ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED EXPANSION OF THE EXISTING CEMETERY ON FARM RE/71/158, ASHTON

July 2019

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eco impact Environmental Health & Safety Legal Consulting	**Title:** **THE PROPOSED EXPANSION OF THE EXISTING CEMETERY ON FARM RE/71/158, ASHTON** **1st DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME**

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Verification	Capacity	Name	Signature	Date
By Author(s):	EAP	Johmandie Pienaar		8 July 2019

COMMITMENT AND DECLARATION OF UNDERSTANDING BY CONTRACTOR AND DEVELOPER FOR THE EXPANSION OF THE EXISTING CEMETERY ON FARM RE/71/158, ASHTON

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

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

……..
For Contractor

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

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

……..
Developer's Representative

DEFINITIONS

Auditing:	A systematic and objective assessment of an organization's activities and services conducted and documented on a periodic basis based to a (e.g. ISO 19011:2003) standard.
Biodiversity:	The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.
Contractor:	An employer, as defined in section 1 of the Occupational Health and Safety Act 85 of 1993, who performs construction work and includes principal contractors
Environment:	A place where living, non-living and man-made features interact, and where life and diversity is sustained over time.
Evaporation:	The change by which any substance (e.g. water) is converted from a liquid state into and carried off as vapour.
Developer:	One who builds on land or alters the use of an existing building for some new purpose
Independent:	Is independent and has no interest in any business related to the development site, nor will receive any payment or benefit other than fair remuneration for the task undertaken
Groundwater:	Subsurface water in the zone in which permeable rocks, and often the overlaying soil, are saturated under pressure equal to or greater than atmospheric.
Landowner:	Holder of the estate in land with considerable rights of ownership or, simply put, an owner of land
Monitoring:	A systematic and objective observation of an organisation's activities and services conducted and reported on regularly.
Natural vegetation:	All existing vegetation species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on a site.
Pollution:	The result of the release into air, water or soil from any process or of any substance, which is capable of causing harm to man or other living organisms supported by the environment.
Protected Plants:	Plant species officially listed under the Threatened or Protected Species regulations as well as on the Protected Plants List (each province has such a list), and which may not be removed or transported without a permit to do so from the relevant provincial authority.
Red Data Species:	Plant and animal species officially listed in the Red Data Lists as being rare, endangered or threatened.
Rehabilitation:	Making the land useful again after a disturbance. It involves the recovery of ecosystem functions and processes in a degraded habitat. Rehabilitation does not necessarily re-establish the pre-disturbance condition, but does involve establishing geological and hydro logically stable landscapes that support the natural ecosystem mosaic.
Site:	Property or area where the proposed development will take place

ACRONYMS

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

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DEVELOPER'S COMMITMENT

The Langeberg Municipality ("LM") has committed itself to a set of values that include the maintenance of good relations and transparent communications with all stakeholders, and the dynamic engagement of the larger community.

LM undertakes to implement suitable management systems for all the areas and aspects of this operation. This will ensure that development itself and management of the project will comply with legal, technical, environmental and transformation policies and standards.

LM, in drafting this EMP for implementation, intends to enable continuous improvement in legal compliance and the sustainable operation of the site.

The EMP intends to change the way in which the owners, the construction process they have commissioned and the contractor plan for and manage resources to achieve sustainability.

The satisfactory implementation of the EMP on site will require both the full support and commitment of all personnel.

CHAPTER 1

1.1. Executive Summary

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

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

The Author and Eco Impact Legal Consulting (Pty) Ltd ("Eco Impact")

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

This report has been prepared by Johmandie Pienaar, of Eco Impact, an environmental consultancy, engaged in providing professional services in the field of environmental planning, -systems, -auditing and -biodiversity assessment and -management.

Johmandie Pienaar holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology (2008).

She has completed the following short courses at the Centre for Environmental Management;

- Implementing Environmental Management Systems (ISO 14001)(2009);
- Occupational Health and Safety Law for Managers (2010);
- Implementing an OHS Management System based on OHSAS 18001 (2010)
- Occupational Health and Safety Management System OHSAS 18001 Audit:

A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011).

Johmandie has trained as an Environmental Assessment Practitioner since March 2009 and has been involved in the compilation, coordination and management of Basic Assessment Reports, Environmental Impact Assessments, Environmental Management Programmes, Waste Licence Applications, Water Use Licence Applications and Baseline Biodiversity Surveys for numerous clients.

Johmandie has also been involved in conducting environmental and occupational health and safety legal compliance audits for a number of clients.

The client has appointed Eco Impact to prepare an Environmental Management Programme that meets the technical standards as required by DEA&DP.

1.2. Project Description

The project entails the expansion of the existing cemetery located on Erf RE/71/158 in Ashton.

The proposed expansion makes provision for:

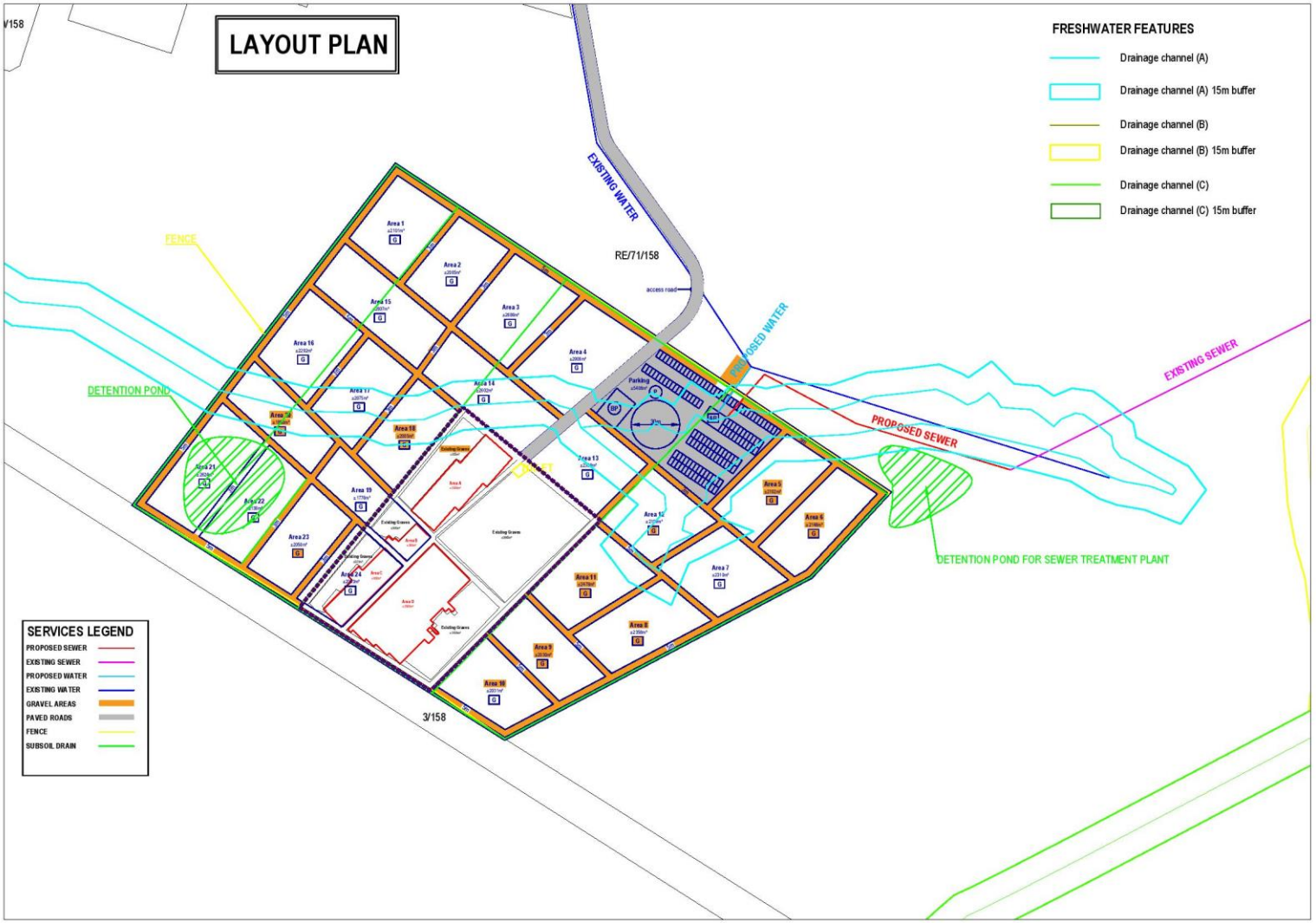
- Approximately 10 000 grave sites.
- Parking area which includes a space for a bus to park.
- Entrance gate and diamond mesh boundary fencing – 1100m of 1.8m high.
- Internal gravel roads with a width of 3-5m.
- Appropriate landscaping including indigenous trees and other applicable indigenous vegetation for shade and screening where appropriate with cleared, unmade pathways in-between.
- Ablution facilities with a 200m long 160mm sewer pipeline and pump station; and 40m long 110mm water pipeline.
- Effluent detention pond to manage effluent overflow from the adjacent sewerage treatment works in order to prevent entrance to the site. The detention facility with an overflow to an existing stream will be constructed in the north eastern corner of the site.
- Subsoil – and cut off drains are to be constructed upstream and throughout the site to divert surface water and near surface water around the site and to eliminate the lateral groundwater movement through the site. These drains are to be of adequate depth to intercept near surface groundwater. Indigenous vegetation is also to be planted throughout the site to lower the water table which may occur from time to time. An stormwater detention pond for the management of stormwater from the cemetery site is to be constructed in the south western corner of the site.

The development will incorporate the existing access road of 15m wide and 146m long to the existing cemetery which will be paved.

Footprint:
The development footprint for the proposed development is estimated to be approximately ±6.7ha of the 70ha site as surveyed.

Site:
Noteworthy existing infrastructure adjacent to and on the site includes the 1.71ha Silo's cemetery and railway line to the south, the approximate 4.62ha waste water treatment plant to the east, and a small-scale cattle farm. A remnant portion of a natural drainage line now fed almost entirely by the sewage works and continuously overflowing cattle trough falls within the proposed layout area. This watercourse was found to fall within a Ecological Category F since its entire catchment has been diverted into stormwater canal and even the local catchment has been cut off by construction of elevated banks. Although the two water sources supply more water than would have naturally been available, resulting in the formation of artificial riparian and wetland habitat. Neither water source is sustainable however and the habitat will most likely be lost in future whether or not the development goes ahead. It is not possible to re-establish the historical flow from the catchment as the degree of catchment hardening would result in severe erosion within the watercourse and would not be sufficient to increase the PES beyond a category F. The remaining site vegetation is characterised as significantly transformed Breede Shale Renosterveld (Least Threatened)

Proposed Layout Alternative 2 Map



CHAPTER 2

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

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

2.1 Organizational Structure

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

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

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

2.2 Responsibilities and Functions of the Environmental Control Officer

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

The ECO duties in this regard will include the following:

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

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

2.3 Agreed Work Plan and Site Visit Schedule of ECO

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

Information recording activity on site, and any guidelines or instructions emanating there from will be routinely made available electronically to the developer and applicable contractors and a copy of the report must be available at the site office.

Clearly matters of urgency or immediate action may be channelled appropriately on an urgent basis.

2.4 Site Manager

The site manager will have the following environmental control responsibilities:

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

2.5 Contractors

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

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

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

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

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

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

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

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

2.7 Compliance with other legislation

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

CHAPTER 3

Applicable Legislation, Policy and Environmental Principles

Take Note: the list below is by no means a comprehensive list, but a list of relevant applicable Acts. It does not identify the specific applicable sections and regulations. The Developer is ultimately responsible to identify and ensure that compliance with all relevant legislation, policies etc. is taking place on site at all times.

3.1 Applicable Legislation Identified

1. ADVERTISING ON ROADS AND RIBBON DEVELOPMENT ACT, 21 OF 1940
2. BASIC CONDITIONS OF EMPLOYMENT ACT, 75 OF 1997
3. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 130 OF 1993
4. CONSERVATION OF AGRICULTURAL RESOURCES ACT, 43 OF 1983
5. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996
6. EMPLOYMENT EQUITY ACT, 55 OF 1998
7. ENVIRONMENT CONSERVATION ACT, 73 OF 1989
8. ENVIRONMENT CONSERVATION ACT, 73 OF 1989: WESTERN CAPE NOISE CONTROL REGULATIONS
9. FENCING ACT, 31 OF 1963
10. HAZARDOUS SUBSTANCES ACT, 15 OF 1973
11. LABOUR RELATIONS ACT, 66 OF 1995
12. NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT, 103 OF 1977
13. NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 107 OF 1998
14. NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 39 OF 2004
15. NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 10 OF 2004
16. NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 59 OF 2008
17. NATIONAL FORESTS ACT, 84 OF 1998
18. NATIONAL HEALTH ACT 61 OF 2003
19. NATIONAL HEALTH ACT 61 OF 2003: REGULATIONS RELATING TO THE MANAGEMENT OF HUMAN REMAINS
20. NATIONAL HERITAGE RESOURCES ACT, 25 OF 1999
21. NATIONAL VELD AND FOREST FIRE ACT, 101 OF 1998
22. NATIONAL WATER ACT, 36 OF 1998
23. OCCUPATIONAL HEALTH AND SAFETY ACT, 85 OF 1993
24. LANGEBERG MUNICIPALITY: AIR QUALITY BY-LAW
25. LANGEBERG MUNICIPALITY: BY-LAW ON MUNICIPAL LAND USE PLANNING
26. LANGEBERG MUNICIPALITY: BY-LAW RELATING TO BOUNDARY WALLS AND FENCES
27. LANGEBERG MUNICIPALITY: BY-LAW RELATING TO PUBLIC NUISANCES
28. LANGEBERG MUNICIPALITY: BY-LAW RELATING TO ROADS AND STREETS
29. LANGEBERG MUNICIPALITY: BY-LAW RELATING TO WATER SUPPLY, SANITATION SERVICES AND INDUSTRIAL EFFLUENT
30. LANGEBERG MUNICIPALITY: CEMETERIES AND CREMATORIA BY-LAW
31. LANGEBERG MUNICIPALITY: FIRE SAFETY BY-LAW
32. LANGEBERG MUNICIPALITY: INTEGRATED WASTE MANAGEMENT BY-LAW
33. LANGEBERG MUNICIPALITY: OUTDOOR ADVERTISING AND SIGNAGE BY-LAW
34. LANGEBERG MUNICIPALITY: PARKING MANAGEMENT BY-LAW
35. LANGEBERG MUNICIPALITY: PUBLIC AMENITIES BY-LAW
36. LANGBERG MUNICIPALITY: STORMWATER MANAGEMET BY-LAWS
37. TOBACCO PRODUCTS CONTROL ACT, 83 OF 1993
38. WATER SERVICES ACT, 108 OF 1997
39. CAPE WINELANDS DISTRICT MUNICIPALITY: AIR QUALITY MANAGEMENT BY-LAW
40. CAPE WINELANDS DISTRICT MUNICIPALITY: BY-LAW RELATING TO FIRE SAFETY

41. CAPE WINELANDS DISTRICT MUNICIPALITY: MUNICIPALITY HEALTH BY-LAWS

CHAPTER 4

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

Compliance

4.1 Monitoring and Auditing

4.1.1 Introduction

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

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

The process of review and refinement, built into the requirements of the EMP, is known as monitoring and auditing.

