recommendations for appropriate management actions to minimised or avoid negative impacts and to enhance positive impacts, as well as proposed monitoring measures.

Environmental Management System (EMS) – Environmental Management Systems (EMS) provide guidance on how to manage the environmental impacts of activities, products and services. They detail the organisational structure, responsibilities, practices, procedures, processes and resources for environmental management. The International Standards Organisation. (ISO) ISO14001 EMS standard has been developed by the International Standards Organisation.

Environmental policy – Statement of intent and principles in relation to overall environmental performance, providing a framework for the setting of objectives and targets.

Fynbos – Low-growing and evergreen vegetation found only in the south Western Cape. Fynbos is known for its rich biodiversity.

Habitat – The physical environment that is home to plants and animals in an area. It is where they live, feed and reproduce.

Hazardous waste – Waste, even in small amounts, that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.

Impact – A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment, within a defined time and space.

Indigenous species – Plants and animals that are found naturally in an area.

Infrastructure – The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage.

Integrated – Mixing or combining all useful information and factors into a joint or unified whole.

Integrated Environmental Management (IEM) – Managing the environment by including environmental factors in all stages of development. This includes thinking about physical, social, cultural and economic factors and consulting with all the people affected by the proposed developments.

Land use – The use of land for human activities, e.g. residential, commercial, industrial use.

Mitigation – Measures designed to avoid, reduce or remedy adverse impacts

Natural environment – Our physical surroundings, including plants and animals, when they are unspoiled by human activities.

No-Go area – Any area where no access is allowed.

Over utilisation – Over-using resources. This affects their future use and the environment.

Policy – A set of aims, guidelines and procedures to help make decisions and manage an organisation or structure. Policies are based on people's values and goals. See also Integrated Environment Management.

Process – A number of planned steps or stages.

Proponent and/or Developer – Entity who applies for environmental approval and is ultimately accountable for compliance to conditions stipulated in the Environmental Authorisation (EA) and requirements of the EMPr.

Recycling – Collecting, cleaning and re-using materials.

Refuse – refers to all solid waste, including construction debris (cement bags, wrapping materials), waste and surplus food, food packaging, organic waste etc.

Resources – Parts of our natural environment that we use and protect, e.g. land, forests, water, wildlife, and minerals.

Scoping Report – A report presenting the findings of the scoping phase of the EIA. This report is primarily aimed at reaching closure on the issues and alternatives to be addressed in the EIA. See also Integrated Environmental Management.

Stakeholders - A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, relevant authorities and all interested and affected parties.

Stormwater management – Strategies implemented to control the surface flow of stormwater, such that erosion, sedimentation and pollution of surface and ground water resources in the immediate and

surrounding environments, are mitigated. This is specifically important during the construction and decommissioning phases of a project.

Sustainability – Being able to meet the needs of present and future resources.

Sustainable development – Development that is planned to meet the needs of present and future generations, e.g. the need for basic environmental, social and economic services. Sustainable development includes using and maintaining resources responsibly.

Waste Management – Classification, recycling, treatment and disposal of waste generated during the activities on site.

Wetlands – An area of land with water mostly at or near the surface, resulting in a waterlogged habitat containing characteristic vegetation species and soil types, e.g. vleis and swamps.

Zoning – The control of land use by only allowing specific type development in fixed areas or zones.

Requirements as stated in GN 982 Environmental Impact Assessment Regulations, 2014, Appendix 4 and corresponding section:

Requirement	Section
1. (1) An EMPr must comply with section 24N of the Act and include -	
(a) details of (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	EAP Details, page 7
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Introduction, page 8
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Appendix F: Super-imposed project map, page 90
d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post-closure; and (v) where relevant, operation activities;	Aim and Objectives of the EMPr, page 13 Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59 Rehabilitation Plan, page 62
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59
(f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to – (i)avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding the closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59

(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Aim and Objectives of the EMPr, page 13 Compliance with Applicable Laws, page 13. Roles and Responsibilities on page 14.
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59 Monitoring & Auditing, page 17
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions for Non-operational Phase, page 22 Proposed Impact Management Actions for Operational Phase, page 59 Monitoring & Auditing, page 17
(l)a programme for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Monitoring & Auditing, page 17
m) an environmental awareness plan describing the manner in which - (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Environmental awareness training, page 26
(n) any specific information that may be required by the competent authority	Appendix A: Environmental Authorisation, page 82

Details of EAP

Company of Environmental Assessment Practitioner (EAP):	GroenbergEnviron (Pty) Ltd	
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Telephone:	021 873 7228	Cell: 081 371 9289
E-mail:	mische@groenbergenviro.co.za	Fax: 086 476 7139
EAP Qualifications:	Pieter Badenhorst - 43 years' experience (16 at CSIR) in environmental management; report writing; project management; facilitation and also including preparing of EMPrs. Mische Molife – currently as environmental consultant with a B.Sc in Biodiversity and Conservation Biology and 3 years' experience in EIA at the Department of Environmental Affairs and Development Planning (Directorate: Development Management).	
EAP Registrations/Associations:	Pieter - IAIAsa, Pr Eng, SAICE Mische – IAIAsa, EAPASA (awaiting)	

1 Introduction

PROJECT LOCALITY

The property, remainder of Portion 10 of Farm 502, is situated south-west of Stellenbosch, off the Annandale Road, in the Western Cape (see Figure 1). The development is located within the existing Spier Wine Estate.

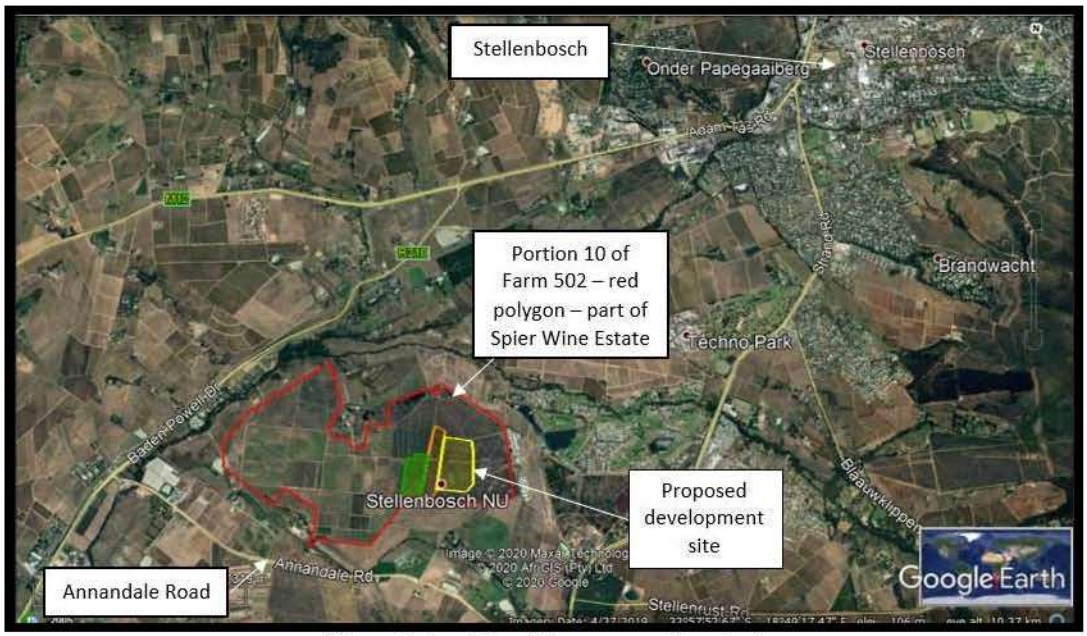

Figure 1: Locality of the proposed project

Project Details

The project entails the clearance of approximately 19.5 ha of indigenous vegetation for the establishment of a new vineyard on the remainder of Portion 10 of Farm 502, Stellenbosch. The proposed site is zoned 'agriculture'.

An existing vineyard cultivated by Spier Wine Estate (approximately 21 ha in extent) has to be replaced due to age and disease. The applicant therefore proposes to establish approximately 19.5 ha of vineyard within the estate (refer to Figure 2).

This area has been identified as the best possible location to plant wine grapes on the Spier farm based on:

- Review of historical soil survey which were ground-truthed in 2018 by Dawid Saayman (viticulture soil specialist report available) and the soil found to be favourable for wine grape.
- Assessment of terroir and site with prof Eben Archer (viticulture). Referencing terroir analysis 2009 (refer to **Error! Reference source not found.**, page **Error! Bookmark not defined.**).
- This area will also be in quarantine from existing vineyards, which are currently 20 years and older and heavily infected with a variety of diseases (mainly leafroll virus).
- The area proposed for development was previously cultivated through an agricultural school based at the University of Stellenbosch. The area proposed for development was purchased by Spier Wine Estates from the University of Stellenbosch in 1995.

The proposed development entails the clearance of approximately 19.5 ha of indigenous vegetation for the establishment of a new vineyard (refer to Figure 2).

