



Hilland Environmental

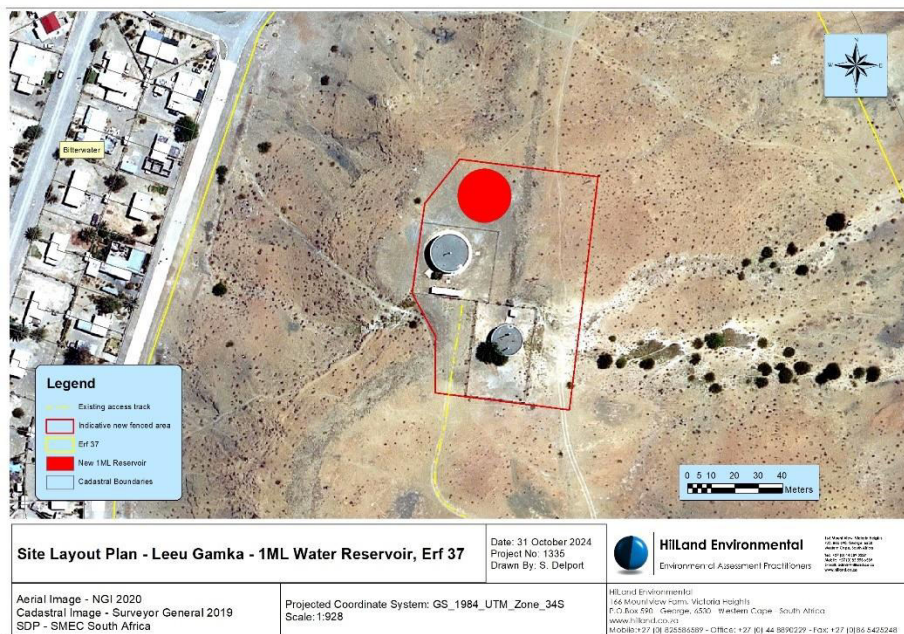
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ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

In terms of the National Environmental Management Act, 1998 (Act 107 of 1998, as amended) and the Environmental Impact Assessment Regulations 2014 (as amended)

FOR THE PROPOSED CONSTRUCTION OF A 1Mℓ NEW POTABLE WATER RESERVOIR ON ERF 37, LEEU GAMKA



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EMPr:

THE CONSTRUCTION OF THE NEW 1Mℓ POTABLE WATER RESERVOIR ON ERF 37, LEEU GAMKA

Submitted for:

COMMENCEMENT

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Annexure H	NEMA Duty of Care – - pipeline (water and sewer) and sewer pump station layout plan - Engineering method statement

An EMPr must comply with Section 24N of NEMA and the Environmental Impact Assessment Regulations 2014 (GN 982 Appendix 4) which requires that it must include the following:

REQUIREMENTS	REPORT SECTION
(a) details of- (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Annexure F
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 2
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Annexure B
(d) a description of the impact management [objectives] outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Sections 6 & 7
(e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	
(f) a description of proposed impact management actions, identifying the manner in which the impact management [objectives and] outcomes contemplated in paragraph (d) [and (e)] will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;	
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Sections 6, 7 and 9
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f)	
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Sections 6 & 7
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 9
(m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 3
(n) any specific information that may be required by the competent authority.	N/A

(2) The environmental management programme must contain information that is prescribed.

(3) The environmental management programme must, where appropriate- (a) set out time periods within which the measures contemplated in the environmental management programme must be implemented – **Throughout the report;**

- (b) contain measures regulating responsibilities for any environmental damage, pollution, pumping and treatment of polluted or extraneous water or ecological degradation which may occur inside and outside the boundaries of the operations in question; - **throughout the report**
- (c) develop an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment. - **attached SDP and no-go map**

1 INTRODUCTION

Hilland Environmental, independent Environmental Assessment Practitioners (EAP), have been appointed by the applicant, Prince Albert Municipality, represented by **SMEC South Africa**, to ensure compliance with the regulations contained in the National Environmental Management Act (NEMA, No 107 of 1998, as amended) and the Environmental Impact Assessment Regulations, 2014 (as amended) for the construction of the new 1Mℓ reservoir on Erf 37, Leeu Gamka.

This EMPr is submitted as per the requirements of the Environmental Authorisation (EA) following the Basic Assessment in terms of NEMA.

The monitoring of compliance of the EMPr is mandatory in terms of the construction phase and a compliance reporting is required at the **end** of the construction phases.

This EMPr must be included in the tender documents of **all** prospective contractors and must also be included in the final contract awarded. **The EMPr must be regarded as binding on all contractors, sub-contractors, agents, consultants and construction staff on the property related to the project.**

The full and approved EMPr will be made available to all contractors working on the project. Certain fundamental aspects are therefore of importance:

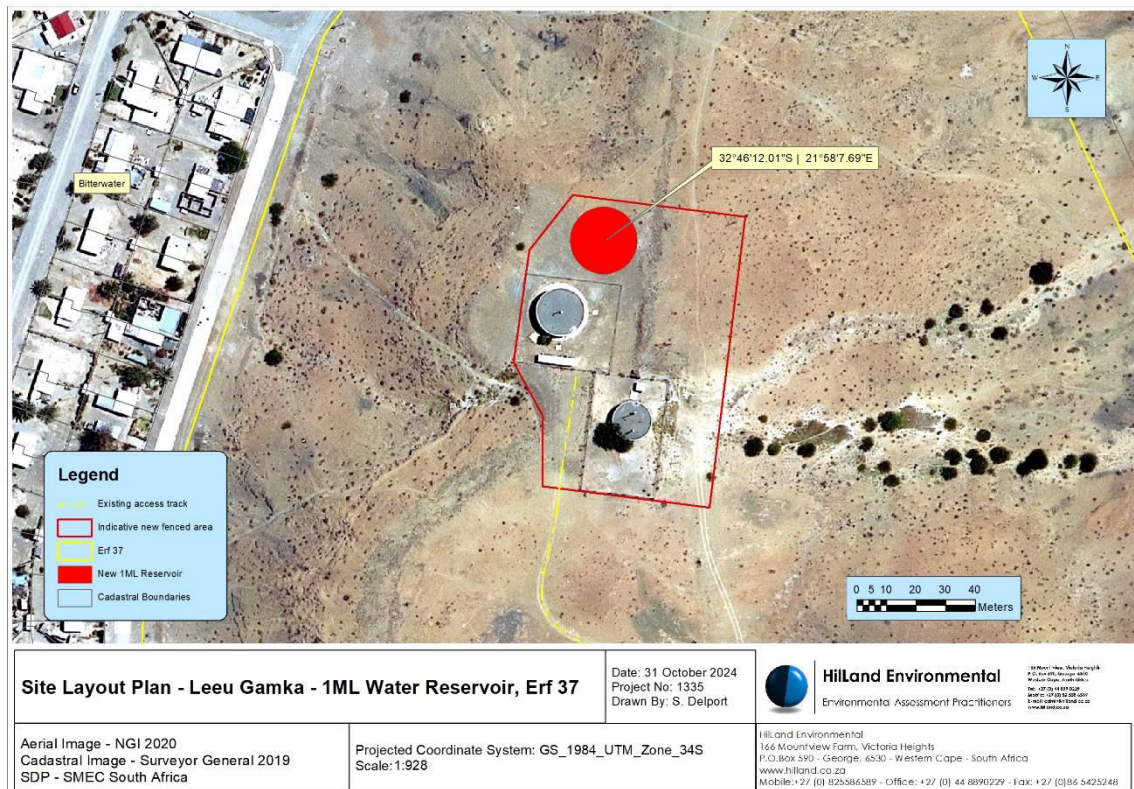
- The EMPr and these requirements are binding on all contractors and their sub-contractors.
- **It is the responsibility of the applicant/ holder** to ensure that his/her main contractor and any sub-contractors are made aware of the environmental requirements for working on the project.
- The contractor(s) will be required to make good any damage caused through their actions or the actions of their sub-contractors (in addition to any penalties for non-compliance issued).

Please note that this EMPr is a dynamic document, which will grow and be changed with new developments in the field as the need arises.

2 DEVELOPMENT PROPOSAL

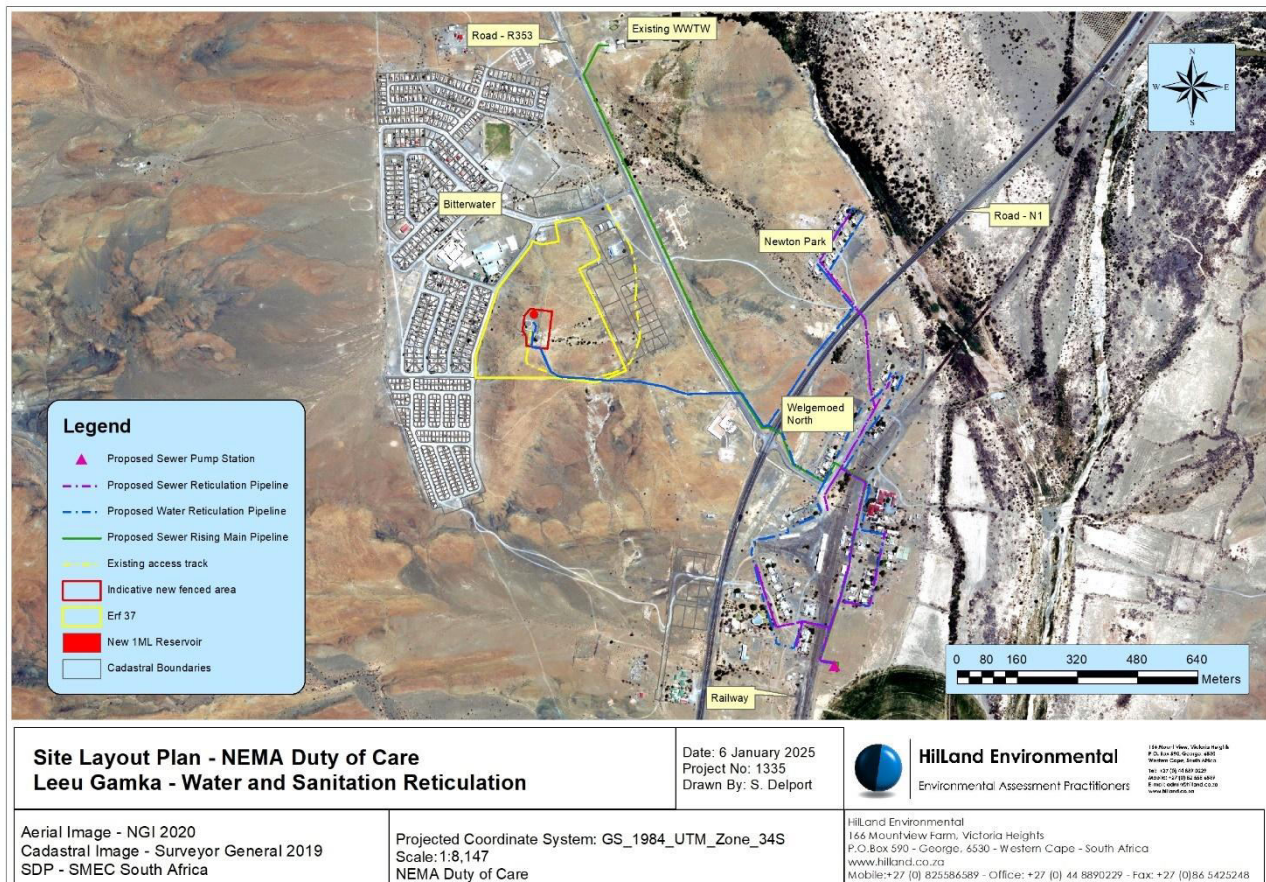
The proposed development entails the construction of a 1Mℓ potable water reservoir directly next to the existing 1Mℓ potable water reservoir and the existing 200Kℓ raw water reservoir on Erf 37, Leeu Gamka, Prince Albert Municipal area.

The new reservoir will be within a new approximate 4500m² fenced utilities area.



Site plan – red line showing the new fenced area and new reservoir – red circle
 Access will remain via existing track – yellow dotted line

The installation of the associated pipelines connecting the reservoirs is included in this EMPr, it is located within the development footprint (fenced in area). The installation of the other pipelines (water and sewer) and sewage pump station associated with the Upgrading of the Leeu Gamka Water and Sanitation project is also included in this EMPr as NEMA Duty of Care - as the sewage pump station and pipelines (water and sewer) does not currently trigger any listed activities itself in terms of NEMA EIA Regulations (2014, as amended).



NEMA Duty of Care Site plan

Deviation from the description provided above will need to be approved before implementation.

3 TERMS OF REFERENCE

The main terms of reference of this EMPr are to identify and mitigate any potential negative environmental impacts that may be associated with the construction of the New Reservoir on Erf 37.

The full and approved EMPr must be made available to all contractors working on the project and must be included in all tender documentation. Certain fundamental aspects are therefore of importance:

The EMPr and these requirements are binding on all contractors and their sub-contractors.

It is the responsibility of the applicant/ holder to ensure that any contractor(s) or sub-contractor(s) is made aware of the environmental requirements.

The contractor will be required to make good any damage caused through their actions or the actions of their sub-contractors (in addition to any penalties for non-compliance issued).

3.1 ENVIRONMENTAL CONTROL OFFICER (ECO)

An environmental control officer (ECO) must be appointed to oversee vegetation transplant/clearing and construction activities associated with the Environmental Authorisation (EA) and the Environmental Management Programme (EMPr) and to assist with issues as they arise on site (Condition 14).

It will be the ECO's responsibility to ensure that the mitigation / rehabilitation measures and recommendations referred to in the EA are implemented and complied with by the applicant and their representatives.

The **applicant** will be responsible for the remuneration of the ECO and any other expenses encountered in the process of environmental monitoring of the construction.

3.2 SELECTION OF THE ECO

The appointed ECO must be able to demonstrate that (s)he is of sufficient competency to undertake the required task. This includes:

- Previous experience of environmental control of similar sites.
- Working experience with contractors.
- Knowledge of the particular project and expected areas of concern.