4.1.2. Roles and responsibilities

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

Depending on the nature and scale of a project, implementing teams could be composed of any number of role-players, each with their own specified responsibilities.

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

4.1.2.1. Developer/landowner or custodian of the land

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

4.1.2.2. Contractor

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

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

4.1.2.3. Environmental Control Officer

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

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

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

4.2 The Monitoring Procedure

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

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

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

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

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

The order may be given orally or in writing by the ECO. Confirmation of an oral order will be given as soon as practicable, but lack of confirmation in writing must not be a cause for the offender to remain on site, or not be subject to a disciplinary process. Supervisory staff, the contractor or his sub-contractor may not direct any person to undertake any activities which would place such person in contravention of the EMP, legislation and specifications.

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

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

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

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

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

In cases of persistent non-compliance, the contractor or staff may be evicted from site after disciplinary process is followed. Only the developer/landowner may issue such instruction, retaining

any costs required to remedy situations perpetuated by environmental negligence, mismanagement and / or non-compliance.

4.3 The Auditing Procedure

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

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

To these ends the project will be audited versus this EMP for effectiveness. ISO/SANS 19011:2011 auditing standards will be applied.

An audit will be undertaken at completion of the construction phase. The audit report will be submitted to management, who will attend to all noted issues. The audit report will be submitted to the Department within 90 days after completion of the construction phase.

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

4.4 Retentions and Penalties

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

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

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

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

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

4.4.1. The Retention System

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

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

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

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

4.4.2. Penalty System

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

Any defacing or cutting down trees, existing infrastructure, not specified to be removed	R5000 each
Disturbance to natural veld and wetlands outside of approved development area	R1000 / m^2
Catching or harming wild animals	R3000 plus charges at SAPS
Litter resulting from operation	R250 / offence / day
Entering a no-go area on foot	R500
Entering a no-go area in a vehicle	R5000
Making a fire outside an approved fireplace	R20 000
Disposal of any litter or construction material in a no-go or non-specified area	R1000 / m^2
Dumping of cement, concrete, fuel or oil in an area or other than that authorised and suitable	R10 000
Any damage to plant life in a no-go area	R1000
Failure to use portable / toilets	R100 / observed incident or evidence of human excrement in the veld
Waste of water resources during construction phase	R1000/day
Any actions contrary to the Environmental Policy which continue after an initial penalty	Termination of contract.

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

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

4.5 Method Statements

Upon request from the ECO the contractors must provide written statements for discussion with the ECO on environmentally sensitive aspects of the contract. Environmentally sensitive aspects include by example excavations, work close to sensitive areas, collection and storage of top soil and vegetation, erosion control, wash water control, waste control, etc.

Methods Statement (MS) Content

It is important to note that the ECO may request further methods specification, if it be deemed necessary in his view.

Examples of standard Methods Statement which may be requested by the ECO:

- MS to specify the fire drill procedure to be followed in the event of a fire.

- MS to state how pollution will be prevented from entering any environmental system. To include the methods of filtering out pollution such as oil, petrol and waste from any working areas or roads.
- MS to specify special measures that will be needed in the event of large pollution spills.
- MS to indicate the timing and sequence of events to follow in sensitive areas to give sufficient time for the ECO to survey these areas and remove plants.
- MS on how recommended no-go/no-development areas will be demarcated and remain demarcated throughout construction phase.
- MS on water saving management plan that will be implemented during construction.

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

Example of Environmental Method Statement Form:

METHOD STATEMENT

CONTRACT:……..…….. **DATE:**……..

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

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

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

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

Start Date:	End Date:

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

Note: please attach extra pages if more space is required

DECLARATIONS

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

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

_____ _____
(signed) (print name)

Dated: _____

2) PERSON UNDERTAKING THE WORKS

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

_____ _____
(signed) (print name)

Dated: _____

3) APPROVING AUTHORITY (Engineer)

The works described in this method statement are approved.

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

Dated: _____

4.6. Compliance Auditing and Monitoring Schedule/s

Construction Phase	Submission of Audit Report To
Once-off Pre-construction ECO compliance monitoring	Construction Site Manager and Municipality
Monthly ECO compliance monitoring	Construction Site Manager and Municipality
Annual ECO compliance monitoring report	Construction Site Manager, Municipality and DEA&DP
Completion of Construction Phase ECO compliance monitoring (at the end of each construction phase completion)	Construction Site Manager, Municipality and DEA&DP
Operational Phase	
Annual external audit report to be compiled by ECO	Municipality and DEA&DP

CHAPTER 5

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

5.1. Good Housekeeping

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

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

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

5.2 Record Keeping

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

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

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

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

5.3 Document Control

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

The document control procedure must comply with the following requirements:

- Documents must be identifiable by organisation, division, function, activity and contact person;
- Every document must identify the person and their positions, responsible for drafting and compiling the document, for reviewing and recommending approval, and final approval of the document for distribution;
- All documents must be dated, provided with a version number and reference number, filed systematically, and retained for a specified period.

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

5.4 Reporting Requirements

All advice and recommendations made by the ECO must with the project engineer/engineers compliance be recorded on site in the site instruction book/ suitable register for his attention.

All spills will need to be documented and reported to DWS and other relevant authorities.

CHAPTER 6

6.1. Public Communication Protocols

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

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

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

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

CHAPTER 7

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

Copies of the specialists reports as listed in the table below must be kept at the construction site office and all management and staff members must be aware of and implement the relevant specialist's recommendations as and when required.

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

Botanical Impact Assessment, April 2019, Eco Impact:

Concluding Remarks and Further Recommendations

The small sections (less than 10%/7ha) of the overall site which falls within the vegetation areas delineated as critically endangered Muscadel Riviere (northwestern corner) and

endangered Breede Alluvium Renosterveld (southern border) does not show any characteristics of these vegetation types and no plant species of conservation concern were recorded within these areas. The Muschadel Riviere area has also been isolated by existing industrial developments and the railway line, similarly the Breede Alluvium Renosterveld area has been isolated by the railway line not allowing feasible ecological connectivity between the site and any adjacent natural habitats. Most of the site is mapped as Breede Shale Renosterveld (Least Threatened). Due to the limited indigenous terrestrial vegetation diversity; low ecological connectivity; previous and ongoing impacts i.e. livestock overgrazing and developments and current significantly degraded and transformed state of the ±70ha site the overall terrestrial botanical sensitivity of the site is rated as low.

The terrestrial vegetation remaining on the proposed development site is characterised as Breede Shale Renosterveld (Least Threatened). The overall state of indigenous vegetation on these areas is significantly degraded, transformed and with limited diversity. No species of conservation concern were recorded on the site. The overall terrestrial botanical sensitivity of the site and surrounds is therefore rated as low.

The two layout alternatives as assessed overlaps and is mainly mapped as terrestrial ESA with a very small section of layout alternative 1 mapped as terrestrial CBA along the western border, however the proposed development site is surrounded by developments which will in future expand and isolate the site even further from feasible ecological connectivity therefore if the proposed mitigation measures are implemented the significance rating of potential impacts on terrestrial features of the site and surrounds is rated as **low negative.**

There are also areas on site and surrounding the wastewater treatment works identified as Aquatic Critical Biodiversity Areas, but freshwater features of the site has been assessed in a separate freshwater impact assessment.

If strict adherence is kept to the recommendations as set out in this report, as well as the Freshwater Ecology Assessment report and an EMP, the proposed development will not have a significant impact on any listed species or sensitive environments.

No significant breeding, roosting or habitat on the site will be impacted upon. Most species will move out of the area into similar adjacent habitats.

Recommended mitigation measures:

- The storm water runoff must be accommodated in designed and constructed storm water systems which must link into the downstream systems to prevent erosion.
- Existing access roads must be used.
- The project implementation process should be fully subject to regular and up to requisite standard Environmental Management Programme prescripts and conditions, inclusive of regular competent ECO supervision.
- Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases.
- Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.

Eco Impact is of the opinion, and based on the survey and desk study done, that the cemetery expansion; if designed and implemented according to the recommendations will not impact significantly on the biodiversity, or adversely affect the ecological functioning of the area.

Proposed Extension of Cemetery On RE/71/158, Ashton, Report of Geotechnical Investigation,

SKCMasakhizwe Engineers 2019:

8 Conclusions

8.1 Soil excavatability and workability
Excavations will be difficult by excavator due to the hardness of the underlying rock layers and the gravelly nature of the soils closer to the surface. A 20 tonne excavator (min.) is proposed. Once excavated, the soil will be suitable for use as backfilling of the graves, provided that large boulders and cobbles be removed prior to backfilling. Also see 3.1 of the report.

8.2 Grave stability
Suitable edge protection to the alluvium layers will be required after excavation to prevent the sides collapsing during the burial ceremony. Also see 3.2 of the report.

8.3 Site topography
The maximum natural slope of the site is approximately 2º. Water ponding on the site should not be problematic, as the slope is ideal for the use as cemetery. As seen in 3.4 of the report.

8.4 Site drainage
Surface water drainage must be observed to prevent ponding of water, but we do not foresee this to be required as the slope is in the ideal range. Surface water originating upstream of the site must be diverted around the site using maintained drains (see drawing W1920-03-TP) of new cut-off drains to be constructed. These daubs must be deep enough to penetrate the weathered rock layers to prevent near surface water from flowing through the site. Internal roads must be utilised to channel stormwater to suitable discharge points. These discharge points must be protected against scouring and erosion by providing stone masonry or other suitable erosion control measures. Also refer to 3.5 of the report.

8.5 Soil permeability and basal buffer area.
Occasional water logging of the near surface alluvium layers will be greatly reduced with the implementation of the proposed-on site storm water drains as well as the perimeter drains diverting surface water around the site. Both these measures will reduce the possibility of groundwater pollution. Also see 3.6 and 3.7 of the report.

8.6 Position in respect of domestic water sources and drainage features
Potable water is supplied to the town of Ashton via Municipal pipelines. The nearest registered borehole to the proposed site is unknown but is assumed to be further away than the min distance of 150m (for permeability of 1 x 10^{-7} cm/s). The closest drainage feature to the proposed site is the non-perennial stream (Sarahs River) approximately 280m south-west of the site. The river is further than the minimum recommended safe distance of 150m (for permeability of 1 x 10^{-7} cm/s), and as this stream is not flowing throughout the year, it is not perceived as problematic. Also refer to 3.8 of the report.

9 Recommendations

The following mitigation measures must be applied in order to reduce the risk of groundwater pollution:

9.1 Adequate surface drainage features must be installed on site to prevent ponding of water. These must include adequately aligned internal roads to allow free drainage off the burial areas onto the roads, as well as free drainage along the roads to suitable discharge points on the boundary of the proposed site.

9.2 Cut-off drains must be installed upstream of the site, and on site as proposed (on the locality plan), to divert surface and near surface water around the proposed site to eliminate

lateral groundwater movement through the site. These drains must be of sufficient depth to penetrate the weathered rock layers to intercept near surface water.

9.3 Indigenous vegetation must be planted to lower water table that may occur from time to time.

Freshwater Assessment: Silo's Cemetery (Remaining Extent Erf 71 of 158), Ashton, Western Cape, December 2018, EnviroSwift

Conclusion and Recommendations

Five watercourses were identified and delineated including a recently excavated artificial drainage channel (A), a formal stormwater canal system (B), a remnant portion of a natural drainage line (C), now fed almost entirely by a sewage works and continuously overflowing cattle trough, a remnant portion of natural drainage line (D) that has been cut off from its catchment, partially infilled and no longer function as a drainage line, and one artificial wetland area (E) that is, in the opinion of the specialist, entirely unnatural.

Watercourse D was found to no longer function as a watercourse and cannot in the opinion of the specialist be reinstated given the scale of the changes in the catchment and watercourse and is therefore, in the opinion of the specialist, no longer a watercourse. According to aerial imagery, the watercourse appeared during 2013 and is in the opinion of the specialist, likely the result of a burst pipe. Only watercourses A, B and C were assessed further.

Watercourses B and C were therefore evaluated by best practice methods to determine current (predevelopment) Present Ecological State (PES). Watercourse C fell within the IHIA Category F, while watercourse B was found to fall within a category E.

The degree of transformation of the two watercourses and their catchments was such that neither can practically achieve a higher category than the present state and were therefore assigned an REC equal to their current PES. Application of the best practice method for determination of an appropriate minimum buffer found that a buffer of 15m would be appropriate for watercourses A, B, and C.

The potential impacts of the two proposed layouts was then assessed on the watercourses B and C. B was found to be too far from the proposed layouts to be impacted, while C falls within both layouts. The preferred layout includes Watercourse C within the proposed parkland, while the preferred layout proposes infilling and installation of graves over Watercourse C. This watercourse has however been cut off historically from its catchment in its entirety and would not exist if not for augmentation from the WWTW and an overflowing cattle trough. The overflowing cattle trough, presently fed by a hose from a municipal water main, falls within the proposed site for both layouts and will be shut down as part of the development. The WWTW augmentation will also cease after the sewage works is upgraded. Once the two artificial water sources no longer supply the watercourse, it will cease to exists. The riparian and wetland vegetation will most likely die off rapidly, and this area will become entirely terrestrial in nature.

The potential impact of leachate from graves on the Sarahsrivier and its floodplain wetlands downslope was also assessed. Given that the proposed sites for the two layouts do not produce runoff that enters the Sarahsrivier, that floodplain wetlands are usually supplied primarily by the river and not by groundwater or interflow, given that the railway line between the river and the proposed sites forms a substantial barrier to subsurface flow and given the phased installation of graves over several years, it is unlikely that much leachate will reach the Sarahsrivier over 400m away, if at all. The impact significance for this potential impact was therefore found to be Very Low (negative) regardless of the layout.

Summary of Recommendations Proposed:

- Clear and construct in summer when rainfall is minimal.
- Direct all stormwater into the retention pond.
- Construct the retention pond from permeable materials such that maximum groundwater/interflow recharge still occurs.

There is therefore no material difference between the two proposed layouts in terms of freshwater constraints and both layouts were found to be of Very Low (negative) impact for every impact assessed, with or without mitigation where mitigation has been provided. The provided mitigation measures will reduce impact however within the Very Low category, and it is therefore recommended that the proposed development be approved on condition that the proposed mitigation measures be implemented.

GOALS FOR PLANNING AND DESIGN PHASE

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

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

OBJECTIVE PD1: ENSURE THE DESIGN OF THE DEVELOPMENT RESPONDS TO THE IDENTIFIED ENVIRONMENTAL CONSTRAINTS AND OPPORTUNITIES

The most sensitive landscape features for planning purposes in the study area is the surrounding medium botanical sensitivity area, wetlands and sandy soil of the development sites which could make certain areas more susceptible to erosion. Access roads and construction camp areas should be placed so as to minimise the impacted area and construction sites should be clearly demarcated and no additional areas outside of the approved development footprint areas may be impacted upon.