The development will comprise of the following:

- Vineyard – approximately 19.5 ha
- Buffer area – approximately 11 ha
- Conservation area – approximately 10 ha

The conservation and buffer areas proposed will be undertaken and managed in concert with the conservation initiatives which are currently implemented by Spier Estate, as detailed below.

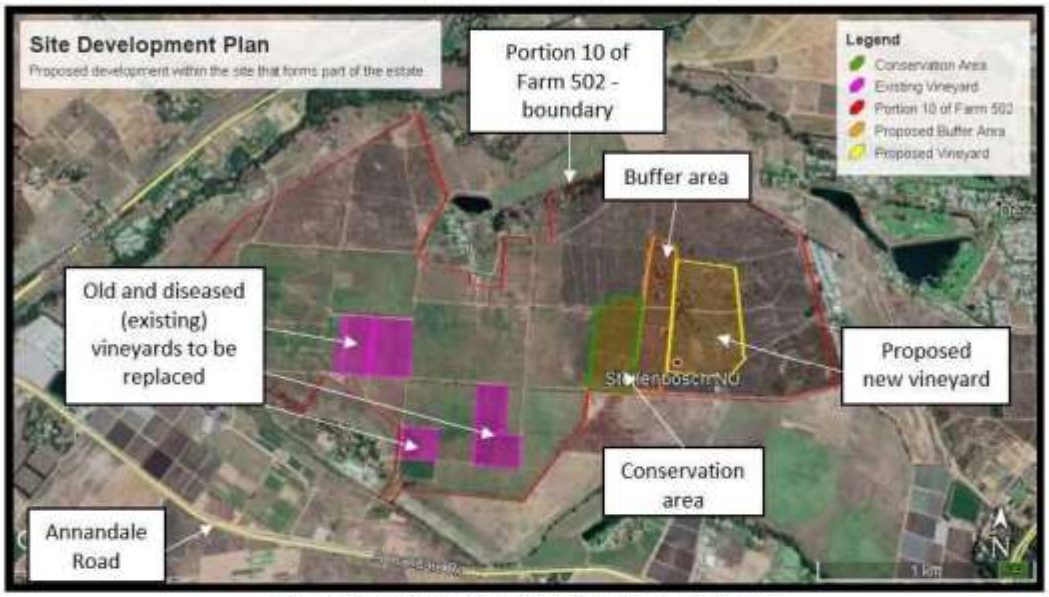

Figure 2: Proposed vineyard location and layout

On approval of this updated EMP by the Department of Environmental Affairs and Development Planning (DEA&DP), the developer must ensure that its conditions are implemented by making the document available to the contractor and also ensure that an Environmental Control Officer (ECO) or the Resident Engineer (RE) are appointed, and systems are in place to evaluate compliance. The contractor(s) is/are expected to familiarise himself with the contents of this document and to implement its conditions.

Overall the EMPr will aim to:

- Control the construction and operational activities in such a way that negative impacts on the physical environment, sensitive areas and surrounding residential areas are prevented or minimised.
- Ensure that mitigation and rehabilitation measures are implemented where required.

Please note that this document does not replace any other regulations, laws and bylaws that the contractor must adhere to. It specifically does not replace the regulations of the Occupational Health and Safety Act of 1993 (Act No. 85 of 1993).

Funding for the implementation of the Construction EMPr is the financial responsibility of the developer.

The project environmental issues are shown in Section 2 with the aim and objectives shown in Section 3 and compliance with applicable laws included in Section 4. Section 5 details the roles and responsibilities, while Section 6 discusses the monitoring and auditing, with the different schedules for auditing and monitoring shown in Section 7. The pre-construction and construction EMPr are shown in Section 8 and impact management actions included in Section 9. The operational management actions are included in Section 10. Section 11 includes the rehabilitation plan for the buffer area.

Appendix A is earmarked for the environmental authorisation which will be included upon receipt. The tracking table is included in Appendix B, and the schedule of fines shown in Appendix C. The method statement forms are shown in Appendix D and Appendix E. The superimposed project map is shown in Appendix F.

2 Environmental issues

2.1 Sensitive Environment

Botanical impact assessment:

"Summary of findings:

There is clear evidence from the condition of the vegetation and the composition of the species that it is not pristine, undisturbed Swartland Granite Renosterveld but secondary vegetation that has developed post-disturbance. The source of the disturbance is not known and appears to have been more than 20 years ago. There is a high concentration (dense stands) of Asteraceae in the genera Stoebe (particularly Stoebe plumosa [slangbos]), Senecio and Helichrysum, Elytropappus (Elytropappus rhinocerotis [renosterbos]), Athanasia (Athanasia trifurcata [Klaaslouwsbos]) and Eriocephalus. This is indicative secondary vegetation. Extensive mats of Carpobrotus edulis are also found in places that also indicate regeneration after disturbance. Another indicator is the distinct lack of geophytes. It was expected that there would be numerous geophytic species and was the reason for delaying the survey until spring 2019. But, surprisingly, practically no geophytes were found in the study area. This indicates that at some point the land was cultivated and these species were lost. (A comparison was made with an adjacent area that had definitely not been previously cultivated and immediately geophytes such as Pelargonium triste and Babiana spp. were found.) It is possible that in the past Proteaceae may have been represented by, for example, Leucadendron salignum, that occurs in renosterveld in places, but such species were absent.

General Assessment and Recommendations:

- *Only vegetation type was originally found in the study area namely Swartland Granite Renosterveld. This vegetation no longer exists in its typical state in the study area and this is ascribed to historical agriculture. The vegetation is now a uniform, secondary plant community dominated by weedy species in the family Asteraceae.*
- *Swartland Granite Renosterveld is critically endangered (A1 & D1) according to the National List of Threatened Ecosystems (Government Gazette, 2011) but development of the area earmarked for vineyards in this case would not result in any further loss of this vegetation type. What would be lost is secondary semi-natural vegetation in moderate to poor condition.*
- *When scrutinizing the WCBSP 2017 map, it is seen that the study area falls largely within a CBA1. It is my view that this classification is overinflated and at best should be mapped as ESA1.*
- *The anticipated direct impacts would be low negative prior to mitigation. The only mitigation that is possible would be the active conservation of other parts of Spier, Stellenbosch Municipality to actively encourage the return of natural Swartland Granite Renosterveld as opposed to simply leaving the land to lie fallow and to permit the dominance of such species as Stoebe plumosa (slangbos). Fire would be an important tool in this management process and controlled burns are advocated with permission from the relevant authorities.*
- *Numerous exotic pine trees occur in the area and they together with Eucalyptus cladocalyx (sugar gum), alien invasive Acacia spp. and Leptospermum laevigatum should be removed.*
- *No rare or threatened plant species were found during the survey despite the survey being conducted in spring. This is ascribed to the loss of these species from the seedbank as a result of historical cultivation of the land.*

Conclusions:

The vegetation in the proposed development area at Spier, Stellenbosch Municipality, would originally have been Swartland Granite Renosterveld. No typical Swartland Granite Renosterveld remains and instead a uniform, secondary, species-poor plant community was found. No plant species of conservation concern were recorded, and the vegetation is not deemed to be sensitive. It is my strong view that the classification of the area as a CBA1 in the Western Cape Biodiversity Plan is highly inflated and it should, at the most, be classified as an ecological support area. The proposed agricultural development is thus supported from a botanical perspective, with the principal mitigation measure being to conserve as much semi-natural habitat elsewhere on the property that should be actively managed to try to get the vegetation to revert to more typical Swartland Granite Renosterveld. Finally, the removal of alien invasive trees in the study area is mandatory and must be made a condition of authorisation for the proposed development in order to curb the spread of the alien plants."

Aquatic Compliance Statement:

"Conclusion
Considering both findings from the desktop assessment, biodiversity maps as well as the field visit, no aquatic areas of conservational concern was found on site, and thus the proposed development will have a negligible negative impact, regarding freshwater features. The proposed development is also not close to any larger surrounding freshwater features, and thus the cumulative impact on the surrounding catchment and its freshwater system would also be deemed negligible. These assumptions are made on a Medium to High confidence level, as the site visit was conducted in a period where aquatic vegetation and systems are clearly visible, regardless of their seasonal nature."

3 Aim and Objectives of the EMPr

The aim of the EMPr is to:

- Identify those construction activities identified for the proposed project that may have a negative impact on the environment;
- Outline the mitigation measures that will need to be taken and the steps necessary for their implementation; and
- Describe the reporting system to be undertaken during construction.

The objectives of the EMPr are to:

- Identify a range of mitigation measures to reduce and mitigate the potential adverse impacts to minimal or insignificant levels;
- Provide a pro-active and practical working mechanism to enable the measurement and monitoring of environmental performance on site; and,
- Ensure that the environmental specifications are identified, effective and contractually binding to ensure compliance on site.