3.2.1 ROLES AND RESPONSIBILITIES OF THE ECO

The ECO will undertake the following tasks:

- Ensure **compliance** with the EMPr at all times during the construction phase;
- Ensure compliance with relevant management **conditions** of the EA during the construction phase;
- To work in close co-operation with the engineer, contractors of the site;
- Meet with the contractors to set out the environmental parameters within which they must work;
- Provide **Environmental Induction (Environmental Education)** with all contractors **prior** to the commencement of any work;
- Indicate where all no-go areas are to be demarcated and to ensure adherence to these delimitations at the induction session **BEFORE** any construction commences on-site (pre-construction phase);
- Indicate where **erosion protection and siltation prevention measures** are required or need to be supplemented and to ensure correct implementation;
- Advise on **rehabilitation measures** according to the different areas along the pipeline route;
- Check up on general environmentally friendly construction practices (e.g., no littering, safe and secure environment, contamination risks, etc.).
- Ensure that the correct earthworks practices are adhered to, e.g., no encroachment into the surrounding vegetation, separation of topsoil and subsoil, correct stockpiling and stripping of topsoil);

- Provide a report back at site meetings to report on and assess the success of the environmental control and to determine any further environmental control measures which are necessary;
- The ECO must visit the site **monthly** during the construction of the **reservoir** and rehabilitation thereof. The ECO is to be available at any time as required by the contractors, resident engineer or authorities;
- The ECO is to advise on all associated infrastructure construction phase to ensure that the construction remains within the parameters described and that the work is compliant with the NEMA Duty of Care.
- The ECO has the discretion to undertake more frequent visits if he/she feels this is justified due to the actions of the contractors and to make ad hoc visits in order to ensure compliance;
- The ECO is to keep a site diary; a photographic record of activities taking place on site as well as copies of all monthly reports compiled, a schedule of current site activities including the monitoring of such activities and complaints register of all public complaints and the remedies applied to such complaints;
- **Monthly monitoring report** must be submitted to DEADP, the resident engineer and applicant during the **construction phase**;
- The ECO is to submit a **completion report** to the competent authority (**DEADP**) and **applicant** upon completion of the construction phase of the reservoir;
- It must be noted that the **ECO HAS THE AUTHORITY TO SUSPEND WORK ON SITE FOR ANY ACTION BEING UNDERTAKEN THAT DOES NOT COMPLY WITH THE ENVIRONMENTAL REQUIREMENTS OF THE SITE**. Such a stop order has immediate effect and will be communicated through the resident engineer to the contractor responsible.

4 CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION

The conditions of the Environmental Authorisation (EA), once issued, will be inserted in this section and Annexure G. The full EA will be included in the appendices. It is **binding** on the contractors, sub-contractors, agents, consultants and construction staff on the property.

1. This Environmental Authorisation is granted for the period from date of issue until **30 April 2030** (validity period), during which period the Holder must ensure that the—

- (a) physical implementation of all the authorised listed activities is started with and concluded;
- (b) construction monitoring and reporting requirements are undertaken and submitted to the Competent Authority in time to allow said authority to process such documents timeously;
- (c) post construction rehabilitation and monitoring requirements is undertaken and completed; and
- (d) environmental auditing requirements are complied with; and that such auditing is finalised in time to allow the competent authority to be able to process the environmental audits timeously within the specified validity period.

Failing which, this Environmental Authorisation shall lapse, unless the environmental authorisation is amended in accordance with the relevant process contemplated in the Environmental Impact Assessment Regulations promulgated under the National Environmental Management Act, 1998 (Act no. 107 of 1998).

2. The Holder is authorised to undertake the listed activities specified in Section B above in respect of the preferred alternative described in the FBAR, dated 31 October 2024, on the site as described in Section D above.

This Environmental Authorisation is for the implementation of the **preferred alternative** which entails:

The proposed development of a new one megalitre (1Mℓ) reservoir on Erf 37 in Leeu-Gamka. The proposed reservoir will connect to the existing storage reservoir on Erf 37 and will be five metres (5m) in height and eighteen metres (18m) in diameter.

The proposed reservoir will be developed approximate to the following design plans drafted by SMEC Consulting Engineers attached as Annexure 2 and Annexure 2A to this environmental authorisation, namely the:

- 1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN (Drawing No: C3326-CIV-RES-001; Sheet No: 1 of 6; Rev. A) dated 1 February 2023 ; and
- 1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS (Drawing No: C3326-CIV-RES-003; Sheet No: 3 of 6; Rev. A) dated 1 February 2023.

3. This Environmental Authorisation may only be implemented in accordance with the approved Environmental Management Programme ("EMPr").

4. The Holder shall be responsible for ensuring compliance with the conditions by any person acting on his/her behalf, including an agent, sub-contractor, employee or any person rendering a service to the Holder.

5. Any changes to, or deviations from the scope of the alternative described in section B above must be accepted or approved, in writing, by the Competent Authority before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the Competent Authority may request information in order to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the Holder to apply for further authorisation in terms of the applicable legislation.

6. The Holder must in writing, within 14 (fourteen) calendar days of the date of this decision– **Done 2 April 2025**

6.1. notify all registered Interested and Affected Parties ("I&APs") of –

- (a) the decision reached on the application;
- (b) the reasons for the decision as included in Annexure 3;
- (c) the date of the decision; and
- (d) the date when the decision was issued.

6.2. draw the attention of all registered I&APs to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations, 2025 detailed in Section H below;

6.3. draw the attention of all registered I&APs to the manner in which they may access the decision;

6.4. provide the registered I&APs with the:

- (a) name of the Holder (entity) of this Environmental Authorisation,
- (b) name of the responsible person for this Environmental Authorisation,
- (c) postal address of the Holder,
- (d) telephonic and fax details of the Holder,
- (e) e-mail address, if any, of the Holder,
- (f) contact details (postal and/or physical address, contact number, facsimile and e-mail address) of the decision-maker and all registered I&APs in the event that an appeal is lodged in terms of the National Appeals Regulations, 2025.

6.5. The listed activities, including site preparation, must not commence within 20 (twenty) calendar days from the date the holder notifies the registered I&APs of this decision.

6.6. In the event that an appeal is lodged with the Appeal Authority, the effect of this Environmental Authorisation is suspended until the appeal is decided i.e., the listed activities, including site preparation, must not commence until the appeal is decided.

7. Seven calendar days' notice, in writing, must be given to the Competent Authority before commencement of any activities on site.

7.1. The notice must make clear reference to the site details and EIA Reference number given above.

7.2. The notice must also include proof of compliance with the following conditions described herein: Condition no.: 6 and 13

8. Seven calendar days' notice, in writing, must be given to the Competent Authority on completion of the construction activities.

9. The Holder must notify the competent authority if the non-operational phase (construction activities and rehabilitation measures) has been abandoned prior to completion thereof, or if the construction activities and rehabilitation process will be placed on hold for a period of six (6) months or longer.

The competent authority must be notified in writing—

9.1. within 30-calendar days of the cessation of the activities on site; and

9.2. seven calendar days' notice, must be given prior to any activities continuing on site again.

10. The Environmental Management Programme ("EMPr") submitted as part of the application for Environmental Authorisation is herewith approved.

11. The EMPr must be updated to incorporate all the conditions contained in this Environmental Authorisation and all those measures for the avoidance, management, mitigation, monitoring and reporting as identified in this Environmental Authorisation additional to those contained in the approved EMPr – **this document**

The updated EMPr must be re-submitted to the Competent Authority prior to commencement of the construction activities – **25 April 2025**.

12. The approved EMPr (including the additional measures for the avoidance, management, mitigation, monitoring and reporting identified in the Environmental Authorisation) must be included in all contract documentation for all phases of implementation.

13. The Holder must appoint a suitably experienced environmental control officer ("ECO"), for the duration of the construction and rehabilitation phases of implementation contained herein.

14. The ECO must—

14.1. be appointed prior to commencement of any works (i.e., demarcation of the remaining natural area, relocation of bulbs; and disturbance, cutting and / or damage to protected flora species);

14.2. conduct site inspections;

14.3. ensure compliance with the EMPr and the conditions contained herein;

14.4. keep record of all activities on the site; problems identified; transgressions noted, and a task schedule of tasks undertaken by the ECO;

14.5. remain employed until all development activities are concluded, and the post construction rehabilitation and monitoring requirements are finalised.

14.6. submit ECO Reports to the Competent Authority as per the frequency indicated in the EMPr.

15. A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised activities and be made available to anyone on request, and where the Holder has website, such documents must be made available on such publicly accessible website.

16. Access to the site (referred to in Section D) must be granted, and the environmental reports mentioned above must be produced, to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

17. The Holder must, for the period during which the environmental authorisation and EMPr remain valid, ensure that compliance with the conditions of the environmental authorisation and the EMPr, is audited.

18. The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr, must adhere to the following programme:

18.1. During the non-operational phase (construction phase) the Holder must submit an Environmental Audit Report to the Competent Authority within three (3) months of completion of the construction phase.

Note: Failure to complete the auditing requirements at least three months prior to expiry of the validity period of the environmental authorisation may result in the Holder not being able to comply with all the environmental auditing and reporting requirements.

19. The Environmental Audit Report, must –

- 19.1. be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise. Such person may not be the ECO or EAP who conducted the EIA process;
- 19.2. provide verifiable findings, in a structured and systematic manner, on–
 - (a) the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
 - (b) the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.
- 19.3. identify and assess any new impacts and risks as a result of undertaking the activity;
- 19.4. evaluate the effectiveness of the EMPr;
- 19.5. identify shortcomings in the EMPr;
- 19.6. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;
- 19.7. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;
- 19.8. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation;
- 19.9. include a photographic record of the site applicable to the audit; and
- 19.10. be informed by the ECO reports.

20. The Holder must, within 7 calendar days of the submission of the audit report to the Competent Authority, notify all potential and registered I&APs of the submission and make the report available to anyone on request and on a publicly accessible website (if applicable).

21. Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains may only be disturbed by a suitably qualified heritage specialist working under a directive from the relevant Heritage Resources Authority.

Heritage remains include: meteorites, archaeological and/or paleontological remains (including fossil shells and trace fossils); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artefacts and bone remains; structures and other built features with heritage significance; rock art and rock engravings; shipwrecks; and/or graves or unmarked human burials including grave goods and/or associated burial material.

5 LISTED ACTIVITY APPLIED FOR

The following activity listed in terms of the NEMA EIA Regulations (2014, as amended) was applied for in the application to DEADP and is covered in the EA and this EMPr:

Table 1: Listed activities applied for

Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1	Describe the portion of the proposed development to which the applicable listed activity relates.
2	The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres. i. Western Cape i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. In areas containing indigenous vegetation; or iii. Inside urban areas:	The reservoir capacity (1000 cubic metres / 1Mℓ) exceeds the 250 cubic metres threshold and the proposed reservoir site contains indigenous vegetation and is outside the urban area. An additional area of 4500m² containing indigenous vegetation will be fenced to add to the existing 2000m² fenced area as a utility erf. It is anticipated that all indigenous vegetation will be removed as part of this process and that the area may be stabilized with a stabilizing grass mix for long term erosion control.

	(aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose.	This listed activity is therefore applicable.
Activity No(s):	Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3	Describe the portion of the proposed development to which the applicable listed activity relates.
12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister.	The construction of the new 1Ml potable water reservoir and associated infrastructure (fenced in area, fence, pipe connections etc) will require more than 300m ² clearance of indigenous vegetation within an area currently zoned as Open Space. Note that there is a Rezoning application in process to change the municipal infrastructure area from "Open space" to Utilities zoning.

6 MANAGEMENT OUTCOMES AND OBJECTIVES

The following objectives and outcomes were identified:

Objective: Prevention of soil erosion

Impacts to avoid:

- Unnecessary disturbance of soil
- Unnecessary disturbance of vegetation
- Loss of soil in disturbed areas

Management actions:

- Rescue topsoil from within the construction area for use in the rehabilitation areas as required.
- Areas susceptible to erosion must be covered / protected and erosion mitigation measures must be implemented – including the use of stabilizing grass mix.
- Rehabilitation must be done following construction and to the satisfaction of the ECO

Management Outcome:

- Soil erosion will be kept to a minimum.

Objective: Prevention of pollution

Impacts to avoid:

- Potential leaks from vehicles/construction machinery
- Spillages of hazardous substances (if any)
- Leakage of chemical ablution facilities
- Spillage of cement or concrete products into the surrounding area
- Contamination run-off from the construction site
- Waste, such as construction materials etc., which can be blown / washed away into the surrounding environment

Management actions:

- Vehicles and machinery must be well-maintained
- Drip-trays must be used for vehicles / machinery
- Ablution facilities must be well-maintained and regularly emptied
- Litter control essential throughout construction and operational phases
- Cement / concrete must be mixed on impermeable surfaces,
- Concrete batching areas to be located in the utilities node, and must have bunding to prevent the movement out of the area.
- Management must be sound
- Monitoring by contractor and ECO

Management Outcome:

- No contamination of the environment or surrounding areas.

Objective: Prevention of impact of heritage resources

Impacts to avoid:

- Damage to the heritage resources on the property

Management actions:

- As per the EMPr, should any heritage resources be discovered, work will cease and HWC will be contacted to advise further

Management Outcome:

- Potential heritage, archaeological and paleontological impacts are mitigated and avoided

Objective – Prevent disturbance to indigenous vegetation

Impact to avoid:

- Disturbance of indigenous vegetation during the construction phase.

Management action:

- Construction impacts must be strictly limited to the proposed working zone,

- Existing roads and vehicle tracks must be used for access - no impacts must be permitted in surrounding areas,
- Disturbed areas must be adequately and quickly rehabilitated,
- Any erosion risks must be carefully and effectively managed to avoid impacts on downslope areas,
- The area around the utilities node must be treated strictly as a "No-Go" area.
- Any pipeline trenches are to be limited the width of the excavation and all excavations to be limited to the minimal disturbance area possible.
- Pipeline routes to be inspected by the ECO prior to excavation for identification of any species for plant rescue.
- Topsoil to be stockpiled separately to subsoil from the trench and to be returned to the top of the trench for rehabilitation and planting.
- Any crossings of drainage lines are to be first inspected by the ECO and a method statement confirmed prior to commencement to ensure that NEMA thresholds are not exceeded.

Management outcome:

- No disturbance of vegetation outside of the development footprint.
- Rapid rehabilitation of vegetation over pipeline trenches as required.

7 SPECIFICALLY REQUIRED ENVIRONMENTAL MANAGEMENT PRACTICES

7.1 PRE-CONSTRUCTION PHASE

7.1.1 ENVIRONMENTAL INDUCTION (EDUCATION)

- All construction staff **must** be briefed by the ECO in an environmental education programme regarding the environmental status and requirements of the site, **prior** to any activities commencing on site. This will include providing general guidelines for minimizing environmental damage during construction, as well as education with regards to basic environmental ethics, such as prevention of littering, the lighting of fires, etc. Records of environmental training (attendance register and training content) must be kept. Please refer to **Annexure D** of this EMPr.
- Induction required for **all contractors** prior to them commencing on site.