Project Component/s	Access roads Construction area Development Layout
Potential Impact	Design fails to respond optimally to the environmental consideration.
Activities/Risk Sources	Poor consideration of the natural landscape features.
Mitigation: Target/Objective	Ensure that the design of the developments responds to the identified environmental constraints and opportunities.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Design the proposed development taking into account all environmental impacts and aspects as identified during the assessment process.	Municipality Developer Town planner Engineer EAP	Design Phase
The developer together with the inputs of the engineer, EAP and town planner must determine which	Municipality Developer	Design Phase

technological alternatives will suit the proposed development site the best and which are reasonable and feasible to implement, also taking into account funding available for the development. Some of these technological alternatives to be considered for the proposed development include: • Type of construction materials used. • Reduce hard surfacing as far as possible to encourage rain water to seep back into the ground rather than being carried away into the drainage systems. • Designed paved areas so that water run-off is slowed down and where possible used soak away and permeable paving that allows water to filter into the ground. • Aim for and promote zero waste in planning, operation, management, maintenance and demolition of the structures. I.e. build waste avoidance into the process at a design phase, by specifying products and materials that have less wasteful production processes and don't create wasteful emissions during construction, maintenance and demolition of a structure.	Town planner Engineer EAP	
Access roads to be carefully planned along existing access roads to minimise the impacted area and prevent unnecessary over compaction of soil.	Municipality Developer Town planner Engineer EAP Contractor	Design phase
As far as possible new roads must link with existing roads infrastructure.	Municipality Developer Town planner Engineer EAP Contractor	Design phase
The holder of an environmental authorisation has the responsibility to notify the competent authority of any alienation, transfer and, change of ownership rights in the property on which the activity is to take place.	Municipality Developer	Pre-construction
Fourteen (14) days written notice must be given to the Department that the activity will commence. The notification must include a date on which the activity will commence as well as the reference number.	Municipality Developer	Pre-construction
ECO to be appointed prior to the commencement of any authorised activities. Once appointed the name and contact details of the ECO must be submitted to the DEA&DP.	Municipality Developer	Pre-construction
All safety requirements for the construction and operation of proposed infrastructure must be factored in during the planning phase i.e. traffic management.	Municipality Developer	Pre-construction

Performance indicator	Design meets objectives and does not degrade the environment. Design responds to the mitigation measures and recommendations in the BA report. Minimal impact on the surrounding environment
Monitoring	Ensure that the design implemented meets the objectives and mitigation measures in the BA report through review of the design by the EAP, Project Manager, Developer and the Contractor prior to the commencement of construction.

OBJECTIVE PD2: ENSURE EFFECTIVE COMMUNICATION MECHANISMS WITH THE VARIOUS STAKEHOLDERS

On-going communication with affected and surrounding landowners and key departments is important to maintain during the construction and operational phases of the developments. Any issues and concerns raised should be addressed as far as possible in as short a timeframe as possible.

Project Component/s	Communication protocols
Potential Impact	Communication failure that can lead to a number of detrimental impacts such as failure to comply with EMP requirements due to not receiving correct or any instructions.
Activities/Risk Sources	Communication between all relevant parties
Mitigation: Target/Objective	Effective communication with all relevant parties Addressing of any issues and concerns raised as far as possible in as short a timeframe as possible.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Compile and implement a grievance mechanism procedure for the public to be implemented during both the construction and operational phases of the facility. This procedure should include details of the contact person who will be receiving issues raised by interested and affected parties, and the process that will be followed to address issues.	Developer Contractor	Pre-construction Construction phase Operational phase
Discuss and agree upon communication protocols during pre-construction site meeting	Contractor Developer ECO	Pre-construction Construction phase

Performance indicator	A public complaint register is available at the site office and public complaints recorded in the register and dealt with swiftly. Pre-construction meeting minutes indicates communication protocols were discussed and agreed upon.
Monitoring	An complaint or finding must be recorded, addressed and monitored by the ECO as according to the requirements of the EMP.

OBJECTIVE PD3: PRE-CONDITIONS

The following pre-conditions shall be fully met before any construction activities may commence:

- ECO to be appointed prior to the commencement of any authorised activities. Once appointed the name and contact details of the ECO must be submitted to the DEA&DP.
- Plan and conduct pre-construction activities in an environmentally acceptable manner
- Fourteen (14) days written notice must be given to the Department that the activity will commence. The notification must include a date on which the activity will commence as well as the reference number.

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

- Demarcate micro construction sites, services routes, access routes, working boundaries and no-go areas. Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase;
- Discuss methods of stockpiling (vegetation, topsoil, sub-soil, shell-grit, etc.);
- Check required toilets and fire-fighting facilities to be in place;
- Discuss and agree restricted access to construction site and location of construction camp;
- Sign the Declaration of Understanding (Contractors);
- Discuss and agree communication channels/protocols including contact details;
- Discuss and agree areas of responsibility;
- Discuss and agree the demarcation and control of construction and building sites.
- Conduct flora and fauna search and rescue as required
- Discuss and implement adherence to site specific specialist recommendations

- Discuss and agree on site specific method statements to be submitted by the contractor to the ECO for approval before commencement

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

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

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

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted:

- to the site manager and municipality during the pre-construction ECO site visit.
- to the site manager and municipality monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted)
- to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase
- to the DEA&DP, site manager and municipality at the completion of the construction phase

OBJECTIVE PD4: LAYOUT PLAN CONTROLS

The contractor must ensure that a copy of the signed approved layout plan is available at the office on site at all times for inspection by the developer or his representative(s). Any variation to the approved layout plan must be submitted to the developer for signed approval and may only be implemented once the approved variation is available to the contractor and available on site at the office. The variation of changes to the layout must be approved by the competent authority as per the EA conditions.

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted:

- to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted)
- to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase
- to the DEA&DP, site manager and municipality at the completion of the construction phase

OBJECTIVE PD5: ADVERTISING

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

This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted:

- to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted)
- to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase to the DEA&DP, site manager and municipality at the completion of the construction phase.

CONSTRUCTION AND REHABILITATION PHASE
CIVIL CONTRACTOR

Goal for Construction Phase

Overall Goal for Construction:

Undertake the construction the cemetery infrastructure in a way that:

- Ensures that construction activities are properly managed in respect of environmental aspects and impacts;

- Enables construction activities to be undertaken without significant disruption to other land uses in the area, in particular concerning noise impacts, dust, farming practices, traffic and road use, and effects on local residents;
- Minimises the impact on the surrounding area;
- Minimises impacts on avifauna and other fauna using the sit;
- Minimises the impact on the heritage and historical value of the site; and
- Minimise possible health impacts.

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

OBJECTIVE C1: WORKING HOURS

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

Project Component/s	Construction site Access roads		
Potential Impact	Surrounding landowners and residents are exposed to noise generated from the development site.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Effective communication with affected and surrounding landowners; Addressing of any issues and concerns raised as far as possible in as short a timeframe as possible.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Contractors may only be present on the site during the standard working time hours.		Contractor	Construction phase
Performance indicator	Construction only taking place during approved working hours.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.		

OBJECTIVE C2: SECURITY, SAFETY AND EMERGENCIES

Project Component/s	Construction site Access roads Adjacent residential areas		
Potential Impact	Safety of the public, surrounding landowners and residents Safety of personnel working on site Safety of visitors on site		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect all involved from incidents and injury		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Access to the construction sites must be controlled. Notices should be displayed at all public entrances to the property, warning visitors that they are entering a construction site and that all visitors must report to the		Contractor	Construction phase

site office.		
Telephone numbers of emergency services, including the local fire-fighting services, must be posted conspicuously in the contractor's office and near the telephone. No firearms are permitted on the construction site, other than those authorised by the developer for the property security service provider if needed.	Contractor	Construction phase
All personnel must wear Personal Protective Equipment during the construction as required.	Contractor	Construction phase
If an environmental emergency such as fire, oil/fuel spills, sewage pipe burst, floods etc. occurs on site during the construction phase immediate actions must be taken to manage and contain the situation by the contractor/s and municipality. Within 24hours of emergency detection the ECO must be informed of the incident, where after ECO will conduct a site visit and recommend further remediation and/or rehabilitation methods to be implemented. Depending on type and extent of emergency that occurred specialists may be contacted to provide specific recommendations. An incident report must be completed and sent to municipal and governmental authorities.	Contractor Municipality ECO	Construction phase
Performance indicator	All required notices posted at public entrances and at the site office. All personnel wearing PPE as required All emergency situations contained and reported as soon as possible and preventative measures put in place.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.	

OBJECTIVE C3: SPEED LIMIT

Project Component/s	Construction site Access roads		
Potential Impact	Speeding motorists and construction vehicles could injure personnel, members of the public or cause damage to property/infrastructure.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect all involved from incidents and injury.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
For security and safety reasons the speed limit on the property for all contractors' vehicles is 30 km per hour. The contractor is responsible for ensuring that all his employees, sub-contractors and delivery vehicles adhere to this rule. A notices should be displayed at the entrance of the construction sites indicating that the speed limit is 30km/h		Contractor	Construction phase
Performance indicator	Notice boards at site entrance indicating a speed limit of 30km/h. All vehicles entering construction sites adhering to 30km/h speed limit		

Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.

OBJECTIVE C4: CONTRACTOR'S CAMP

Project Component/s	Construction camp		
Potential Impact	Degradation of the natural environment inside/outside of the development area.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on the environment.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
The location and extent of the contractor's camp area will be discussed and approved by the developer/landowner and ECO.		Developer Contractor ECO	Construction phase
The contractor's camp is to accommodate the site offices, temporary waste storage area, and bunded concrete/cement mixing area, contractor stores, servicing, parking and refuelling area for vehicles and machinery, as well as adequate ablution and accommodation facilities for employees.		Contractor	Construction phase
The construction camp is not to be established within 32m of a watercourse or within a no-go area		Contractor	Construction phase
Construction material will be stored at the contractor's camp, as well as on the construction site within the demarcated working areas at each construction point. Special permission may be obtained from the ECO/ER to store material on suitable substitute or ancillary locations should the need arise, and as communicated by the project engineer.		Contractor	Construction phase
Performance indicator	ECO in conjunction with the landowner and contractor will approve construction camp area outside of no-go areas and more than 32m away from the edge of a watercourse. Construction camp to be neatly fenced and to accommodate all facilities as listed above and elsewhere in EMP.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.		

OBJECTIVE C5: DELIVERIES TO CONTRACTORS

Project Component/s	Construction site Construction camp Access roads
Potential Impact	Increased traffic, congestion and noise for surrounding landowners / residents and other road users. Impact on the natural environment.
Activities/Risk	Activities associated with site construction

Sources			
Mitigation: Target/Objective	To protect and mitigate impacts on the environment, surrounding land uses, landowners, and personnel working on site.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Contractors will at all times be responsible for compliance by their delivery service providers as engaged. Delivery times will be limited to working times as defined in this document.		Contractor	Construction phase
Contractors have the responsibility of advising the property security staff of deliveries expected and to be executed.		Contractor	Construction phase
Contractors shall further ensure that drivers of service providers are informed of all procedures and restrictions e.g. which access road to use, speed limits, no-go areas, demarcated construction areas, and maximum allowed vehicle mass etc., as applicable before their first visit to site.		Contractor	Construction phase
Washing of service provider delivery vehicles and equipment will not be allowed on the property and must be carried out elsewhere.		Contractor	Construction phase
Performance indicator	All delivery vehicles and staff adhere to the rules of the site.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.		

OBJECTIVE C6: DEMARCATION, SITE CLEARANCE AND FENCING

Project Component/s	Construction site Access roads Construction camp No-go areas		
Potential Impact	Safety of the public, surrounding landowners and residents Safety of personnel working on site Safety of visitors on site Protection of sensitive environmental features		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on the environment, surrounding land uses, landowners, and personnel working on site.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Demarcate no-go areas before any land clearing occurs under the supervision of an ECO		Contractor ECO	Construction phase
The ECO together with the site manager must indicate each construction site and/or access route to be demarcated and demarcation methods to be used before construction commences and construction personnel will not be allowed beyond the construction perimeter of the site. Physical demarcation of construction sites should at the very least be via colour coded posts at least 1,5m high. Relatively small construction areas can be fenced with wooden or metal post at 3m centres with 1 plain wire strand tensioned horizontally at 900mm from ground		Contractor ECO	Construction phase

level. Commercially available danger tape may also be wrapped around the wire strand. For large areas, like fairways, these posts are to be at 15m centres with 5 equidistant easily visible lime spot markings in between.		
Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase	Contractor	Construction phase
Site clearance along the border of the no-go areas must be done under the supervision of an ECO.	Contractor ECO	Construction phase
Personnel should be restricted to the construction camp site and immediate construction areas only.	Contractor	Construction phase
Construction areas and access routes must be clearly demarcated to restrict access/egress across such demarcated lines and minimise environmental impact.	Contractor ECO	Construction phase
All activities including stockpiling must occur within this demarcated area.	Contractor	Construction phase
The Contractor responsible for impacting on areas outside of the demarcated construction areas must fund reinstatement or rehabilitation of damaged areas and features.	Contractor	Construction phase
The onus here will fall on the contractors to ensure all respect these no-go lines.	Contractor	Construction phase
Failure to ensure discipline will lead to the immediate erection of more physically challenging structures.	Contractor	Construction phase
No run-off oil, cement, or any other building material is to be permitted, or allowed to enter the no-go areas	Contractor	Construction phase
In the event that sensitive features outside of demarcated development areas are threatened by construction activities, the temporary fencing off of these areas or the construction area, when working in a mainly natural environment, is recommended and will be determined by the ECO.	Contractor ECO	Construction phase
Remove and conserve topsoil layer and overburden material for rehabilitation after construction activities have ceased.	Contractor	Construction phase Rehabilitation
Removal of soil must be kept to a minimum as far as possible and should only take place in areas where development will take place as part of the approved development footprint.	Contractor	Construction phase
Performance indicator	Demarcated construction areas and/or no-go areas remain demarcated and undisturbed throughout construction phase.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.	