4 Compliance with Applicable Laws

The supreme law of the land is the Constitution of the Republic of South Africa, which states: *"Every person shall have the right to an environment which is not detrimental to his or her health or well-being."*

Laws applicable to the protection of the environment in terms of Environmental Management (and relating to construction activities) include, but are not restricted to:

- National Environmental Management Act (NEMA), No. 107 of 1998, as amended;
- National Environmental Management: Air Quality Act (NEM:AQA), No. 39 of 2004;
- National Environmental Management: Biodiversity Act (NEM:BA), No. 10 of 2004;
- National Environmental Management: Waste Act (NEMWA), No. 59 of 2008;
- National Heritage Resources Act, No. 25 of 1999;
- National Water Act (NWA), No. 36 of 1998 and amendments;
- National Veld and Forest Fire Act, No. 101 of 1998;
- Occupational Health and Safety Act, No. 85 of 1993;
- Soil Conservation Act, Act No. 76 of 1969;
- Sub-division of Agricultural Land Act Repeal Act 64 of 1998 (soil conservation) and all regulations framed there under and amendments thereto.

Of particular importance is Section 28 (1) of the NEMA, which places an obligation on all individuals to take due care of the environment and to ensure remedial action is instituted to minimise and mitigate environmental impact.

The EMPr forms part of the contract documentation and is thus a legally binding document. In terms of this Act, an individual responsible for environmental damage to both the environment and human health must pay for the costs, and for the preventative measures to reduce or prevent additional pollution and/or environmental damage from occurring. This is referred to as the Polluter Pays Principle.

5 Roles and Responsibilities

The key role players during the proposed work are anticipated to be as follows:

- Applicant (Holder of the EA) – Spier Wine Estate (Pty) Ltd;
- Responsible Person (RP), who will oversee the activities of the contractors on site;
- Environmental Control Officer (ECO);
- Contractor responsible for the construction and maintenance activities; and
- Any sub-contractors hired by the contractor.

The anticipated management structure (organogram) is presented in Figure 3 below and shows the proposed lines of communication for construction and maintenance activities. The applicant retains overall responsibility for construction and maintenance and the implementation of the EMPr.

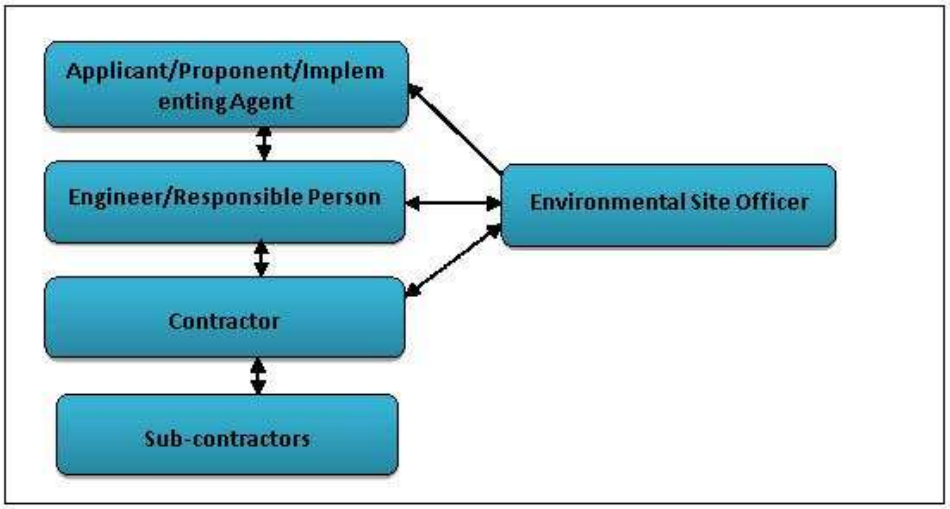

Figure 3: Management reporting structure

Key roles and responsibilities with respect to the implementation of an EMPr are outlined below.

Applicant – Spier Wine Estate (Pty) Ltd

The applicant has overall responsibility for management of activities. In terms of environmental management, the applicant/proponent will:

- Appoint suitably experienced engineers, if required, who will be responsible for the overall management of activities on site;
- Identify any activities not covered by the scope of this EMPr, and determine the need for, and where required, obtain relevant authorisations;
- Ensure that the engineers are aware of the requirements of the EMPr, implement the EMPr and monitor the contractor's activities on site;
- Ensure that the contractor is aware of and contractually bound to the provisions of this EMPr by including the relevant environmental management requirements in tender and contract documents, as appropriate;

- Appoint a suitably qualified and experienced ECO to oversee environmental management of the required works;
- Ensure that the contractor remedies environmental problems timeously and to the satisfaction of the engineer and authorities (where necessary); and
- Notify the authorities, should problems not be remedied timeously.

Responsible Person:

The applicant will appoint suitably qualified engineers (if necessary), who in turn will designate a Responsible Person (RP) to oversee activities of the contractor. This role will be fulfilled either by the Resident Engineer (RE) or a suitably qualified representative of the applicant, if applicable. The RP shall:

- Ensure that the contractor is duly informed of the EMPr and associated responsibilities and implications of this EMPr prior to commencement of construction and maintenance activities;
- Identify the need for, and request/provide method statements (MS) for future maintenance and repair works;
- Monitor the contractor's activities with regard to the requirements outlined in the EMPr;
- Report any environmental emergencies/concerns to the applicant immediately; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the relevant authorities.

Environmental Control Officer:

The ECO shall be a suitably qualified/experienced environmental professional or professional firm appointed by the applicant/proponent (developer) for the duration of repair or maintenance works. The ECO shall:

- Request method statements (MS) from the contractor prior to the start of relevant activities, where required, and approve these (as appropriate) without causing undue delay;
- Monitor, review and verify compliance with the EMPr by the main contractor, as well as any sub-contractors and specialist contractors;
- Identify areas of non-compliance and recommend corrective actions (measures) to rectify them in consultation with the applicant, the RP and the contractor, as required;
- Compile a checklist highlighting areas of non-compliance following each ECO inspection;
- Ensure follow-up and resolution of all non-compliances;
- Provide feedback for continual improvement in environmental performance;
- Respond to changes in project implementation or unanticipated activities which are not addressed and which could potentially have environmental impacts, and advise the applicant, the RP and contractor as required.

Contractor:

The contractor will be required to appoint or designate a Contractor's Environmental Representative (CER) who will assume responsibility for the contractor's environmental management requirements on site and be the point of contact between the contractor, the ECO and the RP. The CER shall:

- Ensure that all activities on site are undertaken in accordance with the CEMPr and OEMPr and/or an approved MS;
- Monitor all sub-contractor(s)' activities with regard to the requirements outlined in the EMPr;
- Ensure that all employees and sub-contractors comply with the EMPr;
- Immediately notify the RP and ECO of any non-compliance with the EMPr, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the RP and ECO.

The contractors has a duty to demonstrate respect and care for the environment. The contractors will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMPr, environmental regulations and relevant legislation.

Sub-contractors:

All sub-contractors will be required to:

- Ensure that all employees are duly informed of the EMPr and associated responsibilities and implications of this EMPr prior to maintenance activities;
- Ensure that all activities on site are undertaken in accordance with the EMPr;
- Monitor employees' activities with regard to the requirements outlined in the EMPr;
- Immediately notify the RP and ECO of any non-compliance with the EMPr, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the RP and ECO.

The sub-contractor(s) has/have a duty to demonstrate respect and care for the environment. The sub-contractors will be responsible for the cost of rehabilitation of any environmental damage that may result from his/their presence on site, and thus his/their non-compliance with the EMPr, environmental regulations and relevant legislation.

6 Monitoring & Auditing

6.1 Monitoring

The holder of the EA must appoint a suitably experienced Environmental Control Officer (ECO), for the duration of the construction phase of implementation.

The ECO must –

- be appointed prior to commencement of any vegetation clearing or construction activities commencing;
- ensure compliance with the EMPr and the conditions contained herein;
- keep a record of all activities on site, problems identified, transgressions noted, and task schedule of tasks undertaken by the ECO; and
- Remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.

An ECO will implement and monitor environmental control of the development. The ECO duties will be as follows:

- Ensure implementation and monitoring of the EMPr;
- Make changes to the EMPr as required;
- Visit the site prior to the commencement of activities to ensure that the correct method statements are prepared. The site must be visited within ten (10) days after the commencement of activities, and once a month thereafter;
- Prepare ECO reports as required by mitigation measures or by the EA;
- Maintain a photographic record of the work and environmental issues;
- ECO visits must take place 1) prior to construction and site clearing, 2) monthly after construction has commenced;
- Site visit reports must be compiled and include photographic evidence and recommendations. The report must be made available to the contractor, applicant and applicable authorities;
- An audit report must be compiled within six (6) months after completion of construction.

Documentation

A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised activities.

Access to the site must be granted, and the environmental reports mentioned above must be produced to any authorised official representing the competent authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

The **ECO** will maintain a file containing the following:

- Copy of the EMPr;
- Methodology statement(s) by the contractor(s);
- Site establishment plan;
- Letter from the contractor(s) indicating that he has familiarised himself with the contents of the EMPr;
- Letter from the contractor(s) on environmental awareness training;

The **applicant** must ensure that complaints received by the farm are documented.

The **contractor** shall maintain a copy of the following documents on-site:

- Operational Plan;
- Emergency response and remedial action plan;
- Environmental Management Programme (EMPr) and other documents related to the operation in the file.
- Tracking table (see Appendix B).