7.1.2 METHOD STATEMENT

- **Where requested by the ECO** - Before the contractor(s) begins each construction activity the contractor and Site Agent must, **prior to the commencement** of such activity involving construction, maintenance or rehabilitation, give the ECO a written plan setting out the following:
 - Location of the construction camp –
 - Cement and concrete batching
 - Storage of construction materials and hazardous substances (**if any**)
 - Location of any stockpile sites for topsoil
 - Location of any stockpile sites for subsoil
 - Solid waste
 - Erosion and sedimentation control

- Fire control
- Protection of natural features
- Drainage line crossings

The ECO is to approve the method statement **before** the works commence. A pro-forma method statement showing what is required is attached in **Annexure E**.

7.1.3 PLANT RESCUE AND CLEARANCE AND ANIMAL PROTECTION

The clearance of vegetation within the proposed fenced area will be required. Based on the transformed state of the site selected for the new reservoir, limited clearing of vegetation will be required.

The following species were noted by the specialist (Dr David Hoare) within the site:

- *Barleria stimulans* (Karoo Bushviolet)
- *Cyphocarpa angustifolia* (Silky burweed)
- *Fingerhuthia africana* (blousoetgras)
- *Lycium horridum* (honeythorn)
- *Rhigozum obovatum* (yellow pomegranate)
- *Trichodesma africanum* (African barbbell)

Prior to the commencement of clearing of vegetation/construction - It is recommended that the new fenced area be pegged by a surveyor and inspected by the ECO to identify plants that needs to be rescued.

Any transplantable species (shrubs, succulents, geophytes etc.) which occur within the working area should be directly transplanted into the surrounding open space areas (outside of the new fenced area).

For successful transplant a sod including the desired plant with its roots intact should be removed and replanted.

A record of rescued plants is to be maintained.

Vegetation/site clearing may **only** commence once plant rescue is completed.

NO removal, damage or disturbance of flora outside of the immediate construction area is permitted.

All pipeline routes to be inspected by the ECO for plant rescue requirements prior to commencement of excavation and topsoil disturbance.

Protection of fauna (animals):

Before the commencement of plant rescue and vegetation clearance activities or the use of any equipment on-site, animal rescue of small, slow-moving species is to be conducted in conjunction with the ECO. Any rescued animals including tortoises and other reptiles are to be safely relocated to a nearby undisturbed natural area that does not form part of the proposed construction area / working zone. During any construction phase, the disturbance

to fauna within the area is to be **avoided** and where a conflict arises, the ECO should be asked for assistance (e.g., snakes found in excavated areas or within the working zone etc.).

The contractor(s) shall ensure that no hunting, trapping, shooting, poisoning or otherwise disturbance of any fauna takes place.

NO removal, damage or disturbance of fauna located outside of the immediate construction area is permitted.

7.1.4 DEMARCATION OF WORKING ZONE AND NO-GO AREAS

It is recommended that the pre-construction demarcation of the working zone (and maintenance thereof) must be included in the tender document as a billable item to ensure proper execution.

The working zone (reservoir/new fenced area) must be adequately demarcated **prior** to the commencement of any vegetation or site clearance. Demarcation should be shifted as work progresses.

- All people working on site must be made aware of the boundaries within which work is to be done.
- Construction work will only be allowed within the demarcated work area, this include all construction material and equipment to be kept inside this area.
- **The No-Go areas must be kept clear of any construction material/vehicles as well as stock piling of vegetation matter and topsoil**
- All construction activities must be **restricted** to the demarcated areas to ensure that no further disturbance into the surrounding vegetation.
- No encroachment or activities is permitted to take place outside the work areas.
- Storage sites for construction material and access must be approved by the ECO prior to commencing (and areas will require rehabilitation after use).
- **In light of the above, should access be required through a no-go area, permission must be obtained from the ECO in writing prior to the use of such an area.**
- The ECO must monitor adherence to the No-Go area policy.
- Access into the No-Go areas by personnel is strictly forbidden (i.e., Work breaks such as lunch are not permitted outside the defined work area. A spot fine will be imposed against the contractor in the event of contravention of the no-go policy up to a **maximum of R5 000 per incident**).
- Dedicated access tracks (existing track to the reservoir) **must be used, no deviations allowed from the agreed access road**.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Pre-Construction and Construction phase							
Environmental education	Construction of the reservoir	Do environmental induction with all staff members before they start on site	Before the workers start on site	ECO to do environmental induction session	Before new staff start on site	ECO Contractor (notify ECO when new staff start on site)	ECO keep record of staff that had environmental induction
Plant and animal search and rescue and protection	Construction of the reservoir	•Surveyor to peg out the new area to be fenced •ECO to identify plants and animals to rescue/transplant •Keep record of the plants rescued/transplanted •ECO to inspect all pipeline excavation routes prior to commencement.	Before construction start	ECO to identify plants to be rescued Contractor to plant rescued plants to outside of the fenced area of the reservoirs	Once before construction start	Applicant / engineer to notify ECO of commencement date ECO to do plant search and rescue with the contractor	ECO to keep record of all plants and animals rescued / transplanted
Demarcation of no-go areas and protection of sensitive areas	Construction of the reservoir and associated pipelines	The contractors are to comply with the requirements of the EMPr Demarcation of working areas is required by means of shade netting and/or danger tape (ECO to recommend).	During the construction of the reservoir	ECO and contractor to continually monitor compliance during construction	ECO to conduct monthly inspections of construction works	Contractor to implement no-go demarcation ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monthly monitoring report

7.1.5 TOPSOIL AND SUBSOIL MANAGEMENT

Minimal vegetation clearance /topsoil disturbance will take place within the proposed development footprint (new fenced area).

- **No** topsoil stripping is to take place **BEFORE** the completion of the plant rescue programme.
- Topsoil and sub-soil should be stored separately.
- The soil removed for installation of the pipelines (connection to existing system) must not be removed, but placed to the side of the trench, while the sub-soil is placed to the other side. The soil is returned in the same order with the vegetated topsoil closing the trench and stimulating re-growth.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Pre-construction and construction phase							
Removal of topsoil and sub-soil for the construction of the new reservoir	New reservoir and where applicable associated pipes	• Topsoil stripping and storage must be done prior to the commencement of construction activities • Subsoil that will not be used within construction is to be carted off site and disposed of at an approved landfill site (none anticipated) • Additional topsoil must be used within the rehabilitation phase	Pre-construction and construction phase	ECO to monitor compliance throughout the pre-construction and construction phase	Continual monitoring of compliance	Contractor to ensure that stockpiling of topsoil is done and maintained throughout the construction phase – erosion, alien plants etc. Contractor to ensure that the topsoil is used in rehabilitation and subsoil not used within the construction phase is carted off site and disposed of at an approved landfill site ECO to monitor	To be included in compliance monitor report

7.1.6 HERITAGE AND CULTURAL RESOURCES

Although not anticipated, should it be suspected that an object or structure of heritage value has been uncovered during earthworks or the clearing of vegetation (including but not limited to bones, burial sites, structures older than 50 years, stone tools, shell middens, pottery etc.), then all work is to immediately cease, and the ECO is to be contacted to inform Heritage Western Cape (HWC). Work shall not recommence until HWC have visited the site, inspected the object in question and advised on how to proceed. If the object requires removal by a trained archaeologist, this process will be at the expense of the developer. It is the contractor's responsibility to ensure all staff on site is aware of this procedure – **Condition 21**

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitor
Pre-construction and Construction phases							
Clearance of vegetation and earthworks required during the construction phase	Construction of new reservoir and associated pipelines	Should any object or structure of heritage value be discovered, work is to cease , ECO is to be contacted and advise accordingly	Pre-construction and construction phase	ECO to monitor compliance during the pre-construction and construction phase	Continual monitoring of compliance	Contractor to ensure that work ceases should any object or structure of heritage value be discovered, and the ECO should be contacted The ECO is to contact HWC and advise accordingly	Finds to be included in compliance monitoring report

7.2 GENERAL CONSTRUCTION REQUIREMENTS

7.2.1 ACCESS TO THE SITE

The existing track to the facility must be used for the construction phase associated with the new reservoir. The existing track may be maintained, but not widened.

Construction vehicles leaving the site, wherever possible, may not deposit concrete on the road surface. Where this is unavoidable, it must be cleaned on a daily basis and may not be permitted to enter the storm water system.

7.2.2 SITE AGENT

The contractor must appoint a responsible agent to ensure that they comply with this EMPr, EA and all its conditions. This party is to report directly to the ECO, engineer and contractor on matters concerning the environment, will need to attend the environmental induction and be briefed on the requirements by the ECO. It is recommended that communication regarding queries, concerns and updates is done through phone calls, electronic photos, emails, and reports.

7.2.3 USE OF LOCAL LABOUR

It is strongly recommended that local labour is used for the construction phase of this project. "Local" implies people within the Prince Albert Municipality – Leeu Gamka.

Records are to be kept of all personnel and subcontractors employed by the contractor. The main contractor is to provide the breakdowns of their various sub-contractors. **These records are to be provided to the ECO by the contractor(s) on a monthly basis (where requested by the ECO).**

7.2.4 HEALTH AND SAFETY

The H&S Officer is to copy the ECO in on his/her reports for record purposes.

7.2.5 SITE CAMP

- Ablution facilities (chemical toilets) are to be provided and maintained at the camp site for use of the staff at a ratio of one (1) toilet to every 15 workers.
- A fenced-off area (if not located within the reservoirs fenced area) must be created within the site camp for refuse and waste management. Refuse is to be collected in separate weatherproof, scavenger proof containers, containers for recyclable materials (glass, metal, paper, and plastic) and the other for non-recyclable materials. These are to be disposed of at the various approved waste disposal sites.
- No accommodation with the exception of a night watchman is permitted on-site by contractor(s) or their staff during the construction period.
- **No open fires are to be permitted.**
- Storage of all materials required for the contract must occur within this camp site, or otherwise approved area (by the ECO).
- **Any cement mixing or concrete batching plant areas must be located within the site camp.**
- Adequate signage must be erected at the construction site to ensure that safety regulations are adhered to.

7.2.6 STORAGE OF CONSTRUCTION MATERIAL

The following must be adhered to:

- All construction material must be stockpile within the site camp.
- **No** construction material may be stored outside of the site camp.
- Hazardous materials must be stored inside the construction site camp and must always be within a bunded area.

7.2.7 FIRE PROTECTION

The contractor should take all reasonable and active steps to avoid increasing this risk (especially to prevent damage to surrounding vegetation). **No** open fires or naked flames for heating or cooking are allowed anywhere on site. The contractor must ensure that all personnel are aware of the fire risk and the need to extinguish cigarettes before disposal. **Cigarettes may not be discarded onsite and must be disposed of properly in receptacles for this purpose.**

No burning of waste on ANY PART of the site is to be permitted.

The contractor must notify the authorities responsible for fighting fires in the area and must liaise with them regarding procedures if a fire start. The contractor shall ensure that all staff members are aware of the fire danger at all times and are aware of the procedure to be followed in the event of a fire. The contractor must also ensure that all the necessary telephone numbers etc. are posted at conspicuous and relevant locations in the event of an emergency. The contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Fire protection during the Construction of the pipeline and reservoir	Construction of the reservoir and associated pipelines	Emergency contact details must be placed at conspicuous and relevant locations in the event of an emergency	Pre-construction and throughout construction phase.	ECO or H&SO to confirm that the emergency contact detail list is posted	Once-off – must be in place pre-construction	Contractor	ECO and / or H&SO to monitor once during pre-construction

7.2.8 WASTE MANAGEMENT

It is recommended that an integrated waste management approach is used which is based on waste minimisation and includes reduction, recycling, re-use and disposal where appropriate. Only approved waste disposal methods are allowed. The contractor(s) must ensure that all site personnel are instructed in the proper disposal of all waste. The contractor(s) must ensure that **sufficient disposal facilities** are available throughout the site. **Recycling** must be encouraged on-site and recycling bins should be provided and clearly marked.

Disposal of all waste materials must be done at suitable facilities. **No dumping** of any waste material on or off-site is permitted.

The contractor shall ensure that the site is maintained in a **neat and tidy** condition and kept **free of litter**. Measures must be taken to reduce the potential for litter and negligent behavior with regard to the disposal of all refuse. At all places of work, the contractor shall provide **litter bins, containers** and **refuse collection facilities** for later disposal. Litter to be removed from the site on a **daily** basis (through daily litter picking before the site is closed for the day). Rubbish bins must be provided on-site and regularly cleaned / emptied.

Solid waste (construction rubble etc.) is to be temporarily stored on-site in a **designated area in the site camp** prior to collection and disposal. Solid waste must be removed on a **weekly basis** to a licensed municipal waste site.

Waste storage **containers** shall be covered, tip-proof, weatherproof and scavenger proof. The **waste storage area** shall be **fenced off** to prevent wind-blown litter.

7.2.9 ABLUTION FACILITIES

The contractor must provide temporary (chemical) ablution facilities for all construction personnel working on-site at the site camp and reservoir site. One (1) facility for every 15 persons on site is required. Toilets must be of a neat construction and must be provided with doors and locks and must be secured to prevent them from blowing over. Sanitation provision and servicing shall be to the satisfaction of the environmental control officer.

The contractor must ensure that the toilet(s) are emptied regularly and also before weekends and public holiday periods.

Failure to use the chemical toilet provided and making use of the vegetation either on or off-site will result in a maximum penalty fine being awarded in addition to requiring the contractor to clean up.

7.2.10 CONCRETE AND CEMENT WORKS

- Mixing areas must be defined on-site and **clearly** demarcated
- Cement powder has a high alkalinity pH rating, which can contaminate and affect both soil and water pH dramatically. A shift in pH can have serious consequences on the functioning of the soil, water organisms and plants.
- All concrete must be mixed in a batching area that is bunded.
- Cement mixing must be either ready-mix, from the batching area or mixed on trays / on thick plastic and not on the soil.
- Bunding through the use of sandbag walls around any mixing areas is recommended, together with an impermeable base.
- Contaminated soil from such bunds to be disposed of at the municipal waste disposal site.
- When using Ready-mix concrete, care must be taken to prevent spills from the trucks while offloading.
- Cement contaminated water may not enter any open space.
- The contractors and sub-contractors need to ensure that the used cement bags do not create a litter problem.
- Any cement or concrete contaminated soil must be removed and disposed of appropriately.
- Excess or spilt concrete should be disposed of at a suitable registered landfill site.
- No water for the mixing of cement may be sourced from any river system
- No mixing to be done in environmentally sensitive areas or areas

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Cement and concrete works	Construction of the reservoir and associated pipelines	Cement and concrete works are to comply with the EMPr Appropriate bunding and mixing on impermeable surfaces must be implemented	Construction phase	ECO and contractor to monitor the site during construction (during monthly ECO visit)	ECO to conduct inspections of construction works (monthly)	Contractor to implement mitigation measures as per the EMPr ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report

7.2.11 SOIL EROSION AND STORMWATER MANAGEMENT

- Limit clearing of vegetation as far as possible as this prevents the movement of silt.
- Stringent mitigation measures must be imposed during construction to minimise runoff, possible silt run-off and contamination of water leaving the site
- Use of silt-fencing, rows of onion bags, mulch, brushwood, sandbags and deflection berms (the choice depending on the situation). These mitigation measures are essential in all exposed areas.