OBJECTIVE C7: INDIGENOUS FAUNA AND FLORA

Project Component/s	Construction site Access roads Construction camp No-go areas
Potential Impact	Impact on indigenous fauna and flora.
Activities/Risk Sources	Activities associated with site construction

Mitigation: Target/Objective	To protect and mitigate impacts on the indigenous fauna and flora.	
Mitigation: Action/Control	**Responsibility**	**Timeframe**
Indigenous plants or wild animals including reptiles, amphibians, birds, etc. may not be damaged or harmed or interfered with. Vegetation removed as part of the legitimate development requirements is excluded.	Contractor	Construction phase
Trapping, poisoning and/or killing of animals is specifically and strictly forbidden.	Contractor	Construction phase
All indigenous vegetation and soil materials must be stockpiled and stored (at site identified by ECO), and used for rehabilitation of the disturbed areas upon construction completion.	Contractor ECO	Construction phase
Demarcate proposed no-development areas before construction commences and maintain demarcation throughout construction phase to ensure that it is not impacted upon.	Contractor	Construction phase
Personnel should be restricted to the construction camp site and immediate construction areas only.	Contractor	Construction phase
Site clearance along the border of the no-go areas must be done under the supervision of an ECO.	Contractor ECO	Construction phase
Rehabilitate impacted indigenous vegetation areas outside of the development areas immediately if disturbed.	Contractor	Construction phase Rehabilitation phase
Conduct search and rescue of vegetation species of conservation concern and tortoises under the supervision of a qualified ECO before construction site clearance commence.	Contractor	Construction phase
Restrict development to low botanical sensitivity area as delineated by the specialist throughout construction phase, ensuring that no areas outside of the proposed development footprint area are further disturbed.	Contractor	Construction phase
Performance indicator	No indigenous fauna and flora and their habitats outside of approved development footprint areas are impacted upon. All vegetation and materials removed from site during excavations stockpiled and re-used for rehabilitation of disturbed sites.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase.	

OBJECTIVE C8: ALIEN INVASIVE PLANTS

Project Component/s	Construction site Access roads Construction camp
Potential Impact	Alien/invasive plant species spread into natural/indigenous vegetation areas.
Activities/Risk Sources	Activities associated with site construction and associated disturbance of natural areas
Mitigation: Target/Objective	To protect and mitigate impacts on the environment.

Mitigation: Action/Control	**Responsibility**	**Timeframe**
The contractor must clear all weeds and alien invasive plant from the proposed development sites, access routes and construction camp.	Contractor	Construction phase
No on-site burying, dumping or stockpiling of any weeds or invasive species must occur. They should be removed from the site and dumped at a suitable dumping site from which seed cannot escape.	Contractor	Construction phase
The contractor must make sure of and implement all legal requirements regarding herbicide application procedures if herbicide is to be used to control weeds/invasive plants. The instructions on the herbicide labels must be strictly followed throughout application. .	Contractor	Construction phase
The contractor shall take all necessary precautions to prevent overspray of herbicides outside of the demarcated construction areas and onto natural veld.	Contractor	Construction phase
All personnel working with any herbicide, pesticide or fertilizer must be registered and comply with the requirements set in these registrations.	Contractor	Construction phase
All equipment associated to herbicides and pesticides must be maintained in accordance to the set standards.	Contractor	Construction phase
The disposal of all redundant and empty containers of herbicides and pesticides must be controlled and disposed of at a waste management facility licensed to do so under the National Environmental Management: Waste Act.	Contractor	Construction phase
Undertake construction activities only in identified and specifically demarcated areas.	Contractor	Construction phase
An important aspect of on-going maintenance is the monitoring of the rehabilitated sites and access road verges for alien plant species.	Contractor	Construction phase
Ensure building materials brought onto site are free of alien seeds.	Contractor	Construction phase
Materials such as sand and stone should, wherever possible, be sourced from local areas which are free of alien plants.	Contractor	Construction phase
Rehabilitation of disturbed area should be done with seeds collected in the area during rehabilitation and with topsoil as derived of the development site	Contractor	Construction phase Rehabilitation phase
The contractor must make sure of, and allow, all legal requirements regarding herbicide application procedures. It is vital that the contractor becomes familiar with all the information detailed on every herbicide label before using it. The instructions on the label must be strictly followed throughout. The contractor shall take all necessary precautions to prevent overspray of herbicides outside of the	Contractor	Construction phase Rehabilitation phase

demarcated construction areas and onto natural veld. All personnel working with any herbicide, pesticide or fertilizer must be registered and comply with the requirements set in these registrations. The contractor must put a system in place to control the use of herbicides and pesticides. All equipment associated to herbicides and pesticides must be maintained in accordance to the set standards. The disposal of all redundant and empty containers of herbicides and pesticides must be controlled and disposed of at a waste management facility licensed under the National Environmental Management: Waste Act		
Performance indicator	All possible introduction and spreading of alien invasive plant species are controlled.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C9: STORM WATER MANAGEMENT

Project Component/s	Construction site Access roads Construction camp No-go areas	
Potential Impact	Erosion due to poor storm water management. Pooling of water / flooding in portions of the development site due to poor storm water management.	
Activities/Risk Sources	Activities associated with site construction	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment.	
Mitigation: Action/Control	**Responsibility**	**Timeframe**
To minimise or prevent erosion and overflowing/flooding the work must be done as far as possible during the dry season.	Contractor	Construction phase
Areas disturbed during construction must be re-shaped as according to surrounding contours and stabilised as soon as possible.	Contractor	Construction phase
All roads need to be maintained and monitored and visible signs of possible erosion immediately rehabilitated.	Contractor	Construction phase
All areas impacted during construction must be maintained and monitored and visible signs of possible erosion immediately rehabilitated and prevention measures put in place.	Contractor Municipality	Construction phase
It will be the responsibility of the developer to ensure contractors apply erosion control measures throughout the period of risk and that the works are protected from damage that may be caused by rainwater runoff.	Contractor Municipality	Construction phase
Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion.	Contractor Municipality	Construction phase
Adequate provisions of stormwater management including inter alia channels, litter traps etc. must be used	Contractor Municipality	Construction phase

to divert stormwater away from the activities that could lead to its contamination.		
Performance indicator	All signs of erosion are controlled and affected areas rehabilitated.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C10: ARCHAEOLOGY AND PALAEONTOLOGY MANAGEMENT

Project Component/s	Construction site Access roads Construction camp		
Potential Impact	The loss of cultural or heritage resources.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate the potential loss of cultural and heritage resources.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Should any heritage or fossil remains be exposed during any excavation or related activities, activities on the relevant site must stop immediately and these finding must be reported to the provincial heritage resource authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No.25 of 1999) via the ECO.		Contractor ECO	Construction phase
Heritage remains uncovered or disturbed during earthworks must not be further disturbed until inspection and verification by a professional has been conducted.		Contractor Heritage Professional	Construction phase
Performance indicator	Protection of heritage resources		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase		

OBJECTIVE C11: DIESEL FUEL AND LUBRICANT HANDLING PROGRAMME

Project Component/s	Construction site Access roads Construction camp No-go areas		
Potential Impact	Contamination of soil, storm and ground water resources as a result of an oil/diesel/lubricant spill/leak.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts of contaminants on the environment and hydrological features.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Servicing of construction vehicles and machinery to take place off site at a vehicle workshop.		Contractor	Construction phase
All vehicles must be in a good condition and inspected		Contractor	Construction

on a daily basis with no leakages leading to possible contamination of soil or water supplies.		phase
All waste oils, fuels and lubricants are considered hazardous waste to be stored separately in bunded areas and disposed of at a licensed hazardous waste handling facility and for which safe disposal certificates must be kept.	Contractor	Construction phase
It is the responsibility of each landowner, lease holder or developer to ensure that they are aware of and adhere to the requirements of the NEM:WA as it pertains to their operations.	Contractor/landowner/ lease owner/developer	Construction phase
The following conditions related to the temporary fuel tanks must be implemented: • The fuel tanks must be designed and installed in accordance with relevant Oil Industry standards and SANS codes where applicable for the aboveground storage tanks. The tanks must be located within a bund (110 % of the tanks capacity) in order to contain potential spills. • During fuel tanker delivery, the tanker driver must be present at all times during product offloading. Should an incident occur the supply vehicle emergency cut-off switch must be activated to immediately stop fuel delivery. Flexible hoses with dry-break couplings and emergency isolation must be used. All spillage incidences and actions taken consequent thereto must be reported to the ECO and recorded in the site register. • All fuel and flammable liquids should be stored under secure and fenced conditions and in a bunded site with the volume of the bunding capable of holding 110% of the liquid. • The applicant must ensure that effective stock inventory monitoring and regular auditing take place for the early identification of possible leaks. • The requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), must be adhered to. Within three months of the tanks ceasing to be used the tanks must be removed at the expense of the applicant, and the site, including all associated infrastructure must be rehabilitated to the satisfaction of the relevant authority.	Contractor	Construction phase
Refuelling: • Refuelling of equipment must be conducted from the bunded fuel tank and pump at the contractor's camp. • Fuel tanks must be bunded and supplied with a concrete apron. Any spills on the concrete apron or floor below the tank are to be treated with OT8 or Spillsolve or equivalent as per the product instructions. • A 500 litre drawn trailer to convey diesel to the equipment for re-fuelling may also be used. Such trailer will be drawn by a specified vehicle and driver, with alternate nominated	Contractor	Construction phase

as approved by the Site Manager. Such tow vehicle may travel at 20kms per hour maximum at any time, be clearly identifiable as such, and may only tow the diesel cart should the pre requisite drip trays and emergency equipment be on the vehicle at the time. • Staff will require instruction in the identification of diesel and oil leaks and the use of Spillsolve (or equivalent) products.		
On-Site emergency repairs: • Only small mobile plant and emergency repairs are to take place on site. These will require the provision of drip trays and funnels to ensure that no oil or fuel leakages occur onto the ground. Should such spill take place, then the oil saturated soil is to be placed in suitable containers and disposed of at a hazardous waste disposal site. • Any contamination of soil is to be treated with Spillsolve or similar product. Contaminated water as a result of an oil or fuel spillage on the area should similarly be treated in appropriate way, and the polluted water should be specifically removed and not allowed to merge with run-off water collected in the trap collecting all run offs from the slab.	Contractor	Construction phase
Collection of contaminated spares and waste oils: • Contaminated spares, oil filters, gaskets, water, etc. must be collected in separate holders at the designated storage facility for disposal at a licensed H:h (hazardous waste handling) site. • Staff will require instruction in: -Deleterious effects of oil / fuel on the environment -Identification of oil leaks -Handling of oil / fuel leaks into soil -Location and method in storage of contaminated spares -Fire prevention and emergency drills in case of an accident	Contractor	Construction phase
Any oil or diesel spills etc. must be reported to the site manager and rehabilitation measures must be taken immediately and contaminated soil disposed of at a licensed hazardous waste handling facility.	Contractor	Construction phase
Performance indicator	Ensure that fuel storage, re-fuelling, emergency repairs, collection of contaminated spares and waste oils takes place as according to requirements and that no spillages occur and if it does occur that it is handled and cleaned up accordingly.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C12: SERVICES

Project Component/s	Construction site Bulk services and network services Sewerage network Power supply Water resources/supply Access roads		
Potential Impact	Damage/loss of services infrastructure or supply.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on existing services infrastructure and surrounding land users; landowners and residents.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Care and due cognisance must be taken of existing services, service routes and services restrictions. The contractor shall be held liable for damages, expenses or costs incurred for any interruption in supply, variation, frequency, or failure of any utility provider to supply service if the contractor is found to be responsible for unplanned service interruptions.		Contractor	Construction phase
All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to.		Contractor	Construction phase
Implement water saving requirements as per Circular C1 of 2018 - Water Crisis Response Policy Guidelines for the Western Cape attached as Addendum 1 to this EMP		Contractor	Construction phase
Performance indicator	Protection of existing infrastructure and minimising use of existing services.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase		

OBJECTIVE C13: ROADS AND TRAFFIC

Project Component/s	Access and internal roads		
Potential Impact	Increased traffic/congestion. Construction vehicles pose a potential risk to other road uses and the natural environment if they do not use designated routes.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Designation of specific routes for construction vehicles to reduce impact on the environment and other road users.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
Only existing access routes to the property will be used during construction work, so as to control the movement of construction vehicles. Traffic safety measures shall be considered in determining entry or exit points to public roads.		Contractor	Construction phase
The contractor shall ensure that access to construction sites and associated infrastructure and equipment is designated off-limits to the public at all times during construction.		Contractor	Construction phase

Traffic safety measures shall be considered in determining entry or exit points to public roads.	Contractor	Construction phase
Adhere to speed limit and road rules.	Contractor	Construction phase
Work during normal working hours and only use demarcated access and internal roads	Contractor	Construction phase
Only allow drivers with valid driver's licenses to drive and/or operate construction vehicles	Contractor	Construction phase
Performance indicator	Necessary no entry signs and speed limit signs etc. posted at all entrances and only one designated access route to the development site is used.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C14: DUST, ODOUR, NOISE AND VISUAL IMPACT CONTROL

Project Component/s	Constructions site Access roads Construction camp
Potential Impact	Excessive dust and noise production and visual impacts on surrounding land users
Activities/Risk Sources	Activities associated with site construction
Mitigation: Target/Objective	Minisation of dust and noise production and visual impacts on surrounding land users

Mitigation: Action/Control	**Responsibility**	**Timeframe**
The contractor is to take appropriate measures to minimise the generation of dust as a result of construction works, to the satisfaction of the affected surrounding land users.	Contractor	Construction phase
Dust, odour and noise must be controlled appropriately and must not cause any nuisance conditions during hours of operation of the facilities and/or infrastructure.	Contractor	Construction phase
Vegetation must be stripped from demarcated construction sites only shortly before commencing with the construction process.	Contractor	Construction phase
During high velocity wind conditions, the contractor or his representative to evaluate the situation and make recommendations as to whether dust suppression measures are adequate, or whether to suspend work until wind speeds drop to an acceptable level.	Contractor	Construction phase
The use of potable water for dust suppression is discouraged and alternative sources of water should be considered and discussed with municipality if required.	Contractor	Construction phase
Construction noise levels must not pose a nuisance to the surrounding communities and all construction working hours must be limited to normal working hours unless arranged with municipality.	Contractor	Construction phase
All machinery and construction vehicles must be serviced regularly and be in a good working condition to prevent excessive noise generation.	Contractor	Construction phase
Only work in approved development areas to ensure that visual footprint is kept to a minimum and ensures that construction camp and area are neat and kept clear	Contractor	Construction phase

of windblown construction waste.		
Construction material will be stored at the contractor's camp, as well as on the construction site within the demarcated working areas at each construction point. Special permission may be obtained from the ECO to store material on suitable substitute or ancillary locations should the need arise, and as communicated by the project engineer	Contractor	Construction phase
Construction camp must be neatly fenced and construction site must be neat and tidy.	Contractor	Construction phase
Stockpile construction materials in one specific area.	Contractor	Construction phase
Proposed construction activities must be limited to development footprint site.	Contractor	Construction phase
Plant additional vegetation where needed after construction during site rehabilitation if required.	Contractor	Construction phase Rehabilitation phase

Performance indicator	No excessive dust or noises are produced at the construction sites and no visual impact outside of approved development areas is observed.
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase

OBJECTIVE C15: TOPSOIL AND MATERIAL REMOVAL AND STOCKPILING

Project Component/s	Construction site
Potential Impact	Loss of topsoil and refill materials
Activities/Risk Sources	Activities associated with site construction - excavation
Mitigation: Target/Objective	Conserve topsoil and excavated materials to be used for rehabilitation after construction completion