6.2 Auditing

The holder must, for the period during which the environmental authorisation and EMPr remain valid-

- Ensure that compliance with the conditions of the environmental authorisation and the EMPr is audited.
- The auditing report will address the requirements of the Environmental Impact Assessment Regulations, 2014 (as amended).
- During the non-operational phase (construction phase), the holder must undertake an annual environmental audit. This shall not exceed intervals of five (5) years. The holder must submit these audit reports to the competent authority.
- A final audit report must be compiled within six (6) months after completion of construction and must be submitted to the competent authority within sixty (60) days of completion of construction;
- The holder must, within 7 days of the submission of the environmental audit report to the competent authority, notify all registered I&APs of the submission and make the report available to anyone on request and where the holder has such a facility, be placed on a publicly accessible website.
- The environmental audit report must be prepared and submitted to the competent authority, by an independent person with the relevant environmental auditing expertise;
- The Environmental Audit Report, must-
  a. provide verifiable findings, in a structured and systematic manner, on
     i. the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
     ii. The ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.
  b. identify and assess any new impacts and risks as a result of undertaking the activity;
  c. evaluate the effectiveness of the EMPr;
  d. identify shortcomings in the EMPr;
  e. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;
  f. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;
  g. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation;
  h. include a photographic record of the site applicable to the audit; and
  i. be informed by the ECO reports (where applicable to the construction phase).

7 Environmental auditing and monitoring schedule

Environmental auditing and monitoring schedule			
Non-operational phases			
	Frequency	**Record & duties to be fulfilled**	**Report**
ECO site visits	Once Monthly	• Ensure compliance with the EMPR and the conditions contained herein; • Keep a record of all activities on site; problems identified; transgressions noted, and a task schedule of tasks undertaken by the ECO; • Remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation. • ECO must submit a hard copy of the monthly ECO Reports to the competent authority, of required by the competent authority.	Site visit report to the holder of EA as well as other conditions that might be prescribed in the EA.
Final construction phase Environmental Audit Report	Within sixty (60) days of completion of construction	Ensure the compliance with the conditions of the environmental authorisation and The EMPR	Auditing
Operational phases			
Environmental audit(s)	The frequency of the auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPR	• The holder must ensure that environmental audit(s) are performed regularly; • The Report must comply with the EA.	• Submit these Environmental Audit Report(s) to the competent authority, • The environmental audit report must be prepared and submitted to the competent authority, by an

	shall not exceed intervals of five (5) years		independent person with the relevant environmental auditing expertise; • The holder must, within seven (7) days of the submission of the environmental audit report to the competent authority, notify all registered I&APs of the submission and make the report available to anyone on request and, where the holder has such a facility, be placed on a publicly accessible website

8 Non-operational Management Programme – Pre-construction & Construction

Please note that the EMPr must be included in any tender documentation and all sub-contractors on the site must be made aware of this EMPr and they must at all times adhere to the procedures specified.

Only those sections applicable to the specific construction activity are relevant and to be implemented.

8.1 Specific Conditions as Stated in EA

To be included after issue of EA.

8.2 Contractual Obligations

1. The contractor shall acknowledge receipt of copies of the EMPr and confirm in writing that he has familiarised himself with the contents thereof;
2. The contractor shall comply with all environmental obligations imposed by the RE/ECO/EO.
3. The contractor shall co-operate fully with the RE/ECO/EO and use his best endeavours to ensure that the objectives of the EMPr are fulfilled in the course of the contractor's execution of the works or the relevant part thereof.
4. The contractor shall erect an information board containing background information for the construction activity and listing the relevant contact details for complaint.
5. The contractor must ensure that all workers are given environmental awareness training on the requirements of the EMPr. This must form part of the contractor's contract agreement. The RE/ECO/EO must be informed in writing of implementation.
6. The working hours will be from 7:00 am to 18:00 pm Monday to Saturday. No work will be allowed on Sundays or public holidays.
7. Deliveries will only be allowed between 8:00 am and 17:00 pm.
8. Preference must be given to local labour.
9. Workers (except security guards) shall not be housed on-site.

8.3 Penalties

Penalties must be instituted for non-compliance. The penalty is over and above the cost of rectifying the problem and/or damage. Penalties vary on a sliding scale from R 500 to R 5 000 for non-serious to serious issues as determined by the RE/ECO/EO.

These penalties must be paid into a separate account to be administered by the developer. The RE/ECO/EO will decide how the penalties, if any, are to be spent.

Refer to Appendix C for the Schedule of Fines.

9 Proposed Impact Management Actions for Non-operational Phase

The environmental management and mitigation measures that must be implemented during all construction activities, as well as responsibilities and timelines for the implementation of these measures are presented in the table below. The monitoring thereof is discussed in Section 6.1 above.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
1. Method Statements	Method Statements must be compiled by the contractor(s) before any construction or activity shall commence. The statement must include a site establishment plan indicating all relevant areas. The RE/ECO/EO must approve the MS. Refer to Appendix E. **The ECO must identify method statements that will be required as part of the project implementation.** The list provided below is generic (to ensure any possible occurrence is covered), and only that which is applicable to the proposed development will be required, as per the recommendation of the ECO. ***Access routes*** • Upgrading and construction of access routes. • Rehabilitation of temporary access routes. • Location of proposed access routes. ***Alien plant clearing*** • Method of control to be used for the eradication or control of alien vegetation. ***Blasting*** • Details of all methods and logistics associated with blasting. ***Bunding*** • Method of bunding for the static plant.	Holder of EA or representative	Before commencement of activities	Relevant Method Statements should be identified by the ECO and communicated with the contractor. To ensure that the contractor prepare the Method Statements in line with the EMPr and submit them to the ECO before construction commences.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	Camp establishment • Layout and preparation of the construction camp. • Method of installing fences required for No Go areas, working areas and construction camp areas. • Preparation of the working area. ***Cement /concrete batching*** • Location, layout and preparation of cement/concrete batching facilities including the methods employed for the mixing of concrete including the management of runoff water from such areas. ***Contaminated water*** • The contaminated water management plan, including the containment of runoff and polluted water. ***Demolition*** • The proposed method(s) of demolition. ***Drilling and jack hammering*** • Method of drill coring with water or coolant lubricants. • Methods to prevent pollution during drilling operations. ***Dust*** • Dust control. ***Earthworks*** • Method for the control of erosion during bulk earthwork operations. • Method of undertaking earthworks, including hand excavation and spoil management.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	Emergency • Emergency construction method statements. ***Environmental awareness course*** • Logistics for the environmental awareness course for all the contractor's employees. • Logistics for the environmental awareness course for the contractor's management staff. ***Erosion control*** • Method of erosion control, including erosion of spoil material. ***Exposed aggregate finishes*** • The method of control, treatment and disposal with respect to exposed aggregate finishes. ***Fire, hazardous and poisonous substances*** • Handling and storage of hazardous wastes. • Emergency spillage procedures and compounds to be used. • Emergency procedures for fire. • Use of herbicides, pesticides and other poisonous substances. • Methods for the disposal of hazardous building materials including asbestos, fibre claddings, refrigerants and coolants. ***Fuels and fuel spills*** • Methods of refuelling vehicles.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Details of methods for fuel spills and clean-up operations. • Refuelling of construction vehicles in high flow areas (or in the 1-in-50-year floodplain). • Method of refuelling dredger during dredging operations. ***Piling, jacking and thrust boring*** • The method of piling operation (e.g. driven or bored) or in situ casting or pre-cast pile structures. ***Rehabilitation*** • Rehabilitation of disturbed areas and revegetation after construction is complete. • Rehabilitation of street or hardened surfaces after construction is complete. • Retaining walls and gabions. • Method for construction and installation of retaining walls/ gabion baskets. ***Riverine corridors*** • Method for all construction activities within the 1-in-50-year floodplain. ***Rock breaking*** • Details of chemical applications to be used for rock breaking. ***Settlement ponds and sumps*** • Layout and preparation of settlement ponds and sumps.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	Solid waste management • Solid waste control and removal of waste from the site. • Methods for the disposal of vegetation cuttings, building materials or rubble generated by construction. ***Sources of materials*** • Details of materials imported to the site (where applicable). ***Sensitive environments*** • Proposed construction methods within any sensitive environments. These can include, but are not limited to, wetlands, dams and rivers. ***Traffic*** • Traffic safety measure for entry exit onto/off public roads. • Traffic control when crossing roads or pedestrian routes with construction activities. ***Vegetation clearing*** • Method of vegetation clearing during site establishment. ***Wash areas*** • Location, layout, preparation and operation of all wash areas, including vehicle wash, workshop washing and paint washing and clearing.			
2. Environmental awareness training	• All the contractor's employees, sub-contractors' employees and any suppliers' employees that spend more than 1 day a week or four days in a month on site, must attend an Environmental Awareness Training	Holder of EA or representative	Within one week of the commencement date.	• Understanding of the EMPr. • Compliance with the EMPr.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	course presented by the contractor – the first of which shall be held within one week of the commencement date. Subsequent courses shall be held as and when required. • The engineer/ECO will provide the contractor with the course content for the environmental awareness training course, and the contractor shall communicate this information to his employees on the site, any new employees coming on site, and to his subcontractors and suppliers. • The contractor shall supply the engineer/ECO with a monthly report indicating the number of employees that will be present on site during the following month and any changes in this number that may occur during the month. • The contractor shall submit a Method Statement detailing the logistics of the environmental awareness training course.		Subsequent courses shall be held as and when required.	• Limiting environmental degradation or pollution as a result of ignorance or accidents.
3. Demarcation and protection	• The development footprint must be kept to an absolute minimum. • The property must be fenced prior to the start of construction to determine the construction/work area. Proper access control must be implemented to ensure that only authorised people obtain access to the site. • No-Go areas must be clearly demarcated prior to commencing of demolition and/or earthworks/building operations.	Holder of EA or representative	Before construction commences and maintained throughout.	• Ensure there are no illegal entries. • Prevent entry into no-go areas and thereby environmental degradation. • Ensure there is no degradation of the natural environment.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The construction area must be demarcated by an appropriate method (drop lines, danger tape, fence, pegs etc) as agreed between the contractor, engineer and ECO. • The contractor must ensure that fencing and/or demarcations are maintained for the duration of the project. • No work outside of the property boundary will be allowed. • Special features shall be marked on a site layout plan prior to any works commencing on site. These areas shall be designated No Go areas. • Outcrops, rock faces, trees and natural vegetation or any other natural or special features inside and outside the site shall not be defaced, painted for benchmarks for the survey or any other purposes, or otherwise damaged in any way without the prior approval of the engineer/ECO. These features shall be demarcated as No Go areas and shall be fenced or similarly protected, as determined by the engineer/ECO.			• Ensure no unauthorised vegetation cleared or disturbed. • Containment of footprint.
4. Aesthetics	The aesthetics measures indicated below must be implemented as required by the specific site and situated and as agreed with the RE/ECO/EO. • The contractor shall be required to visually screen the site.	Holder of EA or representative	Before construction commences and maintained throughout.	• Ensuring that the construction site is aesthetically pleasing. • Ensuring reduced possible visual impact.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Visual screening shall be aesthetically pleasing and shall be erected by the contractor prior to commencing any activities. • Visual screening shall be maintained by the contractor for the duration of the contract. • Visual screening must be of the following types: ○ Shade cloth ○ Hessian ○ Berms.			• Limiting possibility of complaints from I&APs
5. Camp	• The contractor's camp, offices, and storage facilities shall not be located within an environmentally sensitive area or the No-Go areas. The camp's position must be approved by RE/ECO. • The camp must be fenced as agreed with the RE/ECO unless it is situated inside an existing building on the property. • Water from the kitchens, showers, sinks, etc., shall be discharged in a manner approved by the RE/ECO. • The contractor must ensure that all temporary structures, equipment, materials, and facilities used or created on-site during the construction phase are removed and appropriately disposed of. • No littering by the contractor's employees shall be tolerated under any circumstances, anywhere in the demarcated area for construction. **Site of the construction camp**	Holder of EA or representative	Before construction commences and maintained throughout.	• Ensuring that all construction infrastructure etc. is located within a demarcated camp, within which possible impacts on the environment can be mitigated. • Ensuring that the site is not located close to any environmentally sensitive areas. • Preventing water or soil pollution • Ensuring that there does not occur any