- Areas requiring erosion control mechanisms are to be identified by the contractor and ECO. Instructions by the ECO are to be given to the contractor as required.
- In the event of erosion damage or silt movement, the contractor will be liable for a fine and is responsible for the clean-up and required to reinstate the conditions to normal as determined by the ECO.
- To decrease the risk of water pollution, all construction materials must be secured (e.g., only stockpiling at a pre-determined site, around which there must be a silt protection boundary) so that there is no wash away.
- In the case of contaminated water run-off, silt can be stopped by means of sandbags and following the rain the contaminated area should be cleaned.
- It is the responsibility of the contractor working inside any trench at any specific time to ensure that their works are protected from damage which may be caused through runoff of rainwater inside the trench. The use of sandbags, mulch bags or any other appropriate methods of slowing down the flow of water within a trench is required.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Construction phase							
Potential erosion during the construction of the development.	Construction of the new reservoir, associated pipelines and sewage pump station (and associated pipelines)	The contractor is to comply with the EMPr requirements regarding erosion prevention. Emergency erosion	During the construction of the construction phase)	Contractor to continually monitor the site during construction for signs of potential erosion ECO to monitor during visit(s)	ECO to conduct inspections of construction works	ECO and contractor to monitor the site	ECO to monitor during the construction phase. To be included in the monitoring report.

7.2.12 NOISE, DUST MANAGEMENT AND NUISANCE MEASURES

During construction, work is limited to normal working hours as dictated by the local authority.

Dust mitigation measure must be implemented as required. This will include spraying of water on tracks or exposed areas that generate dust – **ECO to advise**.

Dust management includes the management of dust off any stockpile sites in the site camp.

8 REHABILITATION PHASE

Rehabilitation of damaged areas will include, but is not limited to the following:

- All building rubble and waste must be completely removed and disposed of at an approved landfill site;
- Compacted topsoil must be raked loose;
- Existing dirt tracks / roads used during construction to be left to the satisfaction of the landowner, ECO, and Engineer.
- Contaminated soil must be disposed of at an approved landfill site;

- Stockpiled topsoil to be returned to areas disturbed and devoid of topsoil, placed back on top and NOT be compacted;
- Implementation of additional measures as indicated by the ECO.
- a suitable seed mix to stabilize the soil and prevent erosion will be recommended by the ECO as required.
- Plant rescue material to be replanted.

Activities	Size and Scale	Mitigation Measures	Timeframe for Implementation	Method of Monitoring Implementation	Frequency of Monitoring	Responsible Persons	Compliance Monitoring
Rehabilitation phase							
Rehabilitation of damaged and/or disturbed areas	Construction of the reservoir, associated pipelines and sewage pump station (and associated pipelines)	Rehabilitation measures should be implemented as per the EMPr All building rubble must be completely removed and disposed of at an approved landfill site; Compacted topsoil must be raked loose; Contaminated soil must be disposed of at an approved landfill site; Indigenous grass seed can be sowed within required areas (as indicated by the ECO); Implementation of additional erosion control methods as required	During construction phase as section are completed and after construction phase, before site handover.	Contractor to implement mitigation measures ECO and contractor to monitor rehabilitation phase	ECO to conduct monthly inspections of when implemented.	Contractor to implement mitigation measures ECO and contractor to monitor rehabilitation phase	ECO to monitor during construction and rehabilitation phase. ECO to submit final compliance monitoring report upon completion of construction and. To be included within compliance report.

9 MONITORING REQUIREMENTS AND REPORTS

- An **induction** meeting with the ECO and the contractor to ensure that they are aware of the requirements of this EMPr and the EA before the commencement of the construction phase.
- Induction registers to be kept for all contractors on site.
- The ECO must inspect work areas **prior** to commencement and demarcate no-go areas or indicated areas of sensitivity.
- The ECO is to do a site inspection **monthly during the construction phase of the reservoir and the initial rehabilitation upon completion** thereof and submit a **monthly**

compliance monitoring report to DEADP, the applicant/engineer, contractor and competent authority.

- The ECO monitoring reports are to advise on any remedial actions or changes that are required to the method statements in order to ensure that the impacts identified and any that may become evident are mitigated and managed.
- ECO monitoring reports of the pipelines construction (water and sewage) and the sewage pump station need to be submitted monthly to the resident engineer for the contractor and to the local authority. It is not a requirement for these reports to be submitted to DEADP.
- Upon **completion** of the construction phase, a **final monitoring report** must be submitted by the ECO to sign-off compliance with environmental requirements. The report must be submitted to DEADP and the applicant within 6 months of the completion of all construction activities (irrespective of the status of the rehabilitation).
- Copies of all compliance reports must be sent to DEADP for record purposes.

10 AUDITING REQUIREMENTS

- The holder of the Environmental Authorisation (EA) is required to appoint a suitable and qualified independent EAP (not the ECO or the EAP who undertook the NEMA process) to conduct an Audit of the EA and EMPr 6 months after rehabilitation is completed for the reservoir site.
- The audit is to report on the success of the implementation of the EA and the EMPr as the case may be.

Table 2: Specific dates referenced in the EA (to be issued and to be filled out once EA has been received)

Date of issue of EA:	2 April 2025
Commencement must take place before and completion date for all EA activities	30 April 2030

11 OPERATIONAL PHASE

The Municipality needs to do inspections or repairs on the reservoir or associated infrastructure.

The applicant can choose to appoint an Environmental Control Officer (ECO) or make use of the Prince Albert in-house Environmental Officer for the duration of the operational phase repairs to monitor compliance against the CONSTRUCTION PHASE of this Environmental Management Programme (EMPr).

12 DECOMMISSIONING PHASE

It is not foreseen that decommissioning of an essential service such as the water supply infrastructure is not likely to take place, however, should there ever be a need for

decommissioning; all material foreign to the site must be removed and must be disposed of at an approved waste disposal site. All affected areas must be rehabilitated with topsoil and seeded and / or planted with locally occurring indigenous vegetation to protect against soil erosion.

Any material that can be recycled should be recycled.

13 PENALTIES FOR NON-COMPLIANCE

Penalties in terms of Chapter 9 of the Western Cape Bill on Planning and Development as published in the Extraordinary Provincial Gazette No 5183, 3 October 1997, are applicable for any action, which leads to damage to the natural environment.

In addition to the penalties in terms of the Act (NEMA), spot fines up to a maximum value of **R10 000 per offence** can be instituted at the discretion of the ECO for any breach or non-compliance in terms of the EMPr (**FINES ISSUED WILL INCREASE EXPONENTIALLY FOR REPEAT OFFENCES**).

In the event of damage being caused, the contractor will be responsible for the cost of clean-up, repair, or rehabilitation as necessary, as well as being liable for the fine.

A fund is to be established for the collection of fines and the spending of this fund is to be at the discretion of the ECO for environmental rehabilitation of the area.

14 CONCLUSION

This EMPr is binding on all contractors on site and constitutes Best Practice for construction activities and includes the NEMA Duty of Care aspects for the construction of the water and sanitation project (associated pipelines and sewage pump station) as these components does not currently trigger any listed activities itself in terms of NEMA EIA Regulations (2014, as amended). This EMPr have been updated with specific conditions required by the Environmental Authorisation (EA) – condition 11.



Legend

-  Erf 37
-  New 1ML Reservoir
-  Cadastral Boundaries

Locality Map - Leeu Gamka - 1ML Water Reservoir, Erf 37

Date: 31 July 2024
Project No: 1335
Drawn By: S. Delport



HilLand Environmental
Environmental Assessment Practitioners

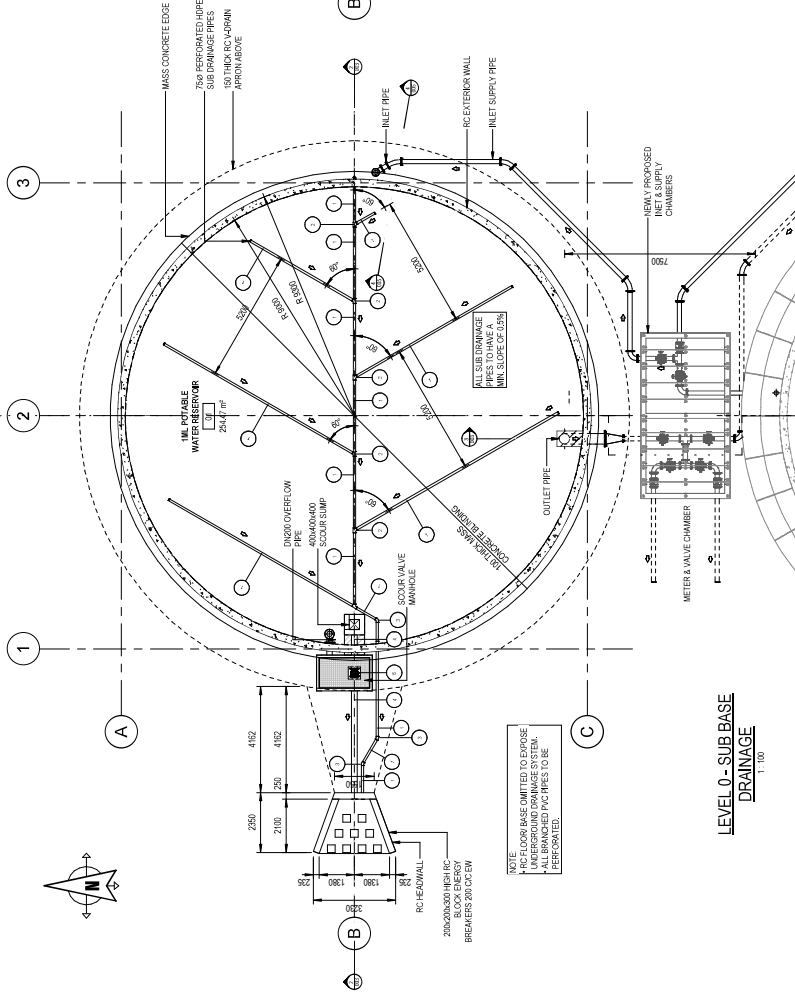
166 Mount View, Victoria Heights
P.O. Box 590, GEORGE, 6530
Western Cape, South Africa
Tel: +27 (0) 44 889 0229
Fax: +27 (0) 86 542 5248
Mobile: +27 (0) 82 5586 589
Email: info@hilland.co.za
www.hilland.co.za

Aerial Image - NGI 2020
Cadastral Image - Surveyor General 2019
SDP - SMEC South Africa

Projected Coordinate System: GS_1984_UTM_Zone_34S
Scale: 1:5,092

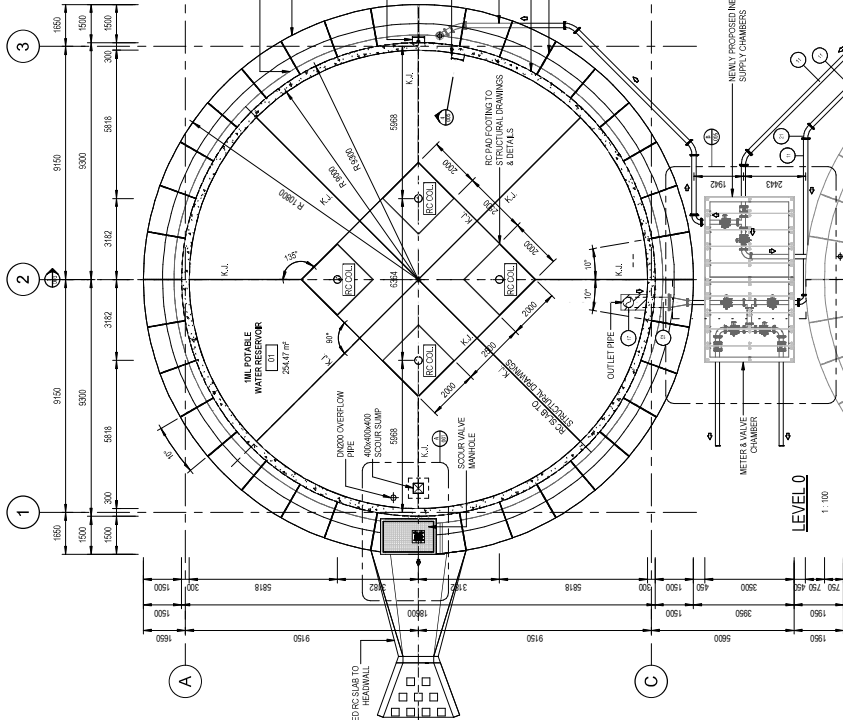
HilLand Environmental
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NOTE:
- REFER TO PIPE SCHEDULES FOR PIPE ASSEMBLY DETAIL.
- DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIL DRAWINGS FOR SETTING OUT DATA.
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- ELEMENTS TO BE CONFIRMED BY STRUCTURAL ENGINEERING DRAWINGS & SPECIFICATIONS.

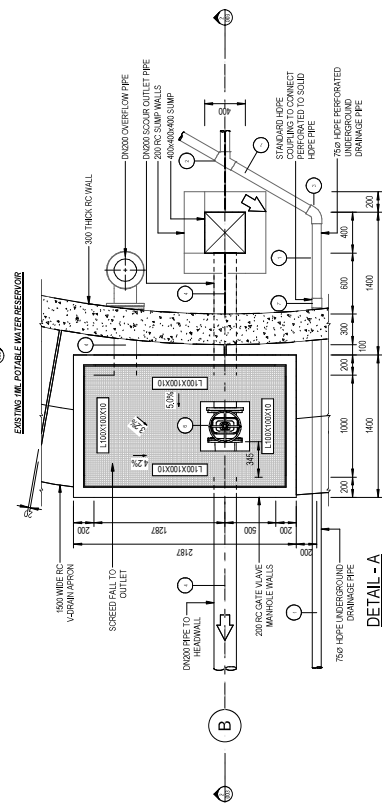


NOTE:
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- ALL BRANCHED PVC PIPES TO BE PERFORATED.