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Depending on type of topsoil available and rehabilitation required after construction completion the ECO will determine if it is required to, prior to construction or earthworks commencing, remove and conserve a minimum of 100 mm topsoil from demarcated construction sites and keep it separately stockpiled (within the demarcated working area or on designated areas).	Contractor ECO	Construction phase
Topsoil stockpiles must be convex and should not exceed 1.8 metre in height, and if required be covered by anchovy net as necessary to prevent wind erosion.	Contractor	Construction phase
Topsoil must not be compacted in any way, especially by vehicles riding over it.	Contractor	Construction phase
Surplus sub-soil that becomes available during construction work and building operations must be used as fill material on site.	Contractor	Construction phase
Plant material stockpiled must be chopped in ± 300 mm pieces and scattered over the disturbed areas to be rehabilitated at construction completion	Contractor	Construction phase

Performance indicator	Topsoil separately stored and safeguarded from erosion at designated areas and re-used on sites to be rehabilitated at construction completion.
Monitoring	This will be monitored by the ECO during site visits and recorded,

	reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase

OBJECTIVE C16: APPROPRIATE USE OF CONSTRUCTION MACHINERY

Project Component/s	Construction site Access roads Construction camp		
Potential Impact	Environmental disturbance due to incorrect use of machinery		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Use the correct machinery for the proposed tasks and ensure that machinery is properly operated		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
The contractor must at all times carefully consider what machinery is appropriate to the task to minimise the extent of environmental damage.		Contractor	Construction phase
No machinery is to operate outside of any demarcated working area.		Contractor	Construction phase
Operators of machinery must be suitably qualified.		Contractor	Construction phase
All machinery and heavy vehicles to be parked at night at the defined contractor's camp.		Contractor	Construction phase
Performance indicator	Correct and successful use of construction machinery on site by qualified personnel.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase		

OBJECTIVE C17: ANTI-EROSION MEASURES

Project Component/s	Construction site Access roads Construction camp		
Potential Impact	Wind/water erosion as a result of construction activities.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Reduce the impact of erosion by implementing anti-erosion measures.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
The contractor shall take all appropriate and active measures to prevent and if prevention is not possible to mitigate erosion, especially wind and water erosion, resulting from activities on site to the satisfaction of the ECO.		Contractor	Construction phase
During construction, the contractor shall protect areas susceptible to wind and water erosion, by installing all the necessary temporary and permanent works if required and indicated by the ECO. Measures can include brush packing, anchovy net stabilisation, etc.		Contractor ECO	Construction phase

No development to be allowed within 32m of the edge of the watercourse or its 1:100 year flood line area (whichever distance is the greatest) as located south of the site	Contractor	Construction phase
Demarcate no-go areas before any land clearing occurs under the supervision of an ECO. Demarcation must be clearly visible and effective and no-go area must remain demarcated throughout construction phase.	Contractor	Construction phase
Access to roads and other areas must be controlled to avoid disturbance of areas outside the development footprint. Personnel should be restricted to the construction camp site and immediate construction areas only.	Contractor	Construction phase
Undertake dust suppression as needed, without using potable water resources.	Contractor	Construction phase
Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur, but the storm water measures implemented must not impede storm water flow to such an extent that it is completely stopped. Current hydrological processes outside of the proposed development footprint area must continue to function as is.	Contractor	Construction phase
Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion	Contractor	Construction phase Rehabilitation phase
Performance indicator	All possible erosion impacts are controlled and rehabilitated.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C18: LIGHTS

Project Component/s	Construction site Access roads Construction camp		
Potential Impact	Light pollution at night		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	No significant light pollution must be caused during the construction activities		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
The Contractor must ensure that any lighting installed on the site for his activities or security purposes does not interfere with road traffic or cause a direct disturbance to nearby residents, the surrounding community or other users of the area.		Contractor	Construction phase
Performance indicator	Non-intrusive lighting to be installed at construction areas.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted)		

	• to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase

OBJECTIVE C19: EATING, WASHING, REST AND ABLUTION FACILITIES

Project Component/s	Construction site Construction camp		
Potential Impact	Environmental pollution		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	Prevent potential environmental pollution and disturbance outside designated areas.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
The contractor must designate restricted places for personnel to eat, wash and rest, within the specified working areas.		Contractor	Construction phase
The contractor must provide adequate weather proof refuse bins at the designated areas that are emptied on a weekly basis and not overflowing at any time.		Contractor	Construction phase
The feeding of, or leaving food for, animals is strictly prohibited		Contractor	Construction phase
The contractor is responsible for the provision of sufficient and suitably placed chemical toilets.		Contractor	Construction phase
Toilets must be of a neat construction and must be provided with doors and locks and must be secure to prevent wind damage.		Contractor	Construction phase
The contractor must ensure that toilets are serviced and emptied by the service provider when full/required.		Contractor	Construction phase
Waste must be disposed of at a registered/licenced waste disposal site.		Contractor	Construction phase
Performance indicator	Weather proof waste bins provided at designated eating, washing, rest and construction areas. Secure ablution facilities. Waste bins and ablution facilities not overfull and emptied on a regular basis.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase		

OBJECTIVE C20: INTEGRATED WASTE AND HAZARDOUS MATERIALS MANAGEMENT PLAN

Project Component/s	Access roads Construction camp Storage areas Construction site Adjacent land and environmental systems
Potential Impact	Incorrect storage, handling, transporting and disposing of hazardous substances resulting in the contamination of soil, storm and ground water resources. Incorrect storage, handling, transporting and disposing of general solid waste resulting in litter, storm water pollution, and creating a nuisance to adjacent landowners/residents. Incorrect storage, handling, transporting and disposing of effluent/liquid

	waste resulting in the contamination of the storm water system, adjacent property, or hydrological systems. Incorrect storage, handling, transporting and disposing of garden waste, alien vegetation or natural vegetation during the clearing phase of the development site. Poor waste management practices, resulting in waste not being reduced, re-used or recycled.
Activities/Risk Sources	Activities associated with site construction
Mitigation: Target/Objective	Protect and mitigate impacts on the environment and hydrological features Ensure that the storage and handling of chemicals and hydrocarbons on-site does not cause pollution to the environment or harm to persons Ensure that the storage and maintenance of machinery on-site does not cause pollution of the environment or harm to persons Comply with waste management guidelines Minimise production of waste Ensure appropriate waste storage and disposal

Mitigation: Action/Control	**Responsibility**	**Timeframe**
Specific areas must be designated on-site for the temporary management of various waste streams, i.e. general refuse, construction waste (wood and metal scrap) and contaminated waste as required. Location of such areas must seek to minimise the potential for impact on the surrounding environment, including prevention of contaminated runoff, seepage and vermin control.	Contractor	Construction phase
Spillage of oils and fuels must be minimized with the use of drip trays in the garage/workshop areas.	Contractor	Construction phase
An integrated waste management approach that is based on waste minimisation must be used and must incorporate reduction, recycling, re-use and disposal where appropriate. Where practically possible, construction and general wastes on-site must be reused or recycled. Bins and skips must be available on-site for collection, separation, and storage of waste streams (such as wood, metals, general refuse etc.).	Contractor	Construction phase
Please note that section 28 (1) of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended (NEMA) states: “Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonable be avoided or stopped, to minimize and rectify such pollution or degradation of the environment”. Failure to adhere to section 28(1) of NEMA is an offence and thus particular care of the environment must be taken.	Contractor	Construction phase
Disposal of waste must be in accordance with relevant legislative requirements, including the use of licensed contractors and disposal at appropriately licensed waste disposal sites	Contractor	Construction phase
The National Information Systems Regulation must be adhered to in terms of registering and reporting of hazardous waste generated on site via the Integrated Pollutant Waste Information System (IPWIS).	Contractor	Construction phase

All stored fuels to be maintained within a sealed bund and on a sealed surface. The bund must be at least 110% of the volume of the total containers adhering to the requirements of SABS 089:1999 Part 1	Contractor	Construction phase
Fuelling areas situated around fuel tanks must be provided with an impervious layer or drip trays must be used during refuelling;	Contractor	Construction phase
Fuel storage areas must be inspected regularly to ensure bund stability, integrity, and function	Contractor	Construction phase
Oily water from bunds at the substations must be removed from site by licensed contractors	Contractor	Construction phase
The storage of any flammable and combustible liquids such as oils will be in designated areas which are appropriately bunded, and stored in compliance with MSDS files	Contractor	Construction phase
Any storage and disposal permits/approvals which may be required for hazardous substances must be obtained, and the conditions attached to such permits and approvals will be compiled with and copies kept on site in the environmental file	Contractor	Construction phase
Transport, storage and disposal of all hazardous substances must be in accordance with the relevant legislation and regulations	Contractor	Construction phase
Washing of construction vehicles and equipment will only be allowed at the construction camp in bunded areas.	Contractor	Construction phase
Spill kits must be made available on-site for the clean-up of spills and leaks of contaminants. Corrective action must be undertaken immediately if a complaint is received, or potential/actual leak or spill of polluting substance identified. This includes stopping the contaminant from further escaping, cleaning up the affected environment as much as practically possible and implementing preventive measures.	Contractor	Construction phase
Implement an effective monitoring system to detect any leakage or spillage of all hazardous substances during their transportation, handling, use and storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems. Leakage of fuels must be avoided at all times and if spillage occurs, it must be remediated immediately.	Contractor	Construction phase
In the event of a major spill or leak of contaminants, the relevant administering authority must be immediately notified as per the notification of emergencies/incidents Spilled cement, fly ash and concrete must be cleaned up as soon as possible and disposed of at a suitably licensed waste disposal site. Any contaminated/polluted soil removed from the site must be disposed of at a licensed hazardous waste disposal facility.	Contractor	Construction phase
Hydrocarbon waste must be contained and stored in sealed containers within an appropriately bunded area. Waste and surplus dangerous goods must be kept to a minimum and must be transported by approved waste transporters to sites designated for their disposal and copies of the safe disposal slips must be kept in the environment file on site.	Contractor	Construction phase
Documentation (waste manifest) must be maintained	Contractor	Construction

detailing the quantity, nature, and fate of any regulated waste. Waste disposal records must be available for review at any time.		phase
An incident/complaints register must be established and maintained on-site.	Contractor	Construction phase
The sediment control and water quality structures used on-site must be monitored and maintained in a fully operational state at all times	Contractor	Construction phase
Upon the completion of construction, the area must be cleared of potentially polluting materials	Contractor	Construction phase
Dispose of all solid waste collected at an appropriately registered waste disposal site. Waste disposal shall be in accordance with all relevant legislation and under no circumstances may waste be burnt on site	Contractor	Construction phase
Where a registered waste site is not available close to the construction site, provide a method statement with regard to waste management.	Contractor	Construction phase
The storage of waste must comply with the National Environmental Management: Waste Act, (Act No. 59 of 2008) National Norms and Standards for Storage of Waste, 2013	Contractor	Construction phase
Waste may not be stored for a period exceeding 90 days during construction and operations of the proposed development without adherence to the National Norms and Standards for the Storage of Waste in terms of Government Notice (GN) No.926 of 29 November 2013, if the volumes stored exceed 80m3 of hazardous waste or 100m3 of general waste. If these thresholds are triggered, the Facility must also be registered on the Department's Integrated Pollutant and Waste Information System (http://ipwis.pgwc.gov.za/ipwis3/public) and the information must be updated regularly thereafter.	Contractor	Construction phase
Vegetation removed during the construction phase must be chipped for composting or be disposed of appropriately and may not be disposed of on the adjacent land.	Contractor	Construction phase
All waste oils, fuels and lubricants are considered hazardous waste to be stored separately in bunded areas and disposed of at a licensed hazardous waste handling facility and for which safe disposal certificates must be kept.	Contractor	Construction phase
It is the responsibility of each landowner, lease holder or developer to ensure that they are aware of and adhere to the requirements of the NEM:WA as it pertains to their operations.	Contractor/landowner/ lease owner/developer	Construction phase
The disposal of waste should be considered as a last resort after having considered waste minimization, such as avoidance, reuse and recycling of waste.	Contractor	Construction phase
Performance indicator	Limited chemical spills outside of designated storage areas No water or soil contamination by spills No complaints received regarding waste on site or indiscriminate dumping Provision of all appropriate waste manifests for all waste streams. No construction waste outside of designated waste storage areas. No overflowing waste storage areas	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if	

	construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase

OBJECTIVE C21: FIRES

Project Component/s	Construction site Construction camp		
Potential Impact	Uncontrolled fire on/off site, resulting in damage to the environment, property, injuries/death to personnel on site, or injuries/death to the public.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate the safety of people, property, and the environment on and off site.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
No open fires will be allowed on site and adequate firefighting equipment should be available on site in good working order at all times as prescribed by the fire management protocols.		Contractor	Construction phase
Performance indicator	No fire occurred due to construction activities and no fires allowed. Management actions are in place should a fire occur.		
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase		

OBJECTIVE C22: MEASURES TO PROTECT SURFACE AND GROUNDWATER HYDROLOGICAL FEATURES SUCH AS WATERCOURSES/ WETLANDS

Project Component/s	Construction site Construction camp Adjacent natural environments/features		
Potential Impact	Destruction of natural hydrological systems and the pollution of ground water resources.		
Activities/Risk Sources	Activities associated with site construction		
Mitigation: Target/Objective	To protect and mitigate impacts on the environment and hydrological features.		
Mitigation: Action/Control		**Responsibility**	**Timeframe**
All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to.		Contractor	Construction phase
No pollution of surface water or ground water resources may occur due to any activity on the property.		Contractor	Construction phase
Runoff must not be polluted and allowed to pool in construction areas, as this could cause contamination to the ground water resources.		Contractor	Construction phase
No activities, including swimming, washing, recreation, ablution, vehicle washing, etc. will be permitted in any of the watercourses. Water is to be protected and conserved at all times.		Contractor	Construction phase
The disturbed areas should receive ongoing monitoring		Contractor	Construction phase

and management of erosion and invasive plant growth	Municipality	
All potential hazardous materials i.e. fuels, cement etc. should be properly stored and contained within the construction camp.	Contractor	Construction phase
Disposal of waste from the site should also be properly managed.	Contractor	Construction phase
Construction workers should be given ablution facilities at the construction site and regularly serviced.	Contractor	Construction phase
All construction activities and personnel on site to stay within demarcated construction areas	Contractor	Construction phase
Proper waste bins to be provided to construction staff and all waste to be regularly removed to municipal landfill site	Contractor	Construction phase
Any oil or diesel spills etc. must be reported to the site manager and rehabilitation measures must be taken immediately and contaminated soil disposed of at a licensed landfill site	Contractor	Construction phase
Construction vehicles must be checked for leakages on a daily basis and repaired before allowed to work within watercourses if a leakage is detected	Contractor	Construction phase
Control access to roads and construction areas to avoid disturbance of areas outside the development footprint	Contractor	Construction phase
Undertake storm water management measures as required	Contractor Municipality	Construction phase
Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.	Contractor Municipality	Construction phase
Monitor construction areas frequently for sign of erosion and if signs of erosion are detected implement repair and preventative measures immediately	Contractor	Construction phase
All infrastructure areas should be kept free of debris, intrusive growth of invasive alien plants and sediment build-up.	Contractor Municipality	Construction phase
All concrete mixing to be contained within a suitably bunded area preventing any runoff from the concrete mixing area.	Contractor	Construction phase
Ground water contamination must be prevented. Wastewater from the construction and the associated operational activities must be on par with the quality standards of the relevant authority.	Contractor	Construction phase
Any activities involving cement must be tightly controlled to prevent its passage into the river – uncured cement will increase pH and thus potentially affect ammonia toxicity.	Contractor	Construction phase
All refuelling areas must be adequately bunded.	Contractor	Construction phase
Construction work (i.e. site clearance and construction) must be carried out and completed in the low flow and low rainfall season (mid to late summer) as far as possible to minimise the impact on the flow in the drainage line.	Contractor	Construction phase
Should the construction works take place during the rainfall period, any contaminated runoff from the construction site or activities should be prevented from entering the environment.	Contractor	Construction phase
Appropriate and effective storm water management measures must be put in place to ensure that erosion and environmental degradations outside of the proposed development footprint area does not occur. Current hydrological processes outside of the proposed development footprint area must continue to function as	Contractor	Construction phase

is.		
Performance indicator	Impacts on hydrological features minimized and mitigated.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C23: CONCRETE/CEMENT MIXING