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The choice of site for the contractor's camp requires the ECO's permission and must consider the location of local residents and/or ecologically sensitive areas, including flood zones and slip/unstable zones. A site plan must be submitted to the ECO and project manager for approval. • The size of the construction camp must be minimised (especially where natural vegetation or grassland has had to be cleared for its construction). • The contractor must attend to drainage of the campsite to avoid standing water and/or sheet erosion. • Suitable control measures over the contractor's yard, plant and material storage to mitigate any visual impact of the construction activity must be implemented. **Storage of materials (including hazardous materials) at site camp** • The choice of location for storage areas must consider prevailing winds, distances to water bodies, general on-site topography and water erosion potential of the soil. • Storage areas must be designated, demarcated and fenced.			environmental pollution or littering • Creating a neat workplace area

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Storage areas must be secure so as to minimise the risk of crime. They must also be safe from access by unauthorised persons. • Fire prevention facilities must be present at all storage facilities. • Proper storage facilities for the storage of oils, paints, grease, fuels, chemicals and any hazardous materials used must be provided to prevent the migration of spillage into the ground and groundwater around the temporary storage area(s). These pollution prevention measures for storage must include a bund wall high enough to contain at least 110% of any stored volume, and this must be sited away from drainage lines with the approval of the ECO. • These storage facilities (including any tanks) must be on an impermeable surface that is protected from the ingress of stormwater from surrounding areas in order to ensure that accidental spillage does not pollute local soil or water resources. • Clear signage must be placed at all storage areas containing hazardous substances/materials. Staff dealing with these materials/substances must be aware of their potential impacts and follow the appropriate safety measures. • A waste disposal contractor must be employed to remove waste oil. These wastes must only be disposed of at licensed landfill sites designed to handle			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	hazardous wastes. A disposal certificate must be obtained from the waste disposal contractor. • The contractor must ensure that its staff are made aware of the health risks associated with any hazardous substances used, have been provided with the appropriate protective clothing/equipment in case of spillages or accidents, and have received the necessary training. • All excess cement and concrete mixes are to be contained on the construction site prior to disposal off-site. • Any spillage that may occur, shall be investigated and immediate action must be taken. This must also be reported to the ECO and DEA&DP, as well as local authorities if so required. **Drainage of the construction camp** • Run-off from the campsite must not discharge into neighbours' properties. **End of construction** • Once construction has been completed on site and all excess material has been removed, the storage area shall be rehabilitated. If the area was badly damaged, reseeding shall be done. • Such areas shall be rehabilitated to their natural state. Any spilled concrete shall be removed, and soil			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	compacted during construction shall be ripped, levelled and re-vegetated.			
6. Sensitive environments and buffer area	• The following recommendation was made by the Botanical Specialist: - The only mitigation that is possible would be the active conservation of other parts of Spier, Stellenbosch Municipality to actively encourage the return of natural Swartland Granite Renosterveld as opposed to simply leaving the land to lie fallow and to permit the dominance of such species as Stoebe plumosa (slangbos). Fire would be an important tool in this management process and controlled burns are advocated with permission from the relevant authorities. • Rocks and vegetation debris should not be dumped onto adjacent natural vegetation. • Any animals encountered during the land clearing activities should be left unharmed and relocated to adjacent natural areas where appropriate (e.g. tortoises).	Holder of EA or representative	Before construction commences and maintained throughout, if and when required.	• Preventing destruction, degradation or pollution of sensitive environments • Limiting the impact on the indigenous fauna and flora other than outlined and approved.
7. Surface and groundwater pollution	• The contractor shall take all reasonable steps to prevent pollution of surface and groundwater as a result of his activities. Such pollution could result from release (accidental or otherwise) of chemicals, oils, fuels, paint, and sewage, water from excavations,	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Preventing degradation or deterioration of ground and surface water due to construction activities