LEVEL 0 - SUB BASE DRAINAGE
1:100



EXISTING 1ML POTABLE WATER RESERVOIR
1:100



DETAIL - A
1:25

CONSULTANT:



287 Kent Avenue, Randburg
P.O. Box 1482, Johannesburg, South Africa
Website: www.smec.com
Tel: (011) 269-5000
Fax: (011) 269-5005

REVISIONS

REV.	DATE	DESCRIPTION	APPR.
A	01-05-2023	ISSUED FOR INFORMATION	

SCALES:

DESIGNED	CHECKED	DATE	APPROVED	DATE
N. FRANZ	T. KLEINMANS	01/02/2024		
DRAWN	G. WARDEN			
PR. INZ	N. FRANZ			
	T. KLEINMANS			

CLIENT:

Client Name: Price Albert Local Municipality
Client Address:
58 Church Street
Price Albert
Website: www.pa.gov.za
Tel: (023) 541 200
Fax: (023) 541 211



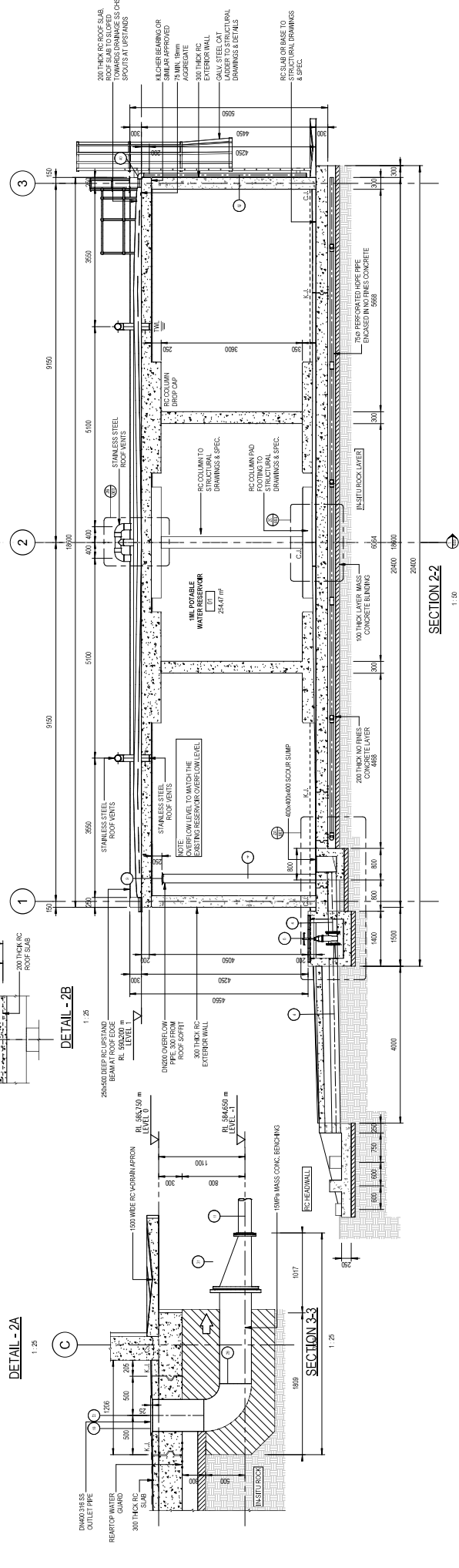
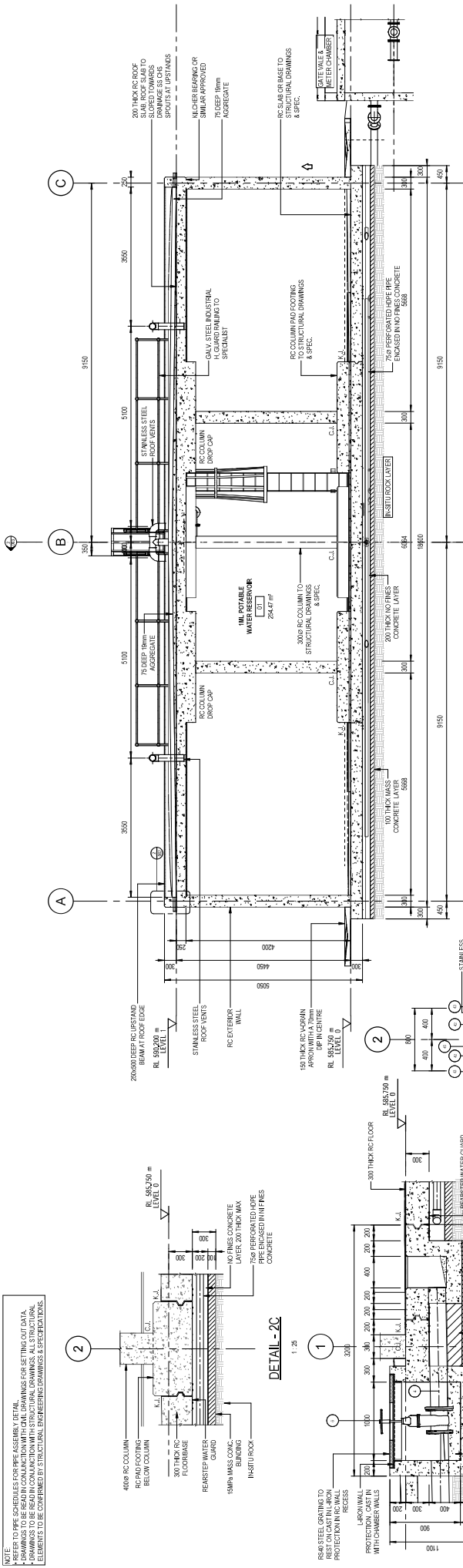
PROJECT DESCRIPTION

DRAWING TITLE
LEEU GAMKA: UPGRADING OF WATER & SANITATION INFRASTRUCTURE IN
NEWTON PARK & WELGEMOED-NORTH
1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN

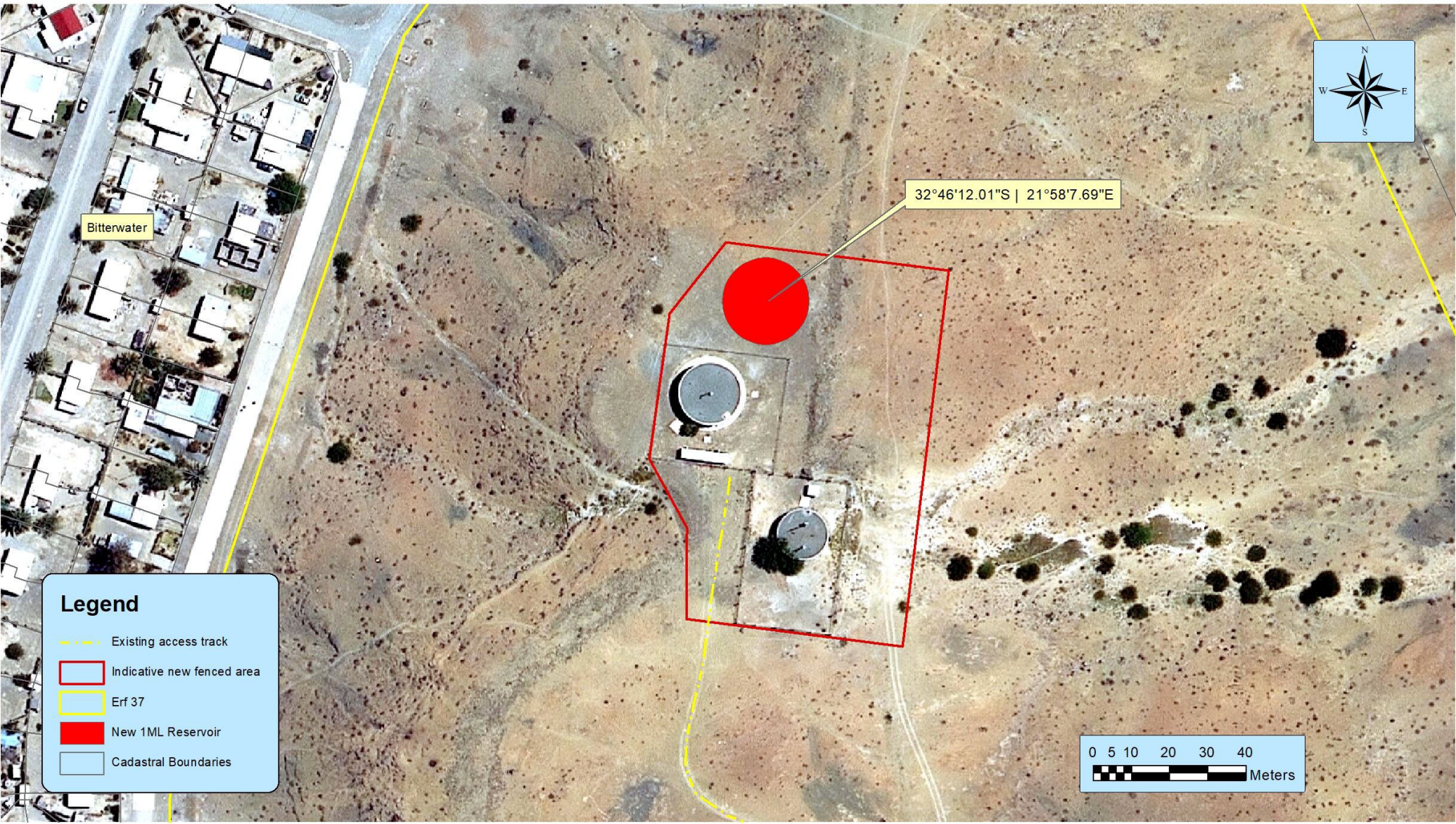
PROJECT No.	DRAWING NUMBER	SHEET NUMBER	REV No.
C3026	C3395-04/RES-001	16	A

NOTE:

- REFER TO PIPE SCHEDULES FOR PIPE ASSEMBLY DETAIL.
- DRAWINGS TO BE READ IN CONJUNCTION WITH CIVIL DRAWINGS FOR SETTING OUT DATA.
- DRAWINGS TO BE READ IN CONJUNCTION WITH STRUCTURAL DRAWINGS. ALL STRUCTURAL ELEMENTS TO BE CONFIRMED BY STRUCTURAL ENGINEERING DRAWINGS & SPECIFICATIONS.

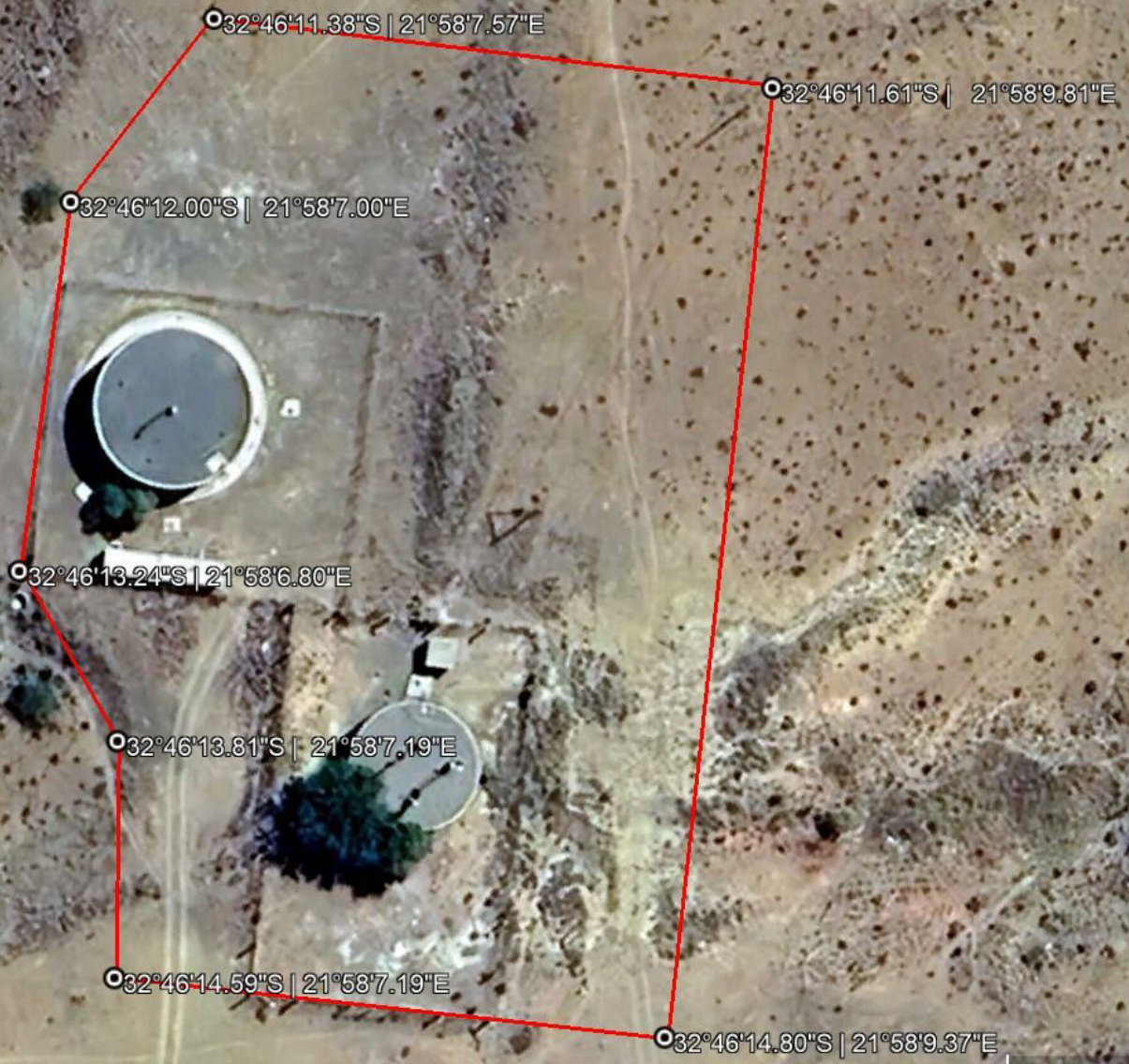


CONSULTANT:	 SMEC Member of the Surbana Jurong Group 257 North Avenue, Raffles City P.O. Box 1462, Singapore, South East Asia Website: www.smecc.com Tel: (611) 389-0600 Fax: (611) 886-4589	REVISIONS				SCALES:				CLIENT: Prince Albert Local Municipality				PROJECT DESCRIPTION					
		DESCRIPTION				ISSUED FOR INFORMATION				Client Address: 10000 Prince Albert								DRAWING TITLE	
		REV.	DATE			APPR.						DESIGNED	T. KLEYNHANS	CHECKED	T. KLEYNHANS		SEE	Leeu Gamka: Upgrading of Water & Sanitation Infrastructure in Newton Park & Welgemoed-North	
A	01-04-2023									DRAWN	G. WAREEN	CHECKED	N. FRANZ		A1	1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS			
											T. KLEYNHANS	PR. No				PROJECT No. C3026-CH-RES-003			
										APPROVED		DATE	01/02/24			DRAWING NUMBER 36			
																REV. No. A			



Site Layout Plan - Leeu Gamka - 1ML Water Reservoir, Erf 37		Date: 31 October 2024 Project No: 1335 Drawn By: S. Delport	Hilland Environmental Environmental Assessment Practitioners 166 Mountview, Victoria Heights P.O. Box 590, George, 6530 Western Cape, South Africa Tel: +27 (0) 44 889 0229 Mobile: +27 (0) 82 586 5859 E-mail: admin@hilland.co.za www.hilland.co.za
Aerial Image - NGI 2020 Cadastral Image - Surveyor General 2019 SDP - SMEC South Africa	Projected Coordinate System: GS_1984_UTM_Zone_34S Scale: 1:928	Hilland Environmental 166 Mountview Farm, Victoria Heights P.O.Box 590 - George, 6530 - Western Cape - South Africa www.hilland.co.za Mobile:+27 (0) 825586589 - Office: +27 (0) 44 8890229 - Fax: +27 (0)86 5425248	

Indicative new fenced area
Note: Coordinates are indicative and may vary slightly with final engineering design

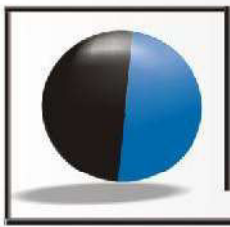


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HilLand Environmental

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BASIC RULES OF CONDUCT WITH REGARD TO ENVIRONMENTAL MANAGEMENT

The following list represents the basic Do's and Don'ts towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.