Project Component/s	Concrete/cement mixing	
Potential Impact	Environmental pollution	
Activities/Risk Sources	Contaminated runoff from concrete mixing area	
Mitigation: Target/Objective	To protect and mitigate impacts on the environment and surrounding land users.	
Mitigation: Action/Control	**Responsibility**	**Timeframe**
Concrete mixing to be sited only on proposed development footprint area which must be demarcated.	Contractor	Construction phase
The concrete mixing areas should demonstrate good maintenance practices, including regular sweeping to prevent dust build-up.	Contractor	Construction phase
The concrete mixing area should be designed and constructed such that clean storm water is diverted away from contaminated areas	Contractor	Construction phase
The concrete mixing area should be bunded and lined with an impervious liner capable of containing all contaminants found within the water they are designed to collect.	Contractor	Construction phase
Where possible, waste concrete should be used for construction purposes at the project site	Contractor	Construction phase
Performance indicator	No concrete/cement mixing taking place within 32m of the edge of a watercourse or on un-bunded and permeable surfaces. No runoff escaping from bunded concrete mixing area.	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OBJECTIVE C24: REHABILITATION AND SITE CLEAN UP AFTER CONSTRUCTION

Project Component/s	All areas affected during construction	
Potential Impact	Un-stabilised disturbed areas, environmental pollution due to construction waste, unfinished construction sites	
Activities/Risk Sources	Activities associated with construction completion	
Mitigation: Target/Objective	To protect and mitigate the safety of people, property, and the environment on and off site.	
Mitigation: Action/Control	**Responsibility**	**Timeframe**
Stabilisation and rehabilitation of disturbed sites must take place immediately after construction operations	Contractor Municipality	Construction phase

have been completed.		
No construction equipment, vehicles or unauthorised personnel must be allowed onto areas that have been stabilised/rehabilitated.	Contractor	Construction phase
The contractors must ensure that all temporary structures, equipment, waste, materials and facilities used or created on site for, or during construction activities, are removed once the project has been completed.	Contractor	Construction phase
Only indigenous vegetation must be used to rehabilitate disturbed areas.	Contractor Municipality	Construction phase
The disturbed areas should receive ongoing monitoring and management of erosion and invasive plant growth.	Contractor Municipality	Construction and rehabilitation phase
Performance indicator	Constructions site are cleared of any temporary works forming part of the construction phase and disturbed areas have been rehabilitated to the satisfaction of the ECO and freshwater ecologist	
Monitoring	This will be monitored by the ECO during site visits and recorded, reported and proof included in the audit reports to be submitted: • to the site manager monthly during the construction phase (or if construction will be less than a month at least one ECO audit will be conducted) • to the DEA&DP, site manager and municipality as part of the annual compliance report during the construction phase • to the DEA&DP, site manager and municipality at the completion of the construction phase	

OPERATIONAL PHASE

This following section defines the management programme for each of the identified goals during the operational phase. The programme is presented in the form of a table, which includes the components described. This programme consists of the following components:

Goals
Over-arching environmental goals for the management phase.

Objectives
The objectives are in place in order to meet these goals. These take into account the findings from existing studies and monitoring programmes.

Management Actions
The actions needed to achieve the objectives, taking into consideration factors such as responsibility, methods, frequency, resources required and prioritisation.

Monitoring
*K*ey actions to verify that objectives are being achieved, taking into consideration responsibility, frequency, methods, and reporting.

Criteria/ Targets
The criteria or targets indicate the efficacy of the management programme. The targets should be readily measurable, understandable to the layperson, cost-effective to monitor, and meet legal requirements.

Remedial Actions
Specifies actions needed to be taken if the targets are not met; or if there is an unforeseen event.

Goals
The following 7 are specified goals:

Goal 1: Waste Management and Pollution Control

Goal 2: Water Quality and Storm Water Management
Goal 3: Erosion Control
Goal 4: Emergency Procedures
Goal 5: Infrastructure Maintenance Management
Goal 6: Vegetation Management, inclusive of Alien Vegetation Management and Landscaping

Goal 1: Waste Management and Pollution Control

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
Ensure allocation of sufficient resources for on-going Integrated Waste Management e.g. staff, equipment, budget.	Pollution and odours	1. The waste accumulated at the infrastructure and surrounds needs to be managed in terms of the National Environmental Management Waste Act, 2008 (Act 59 of 2008) by the municipality and the final disposal of the waste must take place at the appropriate licensed waste disposal site or recycling facility. 2. Solid waste may only be disposed of at an authorised solid waste facility in terms of abovementioned legislation. 3. Waste accumulation to be monitored and removed from the sites and surrounds on a monthly basis by the municipality. 4. Waste accumulated at stormwater outlets/discharge points must be removed by the municipality at least monthly and after heavy rains. 5. All vehicles transporting waste must be closed to avoid possible pollution of waste on transport routes. 6. Waste needs to be sorted and recycled as far as possible. The minimising of waste must be promoted and alternative methods of waste management must be investigated. 7. All waste types to be handled, stored, transported and disposed of according to relevant legislature.	Annual audits of operations vs EMP to identify those requirements that are not being met. **Responsibility:** Municipality to implement actions and appoint an ECO to conduct annual compliance audit.	No accumulated waste or pollution within watercourses and at development sites.	If pollution on site is detected immediate actions must be taken to contain the pollution. Within 24hours of detection the applicant must be informed of the incident, where after a site visit will be conducted and recommend further rehabilitation methods to be implemented. Depending on type and extent of pollution occurred specialists may be contacted to provide specific recommendations. An incident report to be compiled and sent to relevant government authorities.

		8. Squatting and rubble dumping adjacent to the new development is not allowed and must be controlled by the municipality and regular inspections conducted to ensure control. 9. An integrated waste management approach must be implemented, based on waste minimisation, reduction, recycling, re-use and disposal where possible. 10. Waste may not be stored for a period exceeding 90 days without adherence to the National Norms and Standards for the Storage of Waste in terms of Government Notice (GN) No.926 of 29 November 2013, if the volumes stored exceed 80m3 of hazardous waste or 100m3 of general waste. If these thresholds are triggered, the Facility must also be registered on the Department's Integrated Pollutant and Waste Information System (http://ipwis.pgwc.gov.za/ipwis3/public) and the information must be updated regularly thereafter. 11. During the event of environmental pollution the relevant authorities including the Directorate Pollution Management must be informed within 14 days as per Section 30(10) of NEMA, and the necessary step must be implemented as soon as possible to rehabilitate polluted areas and prevent re-occurrence of environmental pollution.			

		12. Dust, odour and noise must be controlled appropriately and must not cause any nuisance conditions during hours of operation of the facilities and/or infrastructure. 13. Ground water contamination must be prevented. Wastewater from the associated operational activities must be on par with the quality standards of the relevant authority. 14. Please note that section 28 (1) of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended (NEMA) states: "Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonable be avoided or stopped, to minimize and rectify such pollution or degradation of the environment". Failure to adhere to section 28(1) of NEMA is an offence and thus particular care of the environment must be taken.			

Goal 2: Water Quality and Storm Water Management Measures

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
Ensure allocation of sufficient resources for on-going Water Quality and Storm Water Management *e.g. staff, equipment, budget.*	Pollution, odours and erosion	1. All relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to. 2. No storm water runoff from any premises containing waste, or water containing waste emanating from infrastructure may be discharged into a water resource. Polluted storm water must be contained. 3. Storm water infrastructure should be monitored at least on a 3 monthly basis and any degradation or faults attended to immediately. 4. Ensure no pollution of any water resources, including surface water, storm water and groundwater takes place as a result of any activities on the site. 5. Ensure that no water other than storm water be discharged in the storm water system. 6. Storm water should be directed away from the roads and into the existing natural flow paths/drainage lines on site. 7. All waste within the storm water channels must be removed on a monthly base and after heavy rains. 8. If any erosion and/or degradation of the channel are noticed immediate action must be taken by the municipality to rectify the situation. (Corrective and preventative measures taken will depend upon type and extent of erosion and/or degradation	Annual audits of operations vs EMP to identify those requirements that are not being met. **Responsibility:** Municipality to implement actions and appoint an ECO to conduct annual compliance audit.	No accumulated waste or signs of erosion or pollution within watercourses at development sites.	If pollution on site is detected immediate actions must be taken to contain the pollution. Within 24hours of detection the applicant must be informed of the incident, where after a site visit will be conducted and recommend further rehabilitation methods to be implemented. Depending on type and extent of pollution occurred specialists may be contacted to provide specific recommendations. An incident report to be compiled and sent to relevant government authorities

		occurring). 9. Operate and maintain stormwater infrastructure as per EMP requirements. 10. Monitor for erosion of surrounding undeveloped areas and implement storm water management measures as recommended in the environmental management program. 11. Stormwater discharge flow must be managed and restricted in such a manner that it does not cause erosion. 12. Rehabilitate or stabilise eroded areas immediately to prevent increase/spread of erosion. 13. Only use existing access road to the site for operational purposes and avoid disturbance of "new" areas outside the existing access roads and infrastructure footprint. 14. Stormwater infrastructure must not cause erosion of the surrounding remaining undeveloped areas, but still allow current hydrological processes to continue as is. 15. The municipality must maintain all stormwater infrastructure on a regular basis to ensure that it is working effectively and is not blocked with waste.			

Goal 3: Erosion Control

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
Ensure allocation of sufficient resources) for on-going erosion control	Erosion, sink-holes and or blocking of storm water systems. Damage to Infrastructure.	1. On-going monthly monitoring and management of roads, roadways and areas susceptible to erosion. 2. Ensure suitable vegetation cover or surface on non-hardened surfaces. 3. Control runoff of storm water to prevent	Annual audits of operations vs EMP to identify those requirements that are not being met. **Responsibility:**	No signs of erosion within watercourses at development sites.	If erosion is detected immediate actions must be taken to contain the erosion. Depending on type and extent of erosion

management (e.g. staff, equipment, budget)		soil erosion. 4. Avoid the formation of sink-holes on sensitive soils. 5. Erosion control and maintenance will be an on-going process, especially erosion developing on or as a result of roads. The municipality must implement erosion control measures to ensure that no erosion occurs on site. The area must also be regularly monitored and erosion maintenance measures implemented to prevent erosion..	Municipality to implement actions and appoint an ECO to conduct annual compliance audit.		occurred specialists may be contacted to provide specific recommendations.

Goal 4: Emergency Procedures

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
Ensure allocation of sufficient resources for on-going safety, security and emergency procedures. e.g. staff, equipment, budget.	Pollution, floods, fire and health risks.	1. Emergency plans in case of flooding, fires, pollution to be compiled and implemented by the municipality. Local community members to be informed and made aware of emergency protocols to be followed. 2. Sufficient Fire Fighting equipment to be available at nearest fire station. 3. Yearly pre-season testing and servicing of firefighting equipment.	Annual audits of operations vs EMP to identify those requirements that are not being met. **Responsibility:** Municipality to implement actions and appoint an ECO to conduct annual compliance audit.	Necessary emergency plans in place and available to the public	Emergency response procedures to be followed as required. An incident report to be compiled and sent to relevant government authorities

Goal 5: Infrastructure Maintenance Management

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
Ensure allocation of sufficient resources e.g.	Degradation of built	1. No pollution of surface water or ground water resources may occur	Annual audits of operations vs EMP to	1. Adequate annual Budgets	To be determined

staff, equipment, budgets, for on-going infrastructure maintenance management	infrastructure leading to additional impacts such as traffic congestion, environmental degradation etc.	due to any activity. 2. The infrastructure must be monitored and kept free of silt/sediment, waste or debris built-up and intrusive growth of invasive alien plants at least annually before the main rainfall season and all excess silt built-up, waste or debris must be removed immediately. 3. Existing access roads to the sites must be used to gain access. No new access roads may be cleared. 4. All of the sites must be constantly monitored for any sign of erosion and if erosion is detected immediate action must be taken to rehabilitate the impacted area and prevent any further erosion. 5. Undertake storm water management measures as required. 6. No water may be abstracted from any water resource without the appropriate prior authorisation from the delegated authority and all relevant sections and regulations of the National Water Act, 1998 (Act 36 of 1998) regarding water use must be adhered to. 7. Infrastructure should be cleaned regularly, at least once a month and after heavy rains and runoff to ensure that all waste is removed and not washed off site. 8. Should any erosion, illegal waste dumping, vegetation clearance, informal settlement establishment etc. occur within the buffer and no-go areas the municipality must ensure that these impacts are rectified as soon as possible and take active steps to	identify those requirements that are not being met. **Responsibility:** Municipality to implement actions and appoint an ECO to conduct annual compliance audit.	2. On-going employment of ECO and maintenance staff	

		rehabilitate the impacted areas and prevent these impacts from re-occurring. 9. All domestic waste windblown or illegally dumped within the no-go areas site must be removed by the municipality at least on a monthly basis.			

Goal 6: Vegetation Management, inclusive of Alien Vegetation and Landscaping

Objectives	Risks	Actions	Monitoring	Criteria/Targets	Remedial Actions
Ensure allocations of sufficient resources e.g. staff, equipment, budget,) for On-going alien and vegetation management	Degradation and replacement of indigenous ecosystem characteristics i.e. indigenous flora and fauna habitat.	1. Any alien and invasive vegetation that occur on property owned by the municipality should be controlled or removed as prescribed by the Alien and Invasive Species Regulations of 2014. 2. All disturbed areas should be cleared and kept clear of weeds and alien invasive plants. 3. Implement an on-going alien vegetation management plan, clearing the site and surrounds of all alien invasive plants. 4. Rehabilitate disturbed areas with locally indigenous vegetation species within one year of disturbance and monitor successful rehabilitation of disturbed sites. 5. A site specific storm water management plan must be compiled for the operational phase of the proposed development and implemented in such a manner as to prevent any additional storm water run-off	Annual audits of operations vs EMP to identify those requirements that are not being met. **Responsibility:** Municipality to implement actions and appoint an ECO to conduct annual compliance audit.	On-going removal of weeds and alien invasive plants at disturbed sites.	No remedial actions required, only on-going alien vegetation clearing and monitoring as indicated.

		entering the adjacent indigenous vegetation areas and potentially causing erosion leading to further habitat fragmentation. 6. The municipality must manage and ensure that no illegal waste dumping, vegetation clearance, informal settlement establishment etc. occurs within developed or remaining undeveloped areas. 7. Should any erosion, illegal waste dumping, vegetation clearance, informal settlement establishment etc. occur within the developed and undeveloped areas the municipality must ensure that these impacts are rectified as soon as possible and take active steps to rehabilitate the impacted areas and prevent these impacts from re-occurring.			