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	construction water, water carrying soil particles or waste products. • On completion, stormwater catch pits must be closed with geotextile (bidim) or similar material to prevent sand or other contaminants from entering the system. • The contractor shall provide water and/or washing facilities at the construction camp for personnel. • In the event of any pollution entering any water body, the contractor shall inform the RE/ECO/EO immediately. • The contractor will be responsible for any clean-up costs involved, should pollution, erosion or sedimentation have taken place.			• Preventing siltation into the water resource.
8. Air pollution	**Air Pollution** During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Dust pollution may have an impact on operational workers. • In order to minimise the effect of dust pollution, the construction area must be kept wet as far as possible and the workers must wear the necessary safety clothing. • The applicant is referred to Section 19 of the National Water Act No. 36 of 1998 with regard to the prevention of, and remedies for, the effects of pollution. In terms of this section of the Act, the person who owns, controls, occupies or uses the land in question is	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring dust associated with construction activities are mitigated to limit air pollution. • Manage and prevent any degradation to the natural environment.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	responsible for taking measures to prevent pollution of water resources and property.			
9. Noise control	• Working hours will be restricted to normal daily working hours. • The use of heavy vehicle machinery and construction activities associated with high-level noise will be limited to between 06:00 and 18:00 from Mondays to Saturdays, particularly to where residential areas or sensitive institutions are situated close to the site. • All noise and sounds generated by plant or machinery must adhere to SABS 0103 specifications for the maximum permissible noise levels for residential areas. • All plant and machinery are to be fitted with adequate silencers. • No sound amplification equipment such as sirens, loud hailers or hooters shall be used on-site, after normal working hours, except in emergencies. • If work is to be undertaken outside of normal work hours, permission must be obtained from the local authority. Prior to commencing any such activity, the contractor is also to advise the potentially affected neighbouring residents. Dates, times and the nature of the work to be undertaken are to be provided. Notification may include letter-drops. • The acceptable noise level according to SABS 10103 Code of Practice is 45dBA in the rural district during the	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring adequate noise control so that there are no noise levels above the standard. • Mitigating possible noise in the receiving environment. • Ensuring that complaints from I&APs are limited.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	day and 35dBA at night. The applicant must comply/adhere to this requirement. • The contractor shall make adequate provisions to prevent or minimise the possible effects of air and noise pollution. Should the noise from the construction work be found to cause problems, (which is not anticipated to be the case) work hours in these areas must be restricted between 06:00 and 18:00, or as otherwise agreed between the parties involved. Strict measures shall, therefore, be enforced, especially in terms of the contract specifications, to prevent any negative impacts in this regard.			
10. Pipe testing and cleaning	• Cleaning/flushing of pipelines shall not impair (downgrade) baseline water quality. • Materials used in the sterilisation of pipelines, viz. chlorine solutions shall be treated as hazardous substances and disposed of at an approved landfill site. • Litter traps shall be installed and maintained at the outflow of all pipelines.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Prevent pollution of water resources. • Ensuring no visible or measurable signs of pollution of the environment (soils, ground and surface water).
11. Erosion control and stormwater management, trenching	• The contractor must take all reasonable precautions to prevent soil erosion resulting from a diversion, restriction or increase in the flow of stormwater or water resulting from its operations and activities to the satisfaction of the RE/ECO/EO. Possible measures that can be considered include the following: ○ Brush cut packing	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Limiting erosion on site. • Ensuring possible erosion is controlled and mitigated.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	○ Mulch or chip cover ○ Straw stabilising (at the rate of one bale/m² and rotated into the top 100 mm of the completed earthworks) ○ Watering ○ Planting / sodding ○ Hand seeding sowing ○ Hydroseeding ○ Soil binders and anti-erosion compounds ○ Mechanical cover or packing structures ○ Gabions & mattresses ○ Geofabric ○ Hessian cover ○ Armourflex ○ Log/pole fencing ○ Retaining walls • The contractor shall take reasonable measures to control the erosive effects of stormwater runoff. • The contractor shall use silt screens to prevent overland flowing water from causing erosion. • Straw bales as filters that are placed across the flow of overland stormwater flows, shall be used as an erosion protection measure. • The ploughing-in of straw offers limited protection against stormwater runoff-induced erosion, and shall be used as an erosion protection measure.			• Ensuring that stormwater is managed on site. • Ensuring no degradation of the natural environment occurs due to erosion. • Prevent disturbance/ damage of vegetation due to erosion.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The contractor shall be liable for any damage to downstream property caused by the diversion of overland stormwater flows. • At all times it must be considered that an open trench will guide stormwater like a river, and the overflow point must be protected against erosion and silt deposition. • It is the responsibility of the contractor working inside any trench at any specific time to ensure that their works are protected from damage which may be caused through run-off of rain water inside the trench. The use of sand bags, mulch bags or any other appropriate methods of slowing down the flow of water within a trench is required. • Trenching of the sewer line adjacent to the Rooi River must be done in phases and must be immediately installed and backfilled. • Where water is directed out of a trench by the contractor, they are responsible for the prevention of erosion at the discharge point and of preventing the movement of any silt (which may be carried in such water, or result from the erosion caused by such water) beyond the work area. • In the event of erosion damage or silt movement, the contractor is responsible for the clean-up required to reinstate the conditions to normal as determined by the ECO.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The area of open ground at any time should be limited to the minimum in order to avoid excessive risk. • The area of open trench at any time should be limited to the minimum in order to avoid excessive risk.			
12. Dust control	**DUST - generated by works** • Sand stockpiles are to be covered with hessian, shade cloth or DPC plastic. • Stockpiles are to be located in sheltered areas and the usable/cut face orientated away from the direction of the prevailing wind for that season. • Excavating, handling or transporting erodible materials in high wind or when dust plumes visible shall be avoided. • If high winds prevail, the engineer shall decide whether water dampening measures or cessation of activities is required, and if necessary, they shall have the authority to temporarily stop certain of the works until wind conditions become more favourable. **Dust – generated by roads and vehicle movement** • Vehicle speeds shall not exceed 40km/h along gravel roads or 20km/h on unconsolidated or non-vegetated areas. Dust plumes created by vehicle movement are to be monitored. • If access roads are generating dust beyond acceptable levels, dust suppression measures must be initiated. These include, but are not limited to the following: ○ Reduction of travelling speeds along the road.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring proper dust suppression. • Limiting air pollution potential during construction activities.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	○ Restriction of vehicle or plant usage. ○ Application of chemical soil binders. ○ Application of a suitable sacrificial road surfacing. ○ If water is to be used for dust suppression, then only the critical areas shall be watered. The use of water carts or hand watering is preferable. Overhead sprayers shall not be permitted in windy conditions, as the evaporation loss is too high. Watering is to be supervised to prevent unnecessary water wastage, and runoff into potentially sensitive areas. Preferable watering times are early morning and late afternoon/evening. Water restrictions are to be observed if in place.			
13. Fire prevention and management	• No open fires or naked flames for heating or cooking shall be allowed on site. Stoves and other electrical equipment shall only be permitted in the contractor's camp and never be left unattended. ○ The contractor shall take all reasonable and active steps to avoid increasing the risk of fire through their activities on site. No fires shall be lit except at places approved by the engineer/ECO/EO. ○ The contractor shall ensure that the basic firefighting equipment is to the satisfaction of the municipal fire chief (where applicable). ○ The contractor shall supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other areas identified by the	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Prevent any open fires. • Ensuring that prevention measures are in place if any accidental fires do take place. • Ensuring that no fires are started by the contractors' workforce.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	engineer/ECO/EO with tested and approved firefighting equipment. ○ Fire and "hot work" shall be restricted to a site approved by the engineer/ECO/EO. ○ A braai facility shall be considered at the discretion of the engineer/ECO/EO. The area shall be away from stores containing flammable materials. All events shall be under management supervision and a fire extinguisher shall be immediately available. "Low smoke" fuels shall be used. Smoke-free zoning regulations shall be considered. ○ Fires within national parks, nature reserves and natural areas are prohibited. ○ Cooking shall be restricted to bottled gas facilities under strict control and supervision. The sensitivity of the surrounding land uses, and the occurrence of natural indigenous vegetation must be considered when assessing the risk of fires. ○ The contractor shall take precautions when working with welding or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher immediately at hand, as well as the use of welding curtains. ○ The contractor shall identify the authorities responsible for fighting fires in the area and shall			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	liaise with them regarding procedures in the event that a fire starts. The contractor shall ensure that his staff are aware of the fire danger at all times, and the of procedure to be followed in the event of a fire. The contractor shall also ensure that all the necessary telephone numbers etc. are posted at conspicuous and relevant locations in the event of an emergency. The contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. ○ If and when a contractor is found responsible for the outbreak of a fire, he shall be liable for any associated costs.			
14. Water management	• The contractor shall provide water for drinking and construction purposes until such time as it is available from the local system. Water from the local system must be used carefully and sparingly, with the view of not wasting water. • Taps are to be attached to secure supports and leaking taps and hosepipes are to be repaired immediately. • Watering as dust suppression must be undertaken as a last resort. It is preferable that sand stockpiles be covered rather than watered. • Any abstraction from natural water sources such as a stream or groundwater will require a Method Statement for approval by the RE/ECO/EO.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensure potable water is available to workers during the construction phase. • Management of water during construction activities. • Ensuring water is only used for dust suppression as a last resort.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• An adequate supply of potable water that complies with bacteriological and chemical quality must be available at all times.			
15. Waste management	• A waste minimisation approach must be followed. This requires recycling wherever possible. All waste, therefore, to be suitably contained and removed regularly from the site in accordance with the municipal waste management procedures. Other examples shall include the use of rubble as fill, minimisation of waste concrete and the use of brush cuttings for mulching on rehabilitated areas. • The contractor shall be responsible for the establishment of a refuse control and removal system that prevents the spread of refuse within and beyond the construction sites. • The contractor shall ensure that all refuse is deposited in refuse bins. He shall supply the bins and arrange for them to be emptied on a weekly basis. Refuse bins shall be of such a design that the refuse cannot be blown out and that animals or birds are not attracted to the waste and spread it around. Refuse bins shall be watertight, wind-proof and scavenger-proof and shall be appropriately placed throughout the site. Refuse must also be protected from rain, which may cause pollutants to leach out. Refuse bins shall be placed at appropriate places throughout the site and shall be conspicuous (e.g. painted bright yellow).	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Ensuring proper waste management and removal takes place. • Ensure that the site is kept free of litter and deposited in bins. • Ensuring that waste is stored in the correct manner on site before it is removed. • Ensuring legal waste removal takes place.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Refuse shall be disposed of at an approved waste site (site and method to be agreed with the local authority). Refuse shall not be burnt or buried on or near the site. • The contractor shall provide labourers to clean up the contractor's camp and site on a weekly basis. • The contractor shall also clean the contractor's camp and site of all structures, equipment, residual litter and building materials at the end of the contract. • Any solid waste must be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) or the National Environmental Management: Waste Act (Act No. 59 of 2008);			
16. Toilets	• The contractor shall be responsible for providing all sanitary arrangements for construction and supervisory staff on the site. A minimum of one chemical toilet shall be provided per 15 persons. Toilets provided by the contractor must be easily accessible and within a practical distance from the workers. Toilets shall be located within areas of low environmental importance. The toilets shall be of a neat construction and shall be provided with doors and locks and shall be secured to prevent them from blowing over. Toilets shall be placed outside areas susceptible to flooding. • The location for construction camps and toilets must be approved by the ECO.	Holder of EA or representative	Continuously throughout the construction phase if and when required.	• Ensuring that appropriate sewerage management takes place to reduce the possibility of an impact on soil and groundwater resources. • Ensuring that sufficient and clean ablution facilities are provided.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The contractor shall keep the toilets in a clean, neat and hygienic condition. The contractor shall supply toilet paper at all toilets. • The contractor shall be responsible for the cleaning, maintenance, servicing and emptying of the toilets on a regular basis (by chemical contractor). No waste may be dumped in the bush or wetland. • The contractor shall ensure that the toilets are emptied before the builders holidays or other holidays, and the waste be stored and disposed of at an appropriate place off-site. • The contractor shall ensure that no spillage occurs when chemical toilets are cleaned and emptied. • The contractor shall supply a contingency plan for spills from toilets. • Performing ablutions in any other area are strictly prohibited.			
17. Fuel and chemical management	Fuel may be stored on-site providing the following is strictly adhered to: • All necessary approvals with respect to fuel storage and dispensing shall be obtained from the appropriate authorities. • The municipal fire chief (or as applicable) must be informed and consulted in terms of the fire regulations.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring the proper use/storage/handling and management of fuel on-site. • Ensuring minimal to no impact on the natural environment. • Limiting pollution potential due to