DO:

- Use the toilet facility provided
- Clear your work area of litter:
 - After every lunch or tea break;
 - At the end of the week;
 - Store litter in the bins provided for this purpose
- Confine work and storage of equipment to within the immediate work area.
- Use all safety equipment and comply with all safety procedures and regulations.
- Prevent contamination or pollution of streams and water channels.
- Report any injury of an animal.
- Prevent excessive dust and noise.
- Ensure that signage and other safety measures are in place and monitored.
- Dispose of your cigarette butt at the appropriate litter or cigarette butt bins – **NO** flicking or disposal of cigarette butts allowed anywhere on site

DO NOT:

- Remove or damage vegetation without direct instruction.
- **MAKE ANY FIRES** – no open flames or naked flames for heating or cooking shall be allowed unless at designated braai areas.
- Burn waste on any part of the site.
- Injure, trap, feed or harm any animals – this includes birds, frogs, snakes, lizards etc.
- Enter any fenced off or demarcated area.
- Speed or drive recklessly.
- Allow waste, litter, oils or foreign materials anywhere on site.
- Litter or leave food lying around.
- **ENTER NO-GO AREAS**

Notes:

1. **Should any animals such as tortoises or snakes be encountered do not harm them. They will move away by themselves.** The harming of any animal will result in disciplinary action. If there is a snake that poses a threat to humans, CapeNature must be contacted for the safe capture and removal of the snake.
2. Ensure that vehicles and machinery do not leak fuel or oils. Refuelling or maintenance must be done within the site camp area only.

IMPORTANT CONTACT NUMBERS:

CapeNature (Garden Route): 044 802 5300

HilLand Environmental: 044 889 0229 / 082 305 5097



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Fax: +27 (0) 86 542 5248
Mobile: + 27 (0) 82 5586 589
E-mail: info@hilland.co.za
www.hilland.co.za

DATE:

[illegible]

[illegible]

METHOD STATEMENT

CONTRACT:

DATE:

PROPOSED ACTIVITY (give brief description and reference number from CEMP)

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

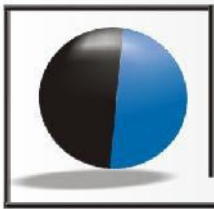
WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of works)

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

Start Date:

End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN? (provide enough detail, including annotated sketches and plans where possible)



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STEFAN DELPORT

1992/09/02

BSc Stellenbosch University
environmental@hilland.co.za

CURRICULUM VITAE (Abbreviated)

Qualifications:

- 2015 Bachelor of Science (BSc) Conservation Ecology and Entomology, Stellenbosch University
- 2021 Environmental Assessment Practitioners Association of South Africa (EAPASA) – 2019/1123

Career:

- February 2018 – present: Junior Environmental Consultant at Hilland Environmental Consultants, George
- November 2016 – June 2017: Guide and animal handler at The Ann van Dyk Cheetah Centre, Hartbeespoort.
- December 2015 – September 2016: Assistant Reserve and Day Centre Manager at Fathala Wildlife Reserve, Senegal, West Africa

Publication:

Several reports commissioned as part of Environmental Impact Assessment Processes, Public Participation and Environmental Management.

Fields of Expertise:

4 years' experience in Vegetation Sensitivity Mapping, Biodiversity Assessments, Environmental Impact Assessments, Environmental Impact Reports, Environmental Planning and Management, Rehabilitation, Environmental Management Plans & Frameworks, GIS Mapping, Visual Assessment and interpretation (Viewshed), Water Use Applications, Outeniqua Sensitive Coastal Area Applications, Environmental compliance monitoring and auditing, Public participation and facilitation.

Projects:

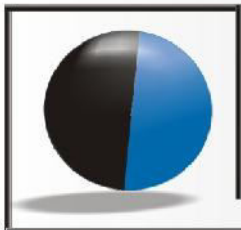
Leading and participating in projects in terms of NEMA on a variety of Development Projects within the Western Cape.

- Upgrading of the George Airport Precinct Access Road
- Expansion of Dagbreek Eiers Facility
- Closure and Capping of Unlawful Disposal site Concordia
- Construction of Reservoir and Pipeline for Uniondale
- Construction of Sewer line for Robberg Nature Reserve

ECO: Various projects including (but not limited to):

- ECO for installation of water pipeline between Hartenbos and Klein Brak WTW;
- ECO for Outeniqua Waste Water Treatment Works, previous phases;
- ECO for New Reservoir at George Water Treatment Works
- ECO for the Vaale Valleie Reservoir
- ECO for the construction and operational phase of residential developments in George, Hartenbos and Mossel Bay
- ECO for Routine Maintenance Projects between Mossel Bay, George, Plettenberg Bay and Oudtshoorn
- ECO for the construction of the New Vintage BP Filling Station, Hartenbos
- ECO for the operation of Doornfontein Sandmine
- ECO for the Modderug River Rehabilitation

Celebrating 30 years of environmental consulting



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www.hilland.co.za

CATHERINE AVIERINOS

1970/06/19

BSc(Hons) Rhodes University

cathy@hilland.co.za

CURRICULUM VITAE 2022

Qualifications:

- 1991 Bachelor of Science (BSc.) Botany & Zoology, Rhodes University
- 1992 Bachelor of Science Honours (BSc Hons) Botany, Rhodes University
- Various LLB courses (Unisa)

Career:

- 1992 – present Founder member of Hilland Associates cc and Hilland Environmental cc, Environmental Management Consultants
- 1993 – 1995 Part time Lecturer in Conservation Development, Saasveld Campus of the Port Elizabeth Technicon (now NMU).

Publications:

Over 1100 projects with all the associated documents commissioned as part of Environmental Impact Assessment Processes, Public Participation, Scoping, Environmental Management and specialist botanical reports.

Popular articles on Environmental Management.

Fields of Expertise:

30 years' experience in Vegetation Surveys, Vegetation Sensitivity Mapping, Biodiversity Assessments, Specialist Botanical Assessments, Environmental Impact Assessments, Basic Assessments, Environmental Impact Reports, Environmental Planning and Management, Rehabilitation, Environmental Management Plans & Frameworks, Strategic Conservation Planning with Multi Spectrum Participation, Environmental compliance monitoring and auditing, Public participation and facilitation, Water Use Applications, CARA applications, Environmental Rectification Assessments for S24G processes and Outeniqua Sensitive Coastal Area Applications.

Projects:

Leading and participating in over 1100 projects in terms of ECA and NEMA on a variety of Development Projects within Southern Africa.

Various Research Projects focusing on environmental management, planning, rehabilitation and GIS Mapping and interpretation (Viewshed and Visual Assessments)

Key projects –

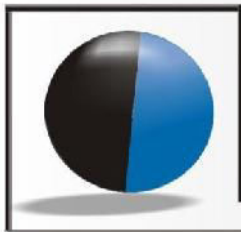
- Golf Estate Impact Assessments – Oubaai, Kingswood, Pezula (Sparrebosch)
- Resorts – Phantom Forest Eco Reserve, Cairnbrogie Camps, Botlierskop Reserve expansion, Orange River Rafting expansion.
- Nautilus Bay Coastal Reserve (Visual Impact Assessment)

Celebrating 30 years of environmental consulting

- Residential developments – Outeniquasbosch Wildlife Village, Kraaibosch Estates, Welgelegen Estate, Pezula, Fernwood, Paradise Coast Eco Estate

Conferences & Associations:

- Participant in various National Conferences.
- Member of the International Association of Impact Assessors South Africa (IAIASa).
- Founder chairperson of the Southern Cape branch of IAIAsa.
- Botanical Society of South Africa.
- South African Association of Botanists.
- Registration with EPASA (pending)
- PrSciNat (Re-registration pending as membership lapsed)



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INGE DELPORT

1993/09/23

BSc(Hons) Stellenbosch University

EAPASA – 2019/1689

environmental2@hilland.co.za

CURRICULUM VITAE (Abbreviated)

Qualifications:

- 2014 Bachelor of Science (BSc.) Biodiversity & Ecology, Stellenbosch University
- 2015 Bachelor of Science Honours (BSc Hons) Biodiversity & Ecology, Stellenbosch University
- 2021 Environmental Assessment Practitioners Association of South Africa (EAPASA) – 2019/1689

Career:

- | | |
|---------------------------------|--|
| June 2018 – present: | Junior Environmental Consultant at Hilland Environmental Consultants, George |
| November 2016 – June 2017: | Guide, animal handler and assistant reservationist at The Ann van Dyk Cheetah Centre, Hartbeespoort. |
| December 2015 – September 2016: | Assistant Lodge and Reserve Manager at Fathala Wildlife Reserve, Senegal, West Africa |

Publication:

Several reports commissioned as part of Environmental Impact Assessment Processes, Public Participation and Environmental Management.

Fields of Expertise:

4 years' experience in Vegetation Sensitivity Mapping, Biodiversity Assessments, Environmental Impact Assessments, Environmental Impact Reports, Environmental Planning and Management, Rehabilitation, Environmental Management Plans & Frameworks, Environmental compliance monitoring and auditing, Public participation and facilitation. Additionally, experience in several OSCAE permit-, NFA licence-, ORV application.

Projects:

Leading and participating in projects in terms of NEMA on a variety of Development Projects within the Southern Cape.



EIA REFERENCE NUMBER: 16/3/3/1/C2/7/0039/24
NEAS REFERENCE NUMBER: WCP/EIA/0001566/2024
DATE OF ISSUE: 02 April 2025

ENVIRONMENTAL AUTHORISATION

APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014: THE PROPOSED DEVELOPMENT OF A ONE (1) MEGALITRE POTABLE WATER RESERVOIR ON ERF 37, LEEU-GAMKA

With reference to your application for the abovementioned, find below the outcome with respect to this application.

A. DECISION

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the Environmental Impact Assessment ("EIA") Regulations, 2014, the Competent Authority herewith **grants Environmental Authorisation** to the applicant to undertake the listed activities specified in section B below in respect of **the preferred alternative**, described in the Final Basic Assessment Report ("FBAR") (Ref: LEU24/1335/09), dated January 2025, as prepared and submitted by the appointed environmental assessment practitioner ("EAP"), Mr. Stefan Delport (EAPASA No: 2019/1123).

The applicant for this Environmental Authorisation is required to comply with the conditions set out in Section F below.

B. DETAILS OF THE APPLICANT FOR THIS ENVIRONMENTAL AUTHORISATION

The Municipal Manager
% The Senior Manager: Technical Services
Prince Albert Municipality
33 Church Street
PRINCE ALBERT
6930

Care of: Mr. Ashley America
E-mail: ashley@pamun.gov.za
Tel.: 023 541 1036

The abovementioned applicant is the holder of this Environmental Authorisation (hereinafter referred to as "**the Holder**").

C. LIST OF ACTIVITY/IES AUTHORISED

Listed Activities	Activity/Project Description
Environmental Impact Assessment Regulations Listing Notice 3 of 2014, Government Notice No. 985 of 4 December 2014 (as amended)	
Activity Number: 2 Activity Description: The development of reservoirs, excluding dams, with a capacity of more than 250 cubic metres. i. Western Cape i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. In areas containing indigenous vegetation; or iii. Inside urban areas: (aa) Areas zoned for use as public open space; or (bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, or zoned for a conservation purpose.	The proposed entails the development of a new 1 000m³ reservoir on Erf 37 in Leeu-Gamka. The erf is currently zoned public open space and contains indigenous vegetation.
Activity Number: 12 Activity Description: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. i. Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004 ii. Within critical biodiversity areas identified in bioregional plans; iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or	The construction of the new 1Mℓ potable water reservoir and associated infrastructure (fenced in area, fence, pipe connections etc.) will require more than 300m² clearance of indigenous vegetation within an area currently zoned as Open Space.

- | | |
|---|--|
| v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister. | |
|---|--|

The abovementioned list is hereinafter referred to as "**the listed activities**".

The Holder is herein authorised to undertake the following alternative that includes the listed activities as it relates to the development:

The proposal entails the development of a new one megalitre (1Mℓ) reservoir on Erf 37 in Leeu-Gamka. The proposed reservoir will connect to the existing storage reservoir on Erf 37 and will be five metres (5m) in height and eighteen metres (18m) in diameter.

The proposed reservoir will be developed approximate to the following design plan drafted by SMEC Consulting Engineers:

- 1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN (Drawing No: C3326-CIV-RES-001; Sheet No: 1 of 6; Rev. A) dated 1 February 2023; and
- 1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS (Drawing No: C3326-CIV-RES-003; Sheet No: 3 of 6; Rev. A) dated 1 February 2023.

Please refer to Annexure 2 and Annexure 2A of this environmental authorisation for copies of the aforementioned plans.

D. SITE DESCRIPTION AND LOCATION

The proposed reservoir will be located on Erf 37 in Leeu-Gamka.

Coordinates of the proposed new reservoir:

Latitude (S)			Longitude (E)		
32°	46'	12.01"	21°	58'	7.69"

SG digit code:

C06100020000003700000

Refer to Annexure 1 of this Environmental Authorisation for the Locality Plan and Annexure 2 and 2A for the site development plans.

The above is hereinafter referred to as "**the site**".

E. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Mr. Stefan Delport

EAPASA NO: 2019/1123

E-mail: environmental@hilland.co.za

HillLand Environmental

PO Box 590

GEORGE

Tel: 044 889 0229

F. CONDITIONS OF AUTHORISATION

Scope and Validity Period of authorisation

1. This Environmental Authorisation is granted for the period from date of issue until **30 April 2030** (validity period), during which period the Holder must ensure that the—
 - (a) physical implementation of all the authorised listed activities is started with and concluded;
 - (b) construction monitoring and reporting requirements are undertaken and submitted to the Competent Authority in time to allow said authority to process such documents timeously;
 - (c) post construction rehabilitation and monitoring requirements is undertaken and completed; and
 - (d) environmental auditing requirements are complied with; and that such auditing is finalised in time to allow the competent authority to be able to process the environmental audits timeously within the specified validity period.

Failing which, this Environmental Authorisation shall lapse, unless the environmental authorisation is amended in accordance with the relevant process contemplated in the Environmental Impact Assessment Regulations promulgated under the National Environmental Management Act, 1998 (Act no. 107 of 1998).

2. The Holder is authorised to undertake the listed activities specified in Section B above in respect of the preferred alternative described in the FBAR, dated 31 October 2024, on the site as described in Section D above.

This Environmental Authorisation is for the implementation of the **preferred alternative** which entails:

The proposed development of a new one megalitre (1Ml) reservoir on Erf 37 in Leeu-Gamka. The proposed reservoir will connect to the existing storage reservoir on Erf 37 and will be five metres (5m) in height and eighteen metres (18m) in diameter.

The proposed reservoir will be developed approximate to the following design plans drafted by SMEC Consulting Engineers attached as Annexure 2 and Annexure 2A to this environmental authorisation, namely the:

- 1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN (Drawing No: C3326-CIV-RES-001; Sheet No: 1 of 6; Rev. A) dated 1 February 2023 ; and
- 1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS (Drawing No: C3326-CIV-RES-003; Sheet No: 3 of 6; Rev. A) dated 1 February 2023.

3. This Environmental Authorisation may only be implemented in accordance with the approved Environmental Management Programme ("EMPr").
4. The Holder shall be responsible for ensuring compliance with the conditions by any person acting on his/her behalf, including an agent, sub-contractor, employee or any person rendering a service to the Holder.
5. Any changes to, or deviations from the scope of the alternative described in section B above must be accepted or approved, in writing, by the Competent Authority before such changes or deviations may be implemented. In assessing whether to grant such acceptance/approval or not, the Competent Authority may request information in order to evaluate the significance and impacts of

such changes or deviations, and it may be necessary for the Holder to apply for further authorisation in terms of the applicable legislation.

Notification and administration of appeal

6. The Holder must in writing, within 14 (fourteen) calendar days of the date of this decision—
 - 6.1. notify all registered Interested and Affected Parties ("I&APs") of –
 - (a) the decision reached on the application;
 - (b) the reasons for the decision as included in Annexure 3;
 - (c) the date of the decision; and
 - (d) the date when the decision was issued.
 - 6.2. draw the attention of all registered I&APs to the fact that an appeal may be lodged against the decision in terms of the National Appeal Regulations, 2025 detailed in Section H below;
 - 6.3. draw the attention of all registered I&APs to the manner in which they may access the decision;
 - 6.4. provide the registered I&APs with the:
 - (a) name of the Holder (entity) of this Environmental Authorisation,
 - (b) name of the responsible person for this Environmental Authorisation,
 - (c) postal address of the Holder,
 - (d) telephonic and fax details of the Holder,
 - (e) e-mail address, if any, of the Holder,
 - (f) contact details (postal and/or physical address, contact number, facsimile and e-mail address) of the decision-maker and all registered I&APs in the event that an appeal is lodged in terms of the National Appeals Regulations, 2025.
 - 6.5. The listed activities, including site preparation, must not commence within 20 (twenty) calendar days from the date the holder notifies the registered I&APs of this decision.
 - 6.6. In the event that an appeal is lodged with the Appeal Authority, the effect of this Environmental Authorisation is suspended until the appeal is decided *i.e.*, the listed activities, including site preparation, must not commence until the appeal is decided.

Written notice to the Competent Authority

7. Seven calendar days' notice, in writing, must be given to the Competent Authority before commencement of any activities on site.
 - 7.1. The notice must make clear reference to the site details and EIA Reference number given above.
 - 7.2. The notice must also include proof of compliance with the following conditions described herein:
Condition no.: 6 and 13
8. Seven calendar days' notice, in writing, must be given to the Competent Authority on completion of the construction activities.
9. The Holder must notify the competent authority if the non-operational phase (construction activities and rehabilitation measures) has been abandoned prior to completion thereof, or if the construction activities and rehabilitation process will be placed on hold for a period of six (6) months or longer.

The competent authority must be notified in writing—

 - 9.1. within 30-calendar days of the cessation of the activities on site; and
 - 9.2. seven calendar days' notice, must be given prior to any activities continuing on site again.

Management of activity/activities

10. The Environmental Management Programme ("EMPr") submitted as part of the application for Environmental Authorisation is herewith **approved**.
11. The EMPr must be updated to incorporate all the conditions contained in this Environmental Authorisation and all those measures for the avoidance, management, mitigation, monitoring and reporting as identified in this Environmental Authorisation additional to those contained in the approved EMPr.

The updated EMPr must be re-submitted to the Competent Authority prior to commencement of the construction activities.

12. The approved EMPr (including the additional measures for the avoidance, management, mitigation, monitoring and reporting identified in the Environmental Authorisation) must be included in all contract documentation for all phases of implementation.

Monitoring

13. The Holder must appoint a suitably experienced environmental control officer ("ECO"), for the duration of the construction and rehabilitation phases of implementation contained herein.
14. The ECO must–
 - 14.1. be appointed prior to commencement of any works (i.e., demarcation of the remaining natural area, relocation of bulbs; and disturbance, cutting and / or damage to protected flora species);
 - 14.2. conduct site inspections;
 - 14.3. ensure compliance with the EMPr and the conditions contained herein;
 - 14.4. keep record of all activities on the site; problems identified; transgressions noted, and a task schedule of tasks undertaken by the ECO;
 - 14.5. remain employed until all development activities are concluded, and the post construction rehabilitation and monitoring requirements are finalised.
 - 14.6. submit ECO Reports to the Competent Authority as per the frequency indicated in the EMPr.
15. A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised activities and be made available to anyone on request, and where the Holder has website, such documents must be made available on such publicly accessible website.
16. Access to the site (referred to in Section D) must be granted, and the environmental reports mentioned above must be produced, to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

Environmental Auditing

17. The Holder must, for the period during which the environmental authorisation and EMPr remain valid, ensure that compliance with the conditions of the environmental authorisation and the EMPr, is audited.

18. The frequency of auditing of compliance with the conditions of the environmental authorisation and of compliance with the EMPr, must adhere to the following programme:

18.1. During the non-operational phase (construction phase) the Holder must submit an Environmental Audit Report to the Competent Authority within **three (3) months** of completion of the construction phase.

Note: Failure to complete the auditing requirements at least three months prior to expiry of the validity period of the environmental authorisation may result in the Holder not being able to comply with all the environmental auditing and reporting requirements.

19. The Environmental Audit Report, must –

19.1. be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise. Such person may not be the ECO or EAP who conducted the EIA process;

19.2. provide verifiable findings, in a structured and systematic manner, on–

- (a) the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
- (b) the ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.

19.3. identify and assess any new impacts and risks as a result of undertaking the activity;

19.4. evaluate the effectiveness of the EMPr;

19.5. identify shortcomings in the EMPr;

19.6. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;

19.7. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;

19.8. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation;

19.9. include a photographic record of the site applicable to the audit; and

19.10. be informed by the ECO reports.

20. The Holder must, within 7 calendar days of the submission of the audit report to the Competent Authority, notify all potential and registered I&APs of the submission and make the report available to anyone on request and on a publicly accessible website (if applicable).

Specific Conditions

21. Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from Heritage Western Cape. Heritage remains may only be disturbed by a suitably qualified heritage specialist working under a directive from the relevant Heritage Resources Authority.

Heritage remains include: meteorites, archaeological and/or paleontological remains (including fossil shells and trace fossils); coins; indigenous and/or colonial ceramics; any articles of value or antiquity; marine shell heaps; stone artefacts and bone remains; structures and other built features with heritage significance; rock art and rock engravings; shipwrecks; and/or graves or unmarked human burials including grave goods and/or associated burial material.

G. GENERAL MATTERS

1. Notwithstanding this Environmental Authorisation, the Holder must comply with any other statutory requirements that may be applicable when undertaking the listed activity.

Amendment of Environmental Authorisation and EMPr

2. If the Holder does not start with the listed activities and exceed the thresholds of the listed activities within the period referred to in Section F, this Environmental Authorisation shall lapse for those activities, and a new application for Environmental Authorisation must be submitted to the relevant Competent Authority.

If the Holder wishes to extend a validity period specified in the Environmental Authorisation, an application for amendment in this regard must be made to the relevant Competent Authority prior to the expiry date of such a period.

Note:

- (a) Failure to lodge an application for amendment prior to the expiry of the validity period of the Environmental Authorisation will result in the lapsing of the Environmental Authorisation.
 - (b) It is an offence in terms of Section 49A(1)(a) of NEMA for a person to commence with a listed activity if the competent authority has not granted an Environmental Authorisation for the undertaking of the activity.
3. The Holder is required to notify the Competent Authority where any detail with respect to the Environmental Authorisation must be amended, added, substituted, corrected, removed or updated.

In assessing whether to amend or correct the EA, the Competent Authority may request information to evaluate the significance and impacts of such changes or deviations, and it may be necessary for the Holder to apply for further authorisation in terms of the applicable legislation.

The onus is on the Holder to verify whether such changes to the environmental authorisation must be approved in writing by the relevant competent authority prior to the implementation thereof.

Note: An environmental authorisation may be amended or replaced without following a procedural requirement contained in the Regulations if the purpose is to correct an error and the correction does not change the rights and duties of any person materially

4. The manner and frequency for updating the EMPr is as follows:
 - (a) Any further amendments to the EMPr, other than those mentioned above, must be approved in writing by the relevant competent authority.
 - (b) An application for amendment to the EMPr must be submitted to the Competent Authority if any amendments are to be made to the impact management outcomes of the EMPr. Such amendment(s) may only be implemented once the amended EMPr has been approved by the competent authority.

The onus is however on the Holder to confirm the legislative process requirements for the above scenarios at that time.

5. Where an amendment to the impact management outcomes of an EMPr is required before an environmental audit is required in terms of the environmental authorisation, an EMPr may be amended on application by the Holder of the environmental authorisation.

Compliance with Environmental Authorisation and EMPr

6. Non-compliance with a condition of this environmental authorisation or EMPr is an offence in terms of Section 49A(1)(c) of the National Environmental Management Act, 1998 (Act no. 107 of 1998, as amended).
7. This Environmental Authorisation is subject to compliance with all the peremptory conditions (6 and 13). Failure to comply with all the peremptory conditions prior to the physical implementation of the activities (including site preparation) will render the entire EA null and void. Such physical activities shall be regarded to fall outside the scope of the Environmental Authorisation and shall be viewed as an offence in terms of Section 49A(1)(a) of NEMA.
8. In the event that the Environmental Authorisation should lapse, it is an offence in terms of Section 49A(1)(a) of NEMA for a person to commence with a listed activity, unless the competent authority has granted an Environmental Authorisation for the undertaking of the activity.
9. Offences in terms of the NEMA and the Environmental Impact Assessment Regulations, 2014, will render the offender liable for criminal prosecution.

H. APPEALS

1. An appellant (if the holder of the decision) must, within 20 (twenty) calendar days from the date the notification of the decision was sent to the holder by the Competent Authority –
 - 1.1. Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations, 2025 to the Appeal Administrator;
 - 1.2. Submit a copy of the appeal to any registered I&APs, any Organ of State with interest in the matter; and
 - 1.3. Submit a copy of the appeal to the decision-maker (i.e., the Competent Authority that issued the decision) at:
Gavin.Benjamin@westerncape.gov.za; and copied to
DEADPEIAAdmin.George@westerncape.gov.za
2. An appellant (if NOT the holder of the decision) must, within 20 (twenty) calendar days from the date the holder of the decision sent notification of the decision to the registered I&APs–
 - 2.1. Submit an appeal in accordance with Regulation 4 of the National Appeal Regulations, 2025 to the Appeal Administrator; and
 - 2.2. Submit a copy of the appeal to the holder of the decision.
3. The holder of the decision (if not the appellant), the decision-maker that issued the decision, the registered I&AP and the Organ of State must submit their responding statements, if any, to the appeal authority and the appellant within 20 (twenty) calendar days from the date of receipt of the appeal submission.
4. The appeal and the responding statement must be submitted to the Appeal Administrator at the address listed below:

By post: Western Cape Ministry of Local Government, Environmental Affairs and Development Planning
Private Bag X9186
CAPE TOWN
8000

By facsimile: (021) 483 4174; or
By hand: Appeal Administrator
Attention: Mr Marius Venter (Tel: 021 483 3721)
Room 809
8th Floor Utilitas Building, 1 Dorp Street, Cape Town, 8001

Note: For purposes of electronic database management, you are also requested to submit electronic copies (Microsoft Word format) of the appeal, responding statement and any supporting documents to the Appeal Authority to the address listed above and/ or via e-mail to DEADP.Appeals@westerncape.gov.za.

5. A prescribed appeal form as well as assistance regarding the appeal processes is obtainable from the Appeal Administrator at: Tel. (021) 483 3721, E-mail DEADP.Appeals@westerncape.gov.za or URL: <https://d7.westerncape.gov.za/eadp/resource-library/forms>.

I. DISCLAIMER

The Western Cape Government, the Local Authority, committees or any other public authority or organisation appointed in terms of the conditions of this Environmental Authorisation shall not be responsible for any damages or losses suffered by the Holder, developer or his/her successor in any instance where construction or operation subsequent to construction is temporarily or permanently stopped for reasons of non-compliance with the conditions as set out herein or any other subsequent document or legal action emanating from this decision.

Your interest in the future of our environment is appreciated.