CHAPTER 8

The facility must ensure that “Any emergency incident, originating at the facility, which falls within the definition of section 30(1) a of the National Environmental Management Act (NEMA), Act of 1998, must be dealt with by the facility in accordance with Section 30 of NEMA”. In the event of any incident the facility must ensure containment by the responsible person and notify the Sub-Directorate: pollution information and chemicals management section at (021) 483 2760 / 2968.

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

- Incident reporting; and
- Compliance reporting

In terms of NEMA Section 30 the following shall apply during the occurrence of an “incident” due to the proposed activities:

NEMA SECTION 30 - CONTROL OF INCIDENTS

(1) In this section

(a)”incident” means an unexpected, sudden and uncontrolled release of a hazardous substance, including from a major emission, fire or explosion, that causes, has caused or may cause significant harm to the environment, human life or property;

(b) "responsible person" includes any person who
(i) is responsible for the incident;
(ii) owns any hazardous substance involved in the incident; or
(iii) was in control of any hazardous substance involved in the incident at the time of the incident;

(c) "relevant authority" means
(i) a municipality with jurisdiction over the area in which an incident occurs;
(ii) a provincial head of department or any other provincial official designated for that purpose by the MEC in a province in which an incident occurs;
(iii) the Director-General;
(iv) any other Director-General of a national department

(2) Where this section authorises a relevant authority to take any steps, such steps may only be taken by

(a) the person referred to in subsection (1)(c)(iv) if no steps have been taken by any of the other persons listed in subsection (1)(c);

(b) the person referred to in subsection (1)(c)(iii) if no steps have been taken by any of the persons listed in subsection (1)(c)(i) and (c)(ii);

(c) the person referred to in subsection (1)(c)(ii) if no steps have been taken by the person listed insubsection (1)(c)(i):

Provided that any relevant authority may nevertheless take such steps if it is necessary to do so in the circumstances and no other person referred to in subsection (1)(c) has yet taken such steps.

(3) The responsible person or, where the incident occurred in the course of that person's employment, his or her employer must forthwith after knowledge of the incident, report through the most effective means reasonably available

(a)the nature of the incident;

(b) any risks posed by the incident to public health, safety and property;

(c) the toxicity of substances or by-products released by the incident; and

(d) any steps that should be taken in order to avoid or minimise the effects of the incident on public health and the environment to

(i) the Director-General;
(ii) the South African Police Services and the relevant fire prevention service;
(iii) the relevant provincial head of department or municipality; and
(iv) all persons whose health may be affected by the incident.

(4) The responsible person or, where the incident occurred in the course of that person's employment, his or her employer, must, as soon as reasonably practicable after knowledge of the incident

(a) take all reasonable measures to contain and minimise the effects of the incident, including its effects on the environment and any risks posed by the incident to the health, safety and property of persons;

(b) undertake clean-up procedures;

(c) remedy the effects of the incident;

(d) assess the immediate and long-term effects of the incident on the environment and public health;

(5) The responsible person or, where the incident occurred in the course of that person's employment, his or her employer, must, within 14 days of the incident, report to the Director-General, provincial head of department and municipality such information as is available to enable an initial evaluation of the incident, including

(a) the nature of the incident;

(b) the substances involved and an estimation of the quantity released and their possible acute effect on persons and the environment and data needed to assess these effects;

(c) initial measures taken to minimise impacts;

(d) causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and

(e) measures taken and to be taken to avoid a recurrence of such incident.

(6) A relevant authority may direct the responsible person to undertake specific measures within a specific time to fulfil his or her obligations under subsections (4) and (5): Provided that the relevant authority must, when considering any such measure or time period, have regard to the following:

(a) the principles set out in section 2;

(b) the severity of any impact on the environment as a result of the incident and the costs of the measures being considered;

(c) any measures already taken or proposed by the person on whom measures are to be imposed, if applicable;

(d) the desirability of the state fulfilling its role as custodian holding the environment in public trust for the people;

(e) any other relevant factors.

(7) A verbal directive must be confirmed in writing at the earliest opportunity, which must be within seven days.

(8) Should

(a) the responsible person fail to comply, or inadequately comply with a directive under subsection (6);

(b) there be uncertainty as to who the responsible person is; or

(c) there be an immediate risk of serious danger to the public or potentially serious detriment to the environment,

a relevant authority may take the measures it considers necessary to
(i) contain and minimise the effects of the incident;
(ii) undertake clean-up procedures; and
(iii) remedy the effects of the incident.

(9) A relevant authority may claim reimbursement of all reasonable costs incurred by it in terms of subsection (8) from every responsible person jointly and severally.

(10) A relevant authority which has taken steps under subsections (6) or (8) must, as soon as reasonably practicable, prepare comprehensive reports on the incident, which reports must be made available through the most effective means reasonably available to

(a) the public;

(b) the Director-General;

(c) the South African Police Services and the relevant fire prevention service;

(d) the relevant provincial head of department or municipality; and

(e) all persons who may be affected by the incident

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

Document Type:	Emergency Incident Report		
	Title:	**(PROPERTY WHERE INCIDENT OCCURRED, DATE AND TYPE OF INCIDENT)**	
	Document Status:	Pilot reporting format	
Reference:	[A reference that may be used in future correspondence]	**Initial Submission Date:**	[Date of initial submission of the report to the Department: Environmental Affairs and Tourism]
Revision No.:	example	**Compiled by:**	[Full name and contact details of the person submitting the report]

This form provides a template for the emergency incident report required in terms of section 30(5) of the National Environmental Management Act (Act No. 107 of 1998) (hereinafter "NEMA") in which the responsible person or,

where the incident occurred in the course of that person´s employment, his or her employer, must, within 14 days of the incident, report to the Director General, provincial head of department and municipality such information as is available to enable an initial evaluation of the incident, including: (a) the nature of the incident; (b) the substances involved and an estimation of the quantity released and their possible acute effect on persons and the environment and data needed to assess these effects; (c) initial measures taken to minimise impacts; (d) causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and (e) measures taken and to be taken to avoid a recurrence of such incident.

In terms of section 30(1)(a) of NEMA, an "incident" means an unexpected sudden occurrence, including a major emission, fire or explosion leading to serious danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed.

In line with section 24 of the Constitution of the Republic of South Africa (Act No. 108 of 1996), "serious" is taken to be a measure of the impact of an incident where such an incident has had, could have had, is having, or will have a negative impact on human health or well-being.

RESPONSIBLE PERSON			
In terms of section 30(1)(b) of NEMA, the "responsible person" includes any person who: (i) is responsible for the incident; (ii) owns any hazardous substance involved in the incident; or (iii) was in control of any hazardous substance involved in the incident at the time of the incident			
Name:	[Full name of person, company, etc.]	**Designation:**	[designation of responsible person (n/a for companies, etc.)]
Postal Address:	[Full postal address including postal code]	**Physical Address:**	[Full physical address]
Telephone (B/H)	[Business hours contact telephone number and area code]	**Telephone (A/H)**	[After hours contact telephone number and area code]
Nature of Business:	[Brief summary of the nature of the business]		

EMERGENCY INCIDENT SUMMARY INFORMATION							
Mark the appropriate boxes							
Fire:		**Spill:**		**Explosion:**		**Gaseous Emission:**	
Injuries		**Reportable injuries:**		**Hospitalisation:**		**Fatalities:**	
Open water impacts:		**Ground water impacts:**		**Atmospheric impacts:**		**Soil impacts:**	
Own emergency response involved		**Fire prevention services involved**		**Government hazardous materials emergency response involved**		**More than 1 governmental emergency response service involved**	
Emission of non-toxic substances at low concentrations		**Emission of non-toxic substances at high concentrations**		**Emission of toxic substances at low concentrations**		**Emission of toxic substances at high concentrations**	
No evacuation required		**Immediate area evacuated**		**Immediate surrounds evacuated**		**Evacuation of the general public**	

INITIAL EMERGENCY INCIDENT REPORT				
In terms of section 30(3) of NEMA, the responsible person or, where the incident occurred in the course of that person´s employment, his or her employer must forthwith after knowledge of the incident, report through the most effective means reasonably available: (a) the nature of the incident; (b) any risks posed by the incident to public health, safety and property; (c) the toxicity of substances or byproducts released by the incident; and (d) any steps that should be taken in order to avoid or minimise the effects of the incident on public health and the environment to: (i) the Director General; (ii) the South African Police Services and the relevant fire prevention service; (iii) the relevant provincial head of department or municipality; and (iv) all persons whose health may be affected by the incident.				
Description	**Date:**	**Time:**	**Medium:**	**Contact Details:**
Director General:	[submission date]	[submission time]	[Fax, phone, SMS, letter, etc.)	[who was the report made to?]
SAPS:				
Relevant fire prevention service:				
Relevant province or municipality				
Affected persons:			Provide details of who was contacted and how they were contacted as Annexure A to this report	

INCIDENT DETAILS			
In terms of NEMA section 30(5)(a) and (d), the responsible person must report on the nature of the incident as well as the causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure			
Incident start time:	[The exact time that the unexpected event started]	**Incident duration:**	[the duration of the unexpected event]
Duration of danger:	[The time taken from the start of the event to the time when the impacts of the event no longer posed a threat to anyone's health or well-being]	**Duration of exposure:**	[The duration of conditions that had a direct impact anyone's health or well-being]
Incident description	[Brief description of the incident detailing, but not limited to, a description of: (i) what happened; (ii) how it happened; (iii) where it happened; (iv) the timing and sequence of events; and (v) why it happened. A detailed discussion may be included as an annex.]		
	Plans, diagrams, maps or any other graphical material relating to the incident description must be attached as annexures B1, B2, etc.		
Wind speed and direction	[The wind speed and direction at the point of the incident at the time of the incident]	**Ambient air temperature**	[ambient air temperature at the time of the incident]
Weather conditions	[Sunny, light rain, mist, heavy rain, etc.]	**Other relevant meteorological conditions**	[Temperature inversion, floods, etc]

POLLUTANTS RELEASED DURING INCIDENT					
In terms of NEMA section 30(5)(b), the responsible person must report on the substances involved and an estimation of the quantity.					
List all the pollutants directly released during the incident (i.e. exclude those pollutants that resulted from mitigation measures, e.g. flaring, treatment, dilution etc.)					
Substance or mixture of substances	**Reference Number**	**Phase**	**Total Quantity emitted**	**Unit**	**Nature of emission**
[The name recognised by any national or internationally recognised chemical referencing system]	[Reference to any national or internationally recognised chemical referencing system]	[solid, semi-solid, liquid or gas]	[the total measured or estimated quantity released into the environment]	[the unit of measure in respect to the quantity]	[emitted from truck, underground pipe, stack, etc.]

SECONDARY POLLUTANTS RESULTING FROM INCIDENT					
In terms of NEMA section 30(5)(b), the responsible person must report on the substances involved and an estimation of the quantity released.					
List all the pollutants that resulted from mitigation measures, e.g. flaring, treatment, dilution etc.					
Substance or mixture of substances	**Reference Number**	**Phase**	**Total Quantity emitted**	**Unit**	**Nature of emission**
[The name recognised by any national or internationally recognised chemical referencing system]	[Reference to any national or internationally recognised chemical referencing system]	[solid, semi-solid, liquid or gas]	[the total measured or estimated quantity released into the environment]	[the unit of measure in respect to the quantity]	[emitted from truck, underground pipe, stack, etc.]

1. POLLUTANT CONCENTRATIONS					
In terms of NEMA section 30(5)(b), the responsible person must report on the substances involved and an estimation of the quantity released.					
List all the pollutants detailed in sections **Error! Reference source not found.** and **Error! Reference source no t found. Error! Reference source not found.**.					
1.1 Substance or mixture of substances	**1.2 Reference Number**	**1.3 Estimated pollutant concentration**			
		1.4 10m	**1.5 100m**	**1.6 500m**	**1.7 Concentration unit (e.g. ppm)**
[The name recognised by any national or internationally recognised chemical referencing system]	[Reference to any national or internationally recognised chemical referencing system]	[estimate the concentration of the pollutant in water, soil and/or air within a 10m radius of the epicentre of the incident]	[estimate the concentration of the pollutant in water, soil and/or air within a 100m radius of the epicentre of the incident]	[estimate the concentration of the pollutant in water, soil and/or air within a 500m radius of the epicentre of the incident]	[[Provide the unit of concentration used in columns 1.4, 1.5 and 1.6.]

INCIDENT IMPACT	
In terms of NEMA section 30(5)(b), the responsible person must report on possible acute effect on persons and the environment and data needed to assess these effects;	
Minor injuries	[Describe the number and types of any minor injuries that resulted from the incident or efforts to manage the incident or the impacts thereof]
Reportable injuries	[Describe the number and types of any injuries requiring statutory reporting that resulted from the incident or efforts to manage the incident or the impacts thereof]
Hospitalisation	[Describe the number and types of any injuries that required professional medical care that resulted from the incident or efforts to manage the incident or the impacts thereof]
Fatalities	[Describe the number and cause of any fatalities that resulted from the incident or efforts to manage the incident or the impacts thereof]
Biological impacts	[Describe any impacts on biological life, other than human life, e.g. fish kills, plant mortality, etc.]
Impact area	[Describe the area possibly affected by the incident or the impacts thereof including: (i) size of the area; (ii) socio-economic context; (iii) population density; (iv) sensitive environments (if any), etc.]
Data	Attach relevant impact reports, medical reports, death certificates, post mortem reports, environmental monitoring data, etc. as Annexes C1, C2,… to this report

EXISTING PREVENTION PROCEDURES AND/OR SYSTEMS	
Foresight	[Briefly describe whether the incident could have, or had, been foreseen, e.g. was it included in any environmental impact assessment, risk assessment, health and safety plan, etc.]
Procedures and/or systems	Attach any relevant safety, health and environmental plans (including any statutory planning requirements) that detail what actions should be taken in the event of the incident that is the subject of this report
Procedure and/or systems failures	[Describe any failures or shortfalls in procedures and/or systems that may have contributed to the incident]
Technical measures	[Describe any technical measures, equipment, 'fail-safe' devices, etc. that are in place to prevent the occurance of the incident]
Technical failure	[Describe any failures of technical measures, equipment, 'fail-safe' devices, etc. that are in place to prevent the occurance of the incident]

2. INITIAL INCIDENT MANAGEMENT	
In terms of NEMA section 30(5)(c), the responsible person must report on initial measures taken to minimise impacts.	
2.1 Evacuation	[Describe any evacuation activities including information on the number of people evacuated and whether these people were staff or otherwise]
2.2 Technical measures	[Describe all technical measures taken to address the incident]
2.3 Mitigation measures	[Describe all measures taken to minimise the impact]
2.4 Emergency Services	[Describe any governmental emergency services involvement]

3. CLEANUP AND/OR DECONTAMINATION	
In terms of NEMA section 30(5)(c), the responsible person must report on initial measures taken to minimise impacts.	
3.1 Cleanup and/or decontamination	[Provide a detailed description of all cleanup and/or decontamination activities and the environmental quality and impacts resulting from these activities as well as contact details for any contracted service providers in an annex.]