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The contractor shall ensure that all liquid fuels and oils are stored in tanks with lids that are kept firmly shut and under lock and key at all times. • The contractor shall stand any equipment that may leak and does not have to be transported regularly, on watertight drip trays to catch any pollutants. The drip trays shall be of a size large enough that the equipment can be placed inside it. Drip trays shall be cleaned regularly and shall not be allowed to overflow. • All hazardous material (e.g., oils, petrol or diesel) used on site must be disposed of at an approved hazardous waste facility or via the services of a licensed waste transportation company. All certificates of disposal and weighbridge slips have to be signed by all relevant officials and kept as records on the premises. • The contractor will be responsible for the cleaning up of any spill and associated costs. • Areas for storage of fuels and other flammable materials shall comply with standard fire safety regulations and shall require the approval of the Municipal Fire Chief (in urban areas) or RE/ECO/EO. • Temporary above-ground storage tanks may be permitted at the discretion of the Municipal Fire Chief based on the merit of the situation, provided that the following requirements are complied with: ○ The written application together with a plan and authority from the municipality shall be			spillages and mismanagement.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	forwarded to the municipal fire chief (in urban areas) or RE/ECO/EO at least fourteen (14) days prior to the installation being erected on site. ○ Written permission shall be obtained from the chief fire officer for the erection of the installation. ○ The drawn plan shall be acceptable to the municipal fire chief (in urban areas) or RE/ECO/EO and to contain the following information: ▪ the scale ▪ the name and address of the premises ▪ the number and the quantity of the tanks ▪ the position of the tanks in relation to the boundary, other flammable or combustible materials, etc. ▪ the size and construction materials used for the bund ▪ the product to be kept in the tank, and ▪ any other information relevant to the situation. **Location** • The engineer/ECO shall be advised of the area that the contractor intends using for the storage of fuel. • The location of the fuel storage area will be determined by the municipal fire chief (in urban areas) and be approved by the engineer/ECO/EO.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The tank shall be erected at least 3.5 meters away from buildings, boundaries and any other combustible or flammable materials. **Signs/good practice/safety precautions** • Symbolic safety signs depicting "No Smoking", "No Naked Lights" and "Danger" conforming to the requirement of SABS 1186 are to be prominently displayed in and around the fuel storage area. • No smoking shall be allowed in the vicinity of the stores. • The capacity of the tank shall be clearly displayed, and the product contained within the tank clearly identified using the emergency information system detailed in SABS 0232 part 1. • There shall be adequate firefighting equipment at the fuel storage and dispensing area or areas. • Fuel shall be kept under lock and key at all times. **Tanks** • The storage tank shall be on the premises only for as long as the contract lasts. • The storage tank shall be removed on completion of the works. • All such tanks are to be designed and constructed in accordance with a recognised code. • The rated capacity of tanks shall provide sufficient capacity to permit expansion of the product contained therein by the rise in temperature during storage.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	Bunds/storage areas • Tanks shall be situated in a bunded area, the volume of which shall be at least 150% of the volume of the largest tank. The floor of bund shall be smooth and impermeably constructed of concrete or plastic sheeting with impermeable joints with a layer of sand over to prevent perishing. The bund walls shall be of concrete or formed of well-packed earth with the impermeable lining extending to the crest. The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel and/or fuel-soaked water to be removed. • A bacterial hydrocarbon digestion agent that is effective in water approved by the engineer/ECO/EO shall be installed in the sump. • The tanks and bunded areas shall be covered by a roofed structure to prevent the bunded area from filling with rainwater. This structure shall be constructed in such a way, and to the approval of the engineer/ECO/EO, to ensure that it is wind resistant. • Any water that collects in the bund shall not be allowed to stand and shall be removed within one day and taken off-site to a disposal site approved by the engineer/ECO/EO, and the bacterial hydrocarbon digestion agent shall be replenished.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	Empty containers • Only empty and externally clean tanks shall be stored on the bare ground. All empty and externally dirty tanks shall be sealed and stored on an area where the ground has been protected. **Filling/dispensing methods** • Any electrical or petrol-driven pump shall be equipped and positioned so as not to cause any danger of ignition of the product. • If fuel is dispensed from 200-litre drums, the proper dispensing equipment shall be used. The drum shall not be tipped in order to dispense fuel. The dispensing mechanism of the fuel storage tank shall be stored in a waterproof container when not in use. • Adequate precautions shall be provided to prevent spillage during the filling of a tank and the dispensing of its contents.			
18. Litter and oil traps	• Refuse screens and oil traps shall be installed at runoff concentration points from large parking facilities, wash bays, stormwater outlets, inlets to detention ponds, workshop forecourt drainage points, ablution and eating areas. These facilities shall be serviced and monitored at the discretion of the engineer/ECO.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring that water resources are not polluted by litter and oil. • Limiting pollution potential due to spillages and mismanagement.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
19. Contaminated water	***General*** • The engineer/ECO/EO's approval will be required prior to the discharge of contaminated water to the municipal sewer system. • The contractor shall prevent discharge of any pollutants, such as cement, concrete, lime, chemicals and fuels into any water sources. • Water from kitchens, showers, laboratories, sinks, etc. shall be discharged into a conservancy tank for removal from the site. • Runoff from fuel depots/workshops/truck washing areas and concrete swills shall be directed into a conservancy tank and disposed of at a site approved by the engineer/ECO and local authority. • The contaminated water, contaminated run-off, or effluent released into a water body requires analysis in terms of the National Water Act. Contaminated water must not be released into the environment without authorisation from the relevant authority. ***Washing areas*** • Wash areas shall be placed and constructed in such a manner that it ensures that the surrounding areas, which include groundwater, are not polluted. • A Method Statement shall be required for all wash areas where hydrocarbons, hazardous materials and pollutants are expected to be used. This includes, but	Holder of EA or representative	Continuously throughout the construction phase if and when required.	• Managing the disposal of contaminated water. • Mitigating and managing the storage of contaminated water until it can be disposed. • Preventing the contamination of water or to reduce the impact on the soil and groundwater resources.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	is not limited to, vehicle washing, workshop wash bays, paint wash and cleaning. • Wash areas for domestic use shall ensure that the disposal of contaminated "grey" water is sanctioned by the engineer/ECO.			
20. Vehicles and access roads	• The movement of any vehicles and/or personnel outside of the designated working areas shall not be permitted without the written authorisation of the engineer/ECO. • If and when the contractor does not exercise sufficient control to restrict all work to the area within the marker boundaries, then these shall be replaced on the instruction of the engineer/ECO/EO by fencing. The relevant additional costs shall be borne by the contractor. • Dust control measures such as dampening with water shall be implemented where necessary, as indicated by the engineer/ECO. • Access and haul roads shall be maintained by the contractor. • Maintenance includes adequate drainage and side drains, dust control and restriction of edge use. • All temporary access routes shall be rehabilitated at the end of the contract to the satisfaction of the engineer/ECO.	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Ensuring proper vehicle movement on-site and surrounding areas. • Ensuring that no vehicles area allowed in no-go areas. • Management of potential damage to existing roads during construction. • Traffic management to ensure safety on roads. • Ensuring that erosion is limited and managed on site.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• All public roads shall be kept clear of mud and sand. Mud and sand that has been deposited through construction activities shall be cleared regularly. • Any materials used for layer works shall be approved by the engineer/ECO prior to the activity commencing. • Damage to the existing access roads as a result of construction activities shall be repaired to the satisfaction of the engineer/ECO/EO, using material similar to that originally used. The cost of the repairs shall be borne by the contractor. • Traffic safety measures shall be considered to the satisfaction of the engineer/ECO in determining entry/exit onto public roads. • All users of haul roads shall not exceed 45 km/h (cars)/ 15 km/h (trucks). Note that the standard specification places a site speed limit of 45 km/h for all vehicles. • Appropriate traffic warning signs shall be erected and maintained. • Trained and equipped flagmen shall be used where the access road intersects with any public roads. • Attention shall be paid to minimising disruption of the flow of traffic and reducing the danger to other road users and pedestrians. • Method statements are required for the following: ○ Traffic safety measures with regard to entry and exit on public roads and the control of construction traffic.			

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	○ The proposed route for new access roads, tracks, or haul roads, the proposed construction of new roads, the method of upgrading existing roads, and the proposed methods of rehabilitation on completion.			
21. Stockpiling of materials	• The contractor shall temporarily stockpile topsoil materials in such a way that the spread of materials is minimised, and thus the impact on the natural vegetation. The stockpiles must be placed within areas demarcated for this purpose. The RE/ECO/EO shall approve stockpile areas.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring the safe stockpiling of topsoil, so that it can be re-used at a later stage. • Limiting erosion and siltation potential due to run-off. • Maximise the re-use of material. • Reduce or minimise the impact on vegetation. • Minimise the impact area.
22. Topsoil stripping	• As topsoil is a valuable resource, it should be stripped from all construction areas before work commences (as described above). This topsoil should be stockpiled for use in rehabilitation and landscaping and must not be contaminated with other building materials. • The vegetation to be removed together with the top 20 cm of topsoil is to be stockpiled for use during the rehabilitation phase. This topsoil is to be stockpiled in	Holder of EA or representative	Before construction commences.	• Ensuring that topsoil is stored correctly to be re-used during construction and landscaping. • Limiting erosion and siltation potential due to run-off.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	the designated topsoil stockpile areas, to be agreed by the ECO. • The relatively sensitive nature of most soils on the estate means that earthmoving operations and topsoil stockpiling should be carried out with consideration of the nature of the soils, since rutting and compaction damage can occur.			• Reduce or minimise the impact on vegetation. • Minimise the impact area.
23. Heritage remains	• Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains include: meteorites, archaeological and/or palaeontological remains (including fossil shells and trace fossils) ; coins: indigenous and/or colonial ceramics; any articles of value or antiquity: marine shell heaps; stone artefacts and bone remains; structures and other built features with heritage significance; rock art and rock engravings and/or graves or unmarked human burials including grave goods and/or associated burial material. • A qualified archaeologist and/or palaeontologist must be contracted where necessary (at the expense of the holder) to remove any heritage remains.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• To ensure the proper management of heritage remains.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
24. Contingency planning	• In the event of a spill or leak of product into the ground and/or watercourses (e.g. that of hazardous substances used for the construction phase), such incidents must be reported (within 14 days) to all the relevant authorities including the Directorate: Pollution Management in accordance with Section 30(10) of the National Environmental Management Act No. 107 of 1998 (NEMA) and Section 20 (3) of the National Water Act No.36 of 1998 (NWA), that pertains to the control of emergency incidents and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes. • Containment, clean-up, and remediation must commence immediately.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring that the contractor on site is prepared in the event of a spill or incident. • Management tools and emergency contacts should be available in the event of a spillage or incident.
25. Outdoor advertising	• All outdoor advertising associated with this activity, whether on or off the property concerned, must comply with the applicable local authority by-law for control of outdoor advertising or in the absence of local legislative controls, must comply with the South African Manual for Outdoor Advertising Control.	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Ensure advertising complies with relevant local authority by-law for control of outdoor advertising or the South African Manual for Outdoor Advertising Control.
26. Energy efficiency & waste	The following design measures will be considered for energy and water-saving measures: • Household waste to be separated and re-cycled (glass, paper, green/garden waste).	Holder of EA or representative	Continuously throughout the construction phase. If and	• Ensuring that energy and water-saving mechanisms are implemented.

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
minimization measures			when applicable and required.	
27. Labour	• All unskilled labour must be local from Stellenbosch and surroundings. A method to best incorporate the people listed must be proposed and signed off by the ECO. This will need to be monitored to ensure that any problems are overcome. • Records must be kept of all personnel and subcontractors employed by the contractor. The main contractor is to provide the breakdowns of their various subcontractors. • The target is to provide 100% of unskilled local labour to Stellenbosch and surroundings. It is suggested that the total average local should be maintained above 80%. Where local expertise is either not available or where the local is not economically competitive, a skills transfer programme is suggested to compensate. All records are to be kept and available. • There must be compliance with the Basic Conditions of Employment Act, Compensation of Occupational Injuries and Disease Act, Employment Equity Act, Labour Relations Act, Unemployment Insurance Act, and the Skills Development and Levies Act. ECO to be provided with documentary monitoring evidence.	Holder of EA or representative	Continuously throughout the construction phase.	• To ensure local labour is used during the construction period. • To ensure that the positive socio-economic impact benefits the local community.
28. Construction site break down and closure:	• All structures comprising the construction camp are to be removed from the site.	Holder of EA or representative	Once construction concludes.	To ensure proper decommissioning of the camp site and

	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
Removal of equipment and rehabilitation	• The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • All hardened surfaces within the construction camp area should be ripped, all imported materials removed, and the area shall be top soiled and rehabilitated.			rehabilitation of the site after the equipment is removed.
29. Construction site break down and closure: Associated infrastructure	• Surfaces are to be checked for waste products from activities such as concreting or asphalting and cleared in a manner approved by the engineer. • All surfaces hardened due to construction activities are to be ripped and imported material thereon removed. • All rubble is to be removed from the site to an approved disposal site as approved by the engineer. Burying of construction rubble on site is prohibited. • The site is to be cleared of all litter. • Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the engineer. • All residual stockpiles must be removed to spoil or spread on site as directed by the engineer. • All leftover building materials must be returned to the depot or removed from the site. • The contractor must repair any damage that the construction works have caused to neighbouring properties, specifically, but not limited to, damage caused by poor stormwater management.	Holder of EA or representative	Once construction concludes.	To ensure proper decommissioning of the camp site and rehabilitation of the site after the associated infrastructure is removed.

10 Proposed Impact Management Actions for Operational Phase

	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
1. General	• All applicable measures as indicated under the Construction EMPr must be implemented.	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• Management of general aspects of facility. • Ensuring that complaints from I&APs are limited.
2. Emergency Preparedness Plan	• The emergency preparedness plan must be ready for implementation at all times should an emergency situation arise.	Holder of EA or representative.	Continuously throughout the operational phase.	• To ensure preparedness for emergencies.
3. Sensitive Environment	• The active conservation of other parts of Spier, Stellenbosch Municipality to actively encourage the return of natural Swartland Granite Renosterveld as opposed to simply leaving the land to lie fallow and to permit the dominance of such species as Stoebe plumosa (slangbos). Fire would be an important tool in this management process and controlled burns are advocated with permission from the relevant authorities.	Holder of EA or representative.	Maintained throughout the project lifetime.	• No exotic plants used for rehabilitation. • Area successfully rehabilitated. • No alien plants visible. • Preventing destruction, degradation or pollution of sensitive environments.

	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
				• Controlled burns are advocated with permission from the relevant authorities.
4. Fauna	• No faunal species must be harmed by farm workers during any routine maintenance or work done on the vineyard.	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• No measurable or visible signs of harmed faunal species
5. Water Use Management	• No abstraction or any use of surface water or groundwater shall be done without prior authorisation from the Department of Water and Sanitation, unless it is a Schedule 1 Use or an Existing Lawful Use if water is taken from a water resource. • All the requirements of the National Water Act. 1998 (Act 36 of 1998) regarding water use and pollution management must be adhered to at all times. • No pollution of surface water or ground water resources shall occur due to activities on the property	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• Limiting environmental degradation or pollution as a result of ignorance or accidents. • Preventing destruction, degradation or pollution of sensitive environments.
6. Dust and Noise Management	• It is not expected that dust and exhaust emissions will be generated during the operational phase of	Holder of EA or representative	Continuously throughout the operational	• Ensuring proper dust suppression

	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	the proposed development and shall therefore not be a significant nuisance. • The Department of Environmental Affairs has gazetted dust regulations. The applicant must comply with the NEM: AQA National Dust Control Regulations (GN No. R. 827) of 01 November 2013. • Noise generated from the operation of the facility must conform to the Western Cape Noise Control Regulations of 2013 (P.N. 200/2013). • These regulations prohibit a person from conducting any activity in such a way as to give rise to dust in such quantities and concentrations so that the dust, or dust fall, has a detrimental effect on the environment including health.		phase. If and when applicable and required.	and noise generated. • Minimizing the potential dust and noise impacts during the operational phase. • Ensuring that complaints from I&APs are limited.