Permissions and Instructions

Provide details of any permissions and/or instructions received from any organ of state during initial incident management, cleanup and/or decontamination

3.2 Type	3.3 Statuate	3.4 Issued By	3.5 Details
[Describe the nature or type of permission or instruction]	[Provide a reference to the legal mandate for the permission or instruction]	[Provide contact details for the permitting or instructing authority]	[provide a summary of the activities carried out in terms of the permission or instruction]

MITIGATION MEASURES			
In terms of NEMA section 30(5)(e), the responsible person must report on measures taken and to be taken to avoid a recurrence of such incident.			
Measure	**Objective**	**Cost**	**Timing**
[Briefly describe each of the measures taken, and to be taken, to avoid a recurrence of such incident]	[Briefly describe the objective of the measure, i.e. the desired outcome of the measure]	[Estimate the cost of the measure in terms of capital costs and/or recurrent costs]	[Provide information on the timing for the full implementation of the measure]

4. AUTHORISATIONS			
Provide detail on all authorisations (including permits, licenses, certificates, etc.) in respect of the activity to which the incident relates.			
4.1 Type	**4.2 Statuate**	**4.3 Issued By**	**4.4 Issue & Expiry Date**
[Describe the nature or type of authorisation, e.g. Registration Certificate]	[Provide the reference for the authorisation, e.g. section X of the National Environmental Management Act (Act No. 107 of 1989)]	[Provide contact details for the issuing authority]	[provide the date of issue and expiry]

HISTORY			
Provide details on any and every similar incident involving the responsible person in the last 24 months. Similar incidents include those that: (i) involved similar circumstances; (ii) involved similar emissions; (iii) involved similar personal; and/or (iv) involved similar impacts.			
Incident title	**Report reference**	**Date of incident**	**Summary of event**
[Provide the title used in the relevant emergency incident report]	[Provide the reference in respect of the relevant emergency incident report]	[Date of incident]	[Provide a summary of the event]

Signed by, or as a mandated signatory for, the responsible person:		Date:	

CHAPTER 9

DECOMMISSIONING PHASE

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

As this is a cemetery, decommissioning is highly unlikely.

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

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

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

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

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

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

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

CHAPTER 10

REHABILITATION SPECIFICATIONS AND SITE CLEAN-UP

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

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

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

The impacted areas must be re-vegetated with indigenous vegetation species within 3 months after completion of construction activities. Rehabilitated areas must be irrigated if required.

If erosion occurred the ECO must be informed immediately who will then recommend erosion mitigation measures to be implemented.

Alien vegetation monitoring of the rehabilitated areas and surrounds must be conducted on an annual basis and if alien vegetation is detected the ECO must be informed immediately who will then recommend eradication methods.

CHAPTER 11

ENVIRONMENTAL AWARENESS INDUCTION COURSE MATERIAL

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

WHAT IS THE ENVIRONMENT?

- Soil
- Water
- Plants
- People
- Animals
- Air we breathe

WHY MUST WE LOOK AFTER THE ENVIRONMENT?

- It affects us all as well as future generations
- We have a right to a healthy environment
- A Policy and System will be signed

HOW DO WE LOOK AFTER THE ENVIRONMENT?

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

WORKING AREAS

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

RIVERS & STREAMS

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

ANIMALS

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

TREES AND FLOWERS

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

SMOKING AND FIRE

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

PETROL, OIL AND DIESEL

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

DUST

Try to avoid producing dust

NOISE

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

TOILETS

- Use the toilets provided
- Report full or leaking toilets

EATING

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

RUBBISH

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

TRUCKS AND DRIVING

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

EMERGENCY PHONE NUMBERS

Know all the emergency phone numbers:

- Ambulance:
- Fire:
- Police: 10111

FINES AND PENALTIES

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

PROBLEMS - WHAT TO DO!

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

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

CHAPTER 12

COMPLIANCE WITH THE ENVIRONMENTAL AUTHORISATION

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

CHAPTER 13

UPDATING/ADAPTING THE EMP

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

REFERENCES

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

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

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

Western Cape Government
Human Settlements
BETTER TOGETHER.

Eugene Visagie
Policy and Research Directorate
E-mail: Eugene.Visagie@westerncape.gov.za

REFERENCE: 15/P
ENQUIRIES: E. Visagie

31 January 2018

TO: All Municipal Managers in the Western Cape

CIRCULAR NO: C1 of 2018

Water Crisis Response Policy Guidelines for the Western Cape

1. Purpose

The purpose of this Circular is to provide information to municipalities and key stakeholders on the Policy Guidelines to respond to the water crisis in the Western Cape. The Western Cape Department of Human Settlements (hereafter referred to as the Department) is broadening the current norms and standards with the aim of addressing the water crisis by offering directions for the implementation of water demand and supply management measures in all Departmental and contracted projects.

Projects include all Departmentally-managed projects including those undertaken via a land availability agreement and any project for which any approval is required from the Department. This includes projects undertaken through grant funding made available by the Department to municipalities.

The Guidelines were approved by the Provincial Minister on the 21st of November 2017.

2. Policy Guideline Principles

It is proposed that the following guiding principles be incorporated in the water demand and supply management of all Departmental and contracted projects:

- to be water sensitive in the design and construction of human settlements;
- water to be managed and treated in a manner which reflects the principles of water sensitivity;
- promoting the efficient, sustainable and beneficial use of water resources;
- facilitating social and economic development;
- providing for growing demand for water use;
- reducing and preventing pollution and degradation of water resources;
- environmental integrity;
- ensure effective and appropriate information management, reporting and awareness-raising of sustainable water management;
- meeting international obligations; and
- managing floods and droughts.

3. Context and Background

South Africa is characterised by low and variable rainfall, and water security is one of the biggest challenges facing the country in the 21st century. The Western Cape is presently undergoing the harshest drought on record. The dams and reservoirs feeding the municipalities are at record lows.

Three years of below-average rainfall (2015, 2016 and 2017) has exacerbated the situation. Severe multi-year droughts are very rare in Cape Town and these droughts have become more difficult to predict and, according to one climatologist, the impact of climate change is probably the reason that climate cycles have become unpredictable. **This implies that the current water crisis must be viewed not as a temporary phenomenon that will resolve in a year or two, but rather as a long-term challenge**.

Water scarcity could get rapidly worse as our supply contracts and demand escalates due to growth, urbanisation, unsustainable use, water losses and a decrease in rainfall due to climate change. Since 1995 the City of Cape Town's population has grown 55%, from about 2.4 million to an expected 4.3 million in 2018. Over the same period dam storage has increased by only 15%.

The Department is in the business of building houses, and associated infrastructure, which has a direct impact on the natural environment. The construction and operation of buildings account for 50% of all CO_2 emissions (which contributes to climate change) released into the atmosphere and worldwide buildings account for 12% of water usage.

Given the current water crisis, the construction industry in the Western Cape has an obligation to reduce its consumption by switching to clean energy sources and committing to water resource efficiency and sustainable human settlements. The industry is also increasingly coming under pressure from National Government and international bodies to alter its mode of operation by adopting climate change mitigation measures that reduce emissions and adaptation measures that reduce climate risk to vulnerable communities.

In November 2017, municipalities were invited to submit comments on the Water Response Policy Guidelines. Comments received have been included in this Circular, where applicable.

4. Legislative Mandate

According to Section 27(1)(b) of the Bill of Rights in the Constitution, everyone has the right to have access to sufficient water.

Under normal conditions the responsibility for water provision is divided between the three spheres of government as follows:

- Major water infrastructure – National Government;
- Oversight, monitoring and support – Provincial Government; and
- Supply systems for clean water delivery to households – Local Government.

The role of the Provincial Government is not peripheral, but central to identify the crisis and to take the necessary steps to pre-empt it.

5. The Western Cape Government's Response to the Water Crisis

In light of the current water crisis, Premier Helen Zille implemented, in terms of Section 41(2) of the Disaster Management Act, provincial-wide directives dealing with restrictions on the use of potable water for domestic and industrial purposes.

6. Western Cape Department of Human Settlements' Water Demand and Supply Management Measures/Immediate Actions

Large volumes of water (but not necessarily potable water) are required to construct human settlement developments. Many developments do not have water efficiency measures in place after they have been built. In order to combat the impact of the drought and to build resilience, the following demand and supply measures are to be implemented on all Departmentally-managed and contracted projects:

It is required of all successful bidders to submit a project specific **Water Demand Management Plan for approval to the respective Regional Directors. In developing these Water Demand Management Plans the following interventions may serve as guidelines.**

Interventions have been categorised into two broad themes: **Technical Interventions** relating to norms and standards and contractor activities and **Behavioural and Administrative Interventions** which include consumer education activities, rain-water harvesting, contract management activities and other recommendations.

6.1 DURING THE DESIGN PHASE

Technical Interventions:

a. Apply urban design principles with increased focus on the reduction of potable water usage.
b. Insist on water saving toilets and cisterns; that is, cisterns with capacities not exceeding 6 litre per full flush.
c. Consider dual water supply plumbing to toilets for future non-potable supply.
d. Specify water saving diffusers for all taps and showers, i.e. aerator/washer regulator. Not to exceed 10 litre per minute for showers and 6 litre per minute for taps.
e. Consider "push flow" taps for internal plumbing at public buildings or site buildings.
f. Replace baths with showers.
g. Project managers and designers to engage with the municipality for the installation of pressure control devices for whole or parts of new developments and developments already under construction (this is especially relevant for areas where static pressure exceeds 3 bar).

h. Add gutters, downpipes and rainwater tanks for all new projects and projects currently under construction. Allow for a solid base, plastic stopcock and removable lid. Tank size to be not more than 1000l depending on practical considerations and product availability. This should include two facia boards and gutters on both sides of the house connected to the tank. However, due to the high cost and small amounts of water collected from subsidised housing roofs, the use of rainwater tanks needs to be considered carefully. In general, greater water savings, for a fraction of the cost, can be achieved with measures (d) to (f) above.
i. Review and update Departmental minimum standards, as required.

Behavioural and Administrative Interventions:

a. Conditions of contract to provide for fines (for example in the Environmental Management Plan) as well as enhanced role of the Environmental Control Officer and/or the Client's Occupational Health and Safety (OH&S) Agent.
b. All interventions listed in the following section '**During Construction**', excluding Behavioural and Administrative Interventions: (k) and (l), to be included in contract documentation.

6.2 DURING CONSTRUCTION

Technical Interventions:

a. Where not already in place and where practical and feasible, contractors need to develop with immediate effect alternative, non-potable sources of water; be it boreholes, well points, trucking of non-potable water to their site, etc.
b. Fit all hoses on site with a "squirt" or "squeeze" nozzle to minimise the use of water, where non-potable water is not available or implemented.
c. Use chemical toilets instead of flushing toilets at site camp.
d. Use ready-mixed concrete instead of mixing on site.
e. Block cutting/angle grinding to be accompanied by water poured from a container rather than a hosepipe.
f. Cover sand stockpiles with filter cloth or plastic or equivalent.

Behavioural and Administrative Interventions:

a. Instruct contractors to use water from sources other than municipal supply, such as recycled water, well points and boreholes. Departmental work inspectors to monitor and report on potable versus non-potable water use on site.
b. The use of potable water for road making, washing of plant and equipment and for on-site concrete, plasters and screeds is to be phased out with immediate effect. Potable water to be used only for making of reinforced concrete, testing of water pipes and drinking.
c. Contractors to capture rain water from the roofs of site office buildings.
d. Contractor to issue the workers with refillable water bottles for their use during daily operations on site, instead of from running taps.
e. All workers to wash their tools/equipment (after daily activities) at a dedicated bucket/facility on site – instead of under running water. Wash water to be reused.

f. Contractor to report weekly on volume of water used, audited monthly against municipal account. Meters to be checked overnight and weekends to identify leakages during 'no-use' times. (It goes without saying that any standpipe without a meter will be reported to the municipality for fines, over and above any remedies that the Department may implement in terms of the contract).
g. Fines to be included in contract document for water usage determined to be wasteful or excessive.
h. Contractor to conduct "tool box" talks advising workers on water saving measures to be adopted and regularly conduct such talks to reinforce the message.
i. Educational flyers/posters on site to enforce notion of water saving/awareness.
j. The role of the Employer's Environmental Control Officer or OH&S Agent is to be extended to include reporting on water use and any abuse of water on site.
k. Departmental staff (works inspectors and project managers) to check for leaking taps, water pipes and any other leaks on site.
l. Departmental project managers to engage with the municipalities for taking over the boreholes, well points, etc. sunk and developed by contractors as a municipal/community resource.

6.3 AFTER HANDOVER

Technical Interventions:

a. Departmental works inspectors to follow up before the end of the maintenance defects liability period on completed projects to check for leaking plumbing, specifically cisterns. Checklists to be revised.
b. Whilst contractors are still on-site, works inspectors to go through the handed over houses again before completion of the last house to make sure none of the internal plumbing is leaking in recently handed over houses.

Behavioural and Administrative Intervention:

a. Place special emphasis on water saving as part of the consumer education phase.

7. How to Apply for Funding

Project managers will request quotations from contractors and developers for the water demand and supply management measures (contained in Section 6). These quotations will form the basis of applications for funding to be considered by the Department.

Tender and contract documentation to list all aspects that will incur additional costs in a separate schedule so that value for money impact of each measure can be assessed against funding availability.

All requests for funding are to be submitted to the Regional Directors:

Region	Director	Email address
Metro & West Coast	Mr Niel Muller	Niel.Muller@westerncape.gov.za
Eden & Central Karoo	Mr Esais Pieterse	Esais.Pieterse@westerncape.gov.za
Cape Winelands	Mr Preshane Chandaka	Preshane.Chandaka@westerncape.gov.za
Overberg	Mr Vusimuzi Dlamini	Vusimuzi.Dlamini@westerncape.gov.za

8. Date of Inception

These Policy Guidelines will be effective as of the 1st of February 2018. It will not be applied to completed projects or where houses have been handed over to beneficiaries. It is only applicable to on-going and new projects.

HEAD OF DEPARTMENT: HUMAN SETTLEMENTS: MR T MGULI
DATE: 05 FEB 2018