Yours faithfully

Gavin Benjamin  Digitally signed by Gavin Benjamin
Date: 2025.04.02 13:31:49 +02'00'

DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 3)

WESTERN CAPE GOVERNMENT: DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

DATE OF DECISION: 02 APRIL 2025

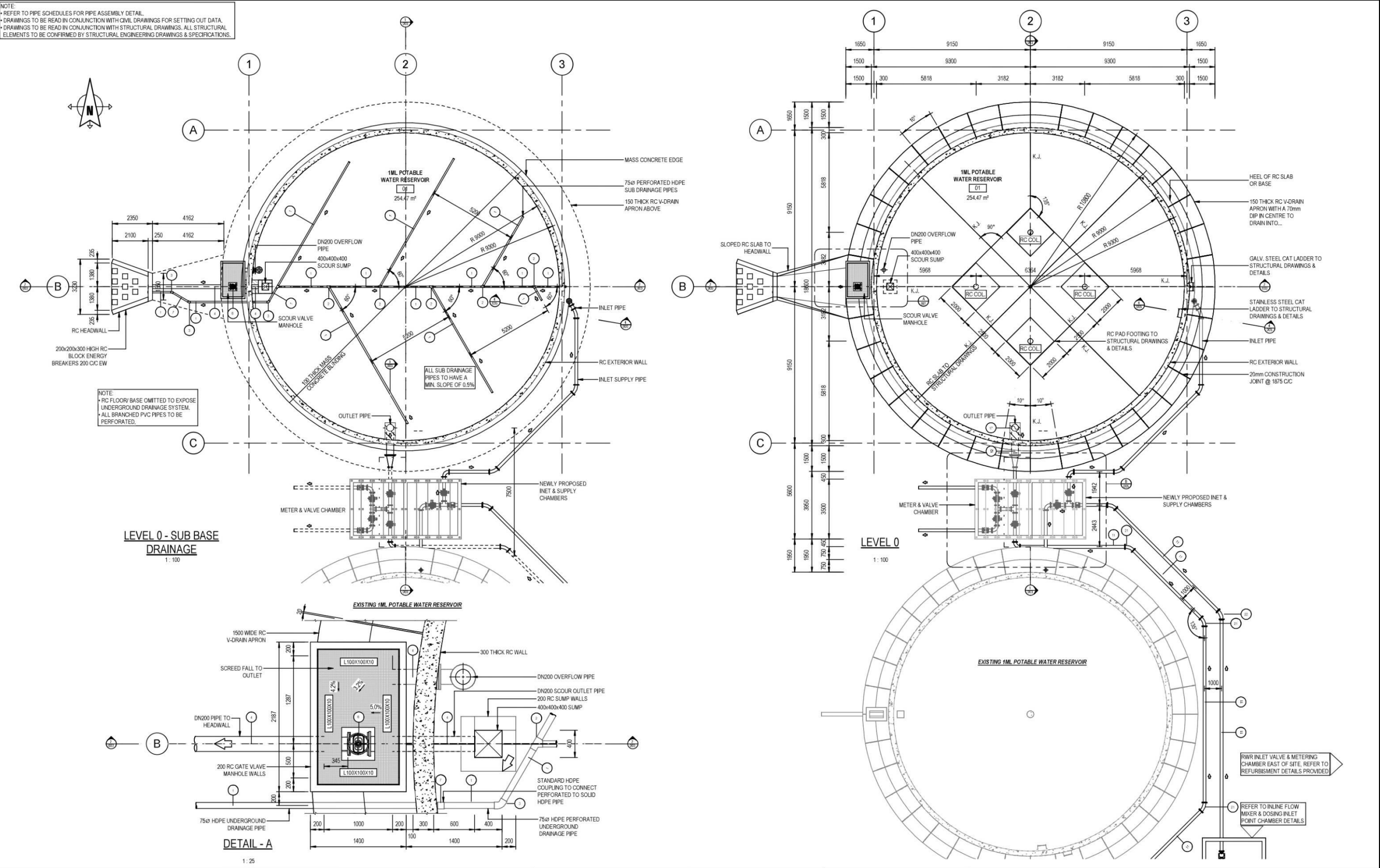
FOR OFFICIAL USE ONLY:

EIA REFERENCE NUMBER: 16/3/3/1/C2/7/0039/24
NEAS REFERENCE NUMBER: WCP/EIA/0001566/2024

ANNEXURE 1: LOCALITY MAP

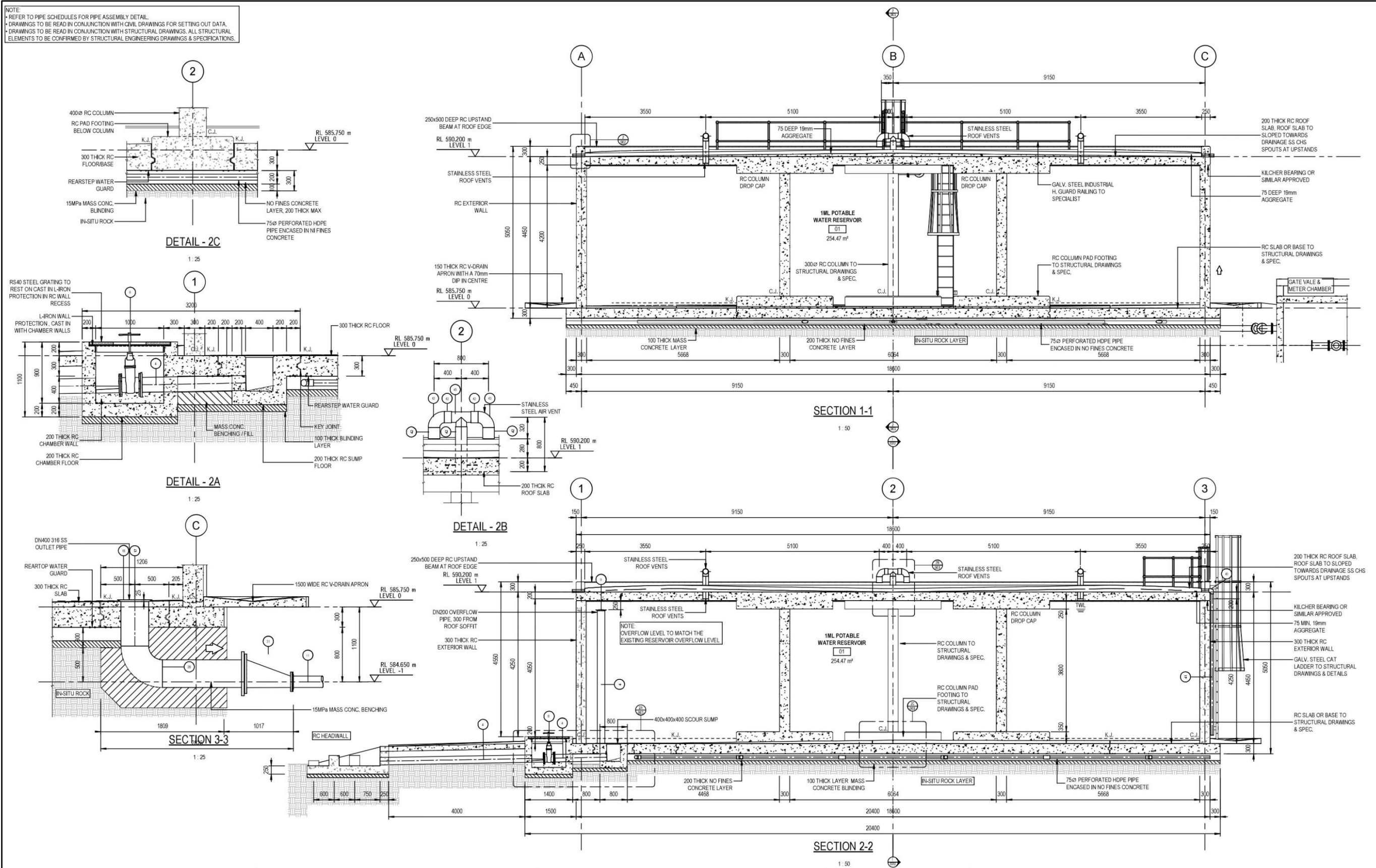


ANNEXURE 2: 1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN (DRAWING NO: C3326-CIV-RES-001; SHEET NO: 1 OF 6; REV. A) DATED 1 FEBRUARY 2023



CONSULTANT:		REVISIONS		SCALES:		CLIENT:		PROJECT DESCRIPTION	
267 Kent Avenue, Randburg P.O. Box 1462, Pinegowrie, South Africa, 2123 Website: www.smecc.com Tel: (011) 369-0600 Fax: (011) 886-4589		REV.	DATE	DESCRIPTION	APPR.	DESIGNED:	N. FRANZ	CHECKED:	T. KLEYNHANS
 Member of the Surbana Jurong Group		A	01-02-2023	ISSUED FOR INFORMATION		DRAWN:	G. MAREDI	CHECKED:	N. FRANZ
						APPROVED:	T. KLEYNHANS	PR. No:	
								DATE:	01/02/2024
				SIZE:		Client Name: Prince Albert Local Municipality		DRAWING TITLE	
				A1		Client address: 33 Church Street Prince Albert Website: pamun.gov.za Tel: (023) 541 1320 Fax: (023) 541 321		LEEU GAMKA: UPGRADING OF WATER & SANITATION INFRASTRUCTURE IN NEWTON PARK & WELGEMOED- NORTH 1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN	
PROJECT No.	C3326	DRAWING NUMBER	C3326-CIV-RES-001	SHEET NUMBER	1/6	REV No.	A		

ANNEXURE 2A: 1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS (DRAWING NO: C3326-CIV-RES-003; SHEET NO: 3 OF 6; REV. A) DATED 1 FEBRUARY 2023



CONSULTANT: 267 Kent Avenue, Randburg P.O. Box 1462, Pinegowrie, South Africa 2123 Website: /www.smec.com Tel: (011) 369-0600 Fax: (011) 886-4589	REVISIONS			SCALES:		CLIENT: Client Name: Prince Albert Local Municipality Client address: 33 Church Street Prince Albert Website: pamun.gov.za Tel: (023) 541 1320 Fax: (023) 541 321	PROJECT DESCRIPTION		
	REV.	DATE	DESCRIPTION	APPR.	DESIGNED: N. FRANZ	CHECKED: T. KLEYNHANS	DRAWING TITLE LEEUE GAMKA: UPGRADING OF WATER & SANITATION INFRASTRUCTURE IN NEWTON PARK & WELGEMOED- NORTH 1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS	PROJECT No.	C3326
	A	01-02-2023	ISSUED FOR INFORMATION		DRAWN: G. MAREDI	CHECKED: N. FRANZ			
Member of the Surbana Jurong Group					APPROVED: T. KLEYNHANS	PR. No:		DRAWING NUMBER	C3326-CIV-RES-003
					DATE: 01/22/24			SHEET NUMBER	3/6
								REV No.	A

ANNEXURE 3: REASONS FOR THE DECISION

In reaching its decision, the Competent Authority considered, inter alia, the following:

- a) The information contained in the Application Form, received on 31 October 2024, the Basic Assessment Report (FBAR) and EMPr submitted together with the FBAR on 7 January 2025;
- b) Relevant information contained in the Departmental information base, including the Guidelines on Public Participation, Alternatives (dated March 2013);
- c) The objectives and requirements of relevant legislation, policies and guidelines, including section 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998);
- d) The comments received from I&APs and responses to these, included in the FBAR submitted on 7 January 2025;
- e) The balancing of negative and positive impacts and proposed mitigation measures; and
- f) Appropriate information was made available in the report to understand the environmental and spatial context.
- g) No site visits were conducted during the course of this application process. The Competent Authority had sufficient information before it to make an informed decision without conducting a site visit.

All information presented to the Competent Authority was taken into account in the consideration of the application for Environmental Authorisation. A summary of the issues that were considered to be the most significant for the decision is set out below.

1. Other relevant legislative considerations

1.1 Section 28 of NEMA: Duty of Care

According to the information provided by the applicant, the proposed new 1Mℓ forms part of a larger project which also includes the upgrading of the water and sewage reticulation infrastructure. It has been reported that these upgrades do not trigger listed activities in terms of the Environmental Impact Assessment Regulations, 2014 ("EIA Regulations, 2014") (Government Notice No. R. 982 of 4 December 2014, as amended). Therefore, the applicant is reminded of their general duty of care toward the environment, as required in terms of section 28 of NEMA, namely:

"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 authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment".

2. Public Participation

2.1 The public participation process included:

- 2.1.1 identification of and engagement with interested and affected parties (I&APs) including organs of state which have jurisdiction in respect of the activity to which the application relates;
- 2.1.2 fixing notice boards at three locations in proximity to the site on 3 November 2024 for the commenting on the Draft BAR from 7 November to 9 December 2024;

- 2.1.3 giving written notice to the owners and occupiers of land adjacent to the site and any alternative site where the listed activities are to be undertaken, the municipality and ward councillor, and the various organs of state having jurisdiction in respect of any aspect of the listed activities on 7 November 2024 regarding the availability of the DBAR;
- 2.1.4 the placing of newspaper advertisements in the "Oudtshoorn Courant" on 31 October 2024 for the availability of the Draft BAR; and
- 2.1.5 making the Draft Basic Assessment Report available to I&APs for public review and comment from 7 November to 9 December 2024. The report was made available at URL: <https://hilland.co.za/public-processes/leeu-gamka/>.

All the comments and issues raised by the respective *Organs of State and Interested and Affected Parties (I&APs)* that were captured in the Basic Assessment Report were responded to by the EAP. The Competent Authority is satisfied with the responses provided by the EAP to the organs of state and I&APs.

3. Alternatives

3.1 Design / layout alternative: preferred alternative

The applicant assessed only one design / layout alternative for the proposed new reservoir. The proposed development of a new one megalitre (1Mℓ) reservoir on Erf 37 in Leeu-Gamka. The proposed reservoir will connect to the existing storage reservoir on Erf 37 and will be five metres (5m) in height and eighteen metres (18m) in diameter.

The proposed reservoir will be developed approximate to the following design plan drafted by SMEC Consulting Engineers:

- 1ML POTABLE WATER RESERVOIR GROUND FLOOR PLAN & ROOF PLAN (Drawing No: C3326-CIV-RES-001; Sheet No: 1 of 6; Rev. A) dated 1 February 2023; and
- 1ML POTABLE WATER RESERVOIR SECTION 1-1, SECTION 2-2 & DETAILS (Drawing No: C3326-CIV-RES-003; Sheet No: 3 of 6; Rev. A) dated 1 February 2023.

This the preferred alternative due to the following:

- It will tie in with the existing 1Mℓ concrete reservoir located on Erf 37;
- It is located within an existing utilities node; and
- Loss to biodiversity will be minimal;

No other design alternatives, including alternative locations for the activity were investigated; however, the motivation for not considering such alternatives has been provided.

3.2 No-Go Alternative

This alternative entails that the proposed 1Mℓ will not be developed. According to the application this will have a negative socio-economic impact as it will result in no additional storage capacity and the current and future potable water demand of Leeu-Gamka will not be met. Therefore, this is not the applicant's preferred alternative.

4. Impact Assessment and Mitigation Measures

4.1 *Activity need and desirability*

According to the applicant the areas of Newton Park and Welgemoed North currently received untreated water from elevated steel tanks which are filled directly from boreholes. It is reported that the elevated tanks are in a poor condition and the supply pipelines are also not in a good

condition. In order to address the issue it is required that treated water is provided from the centralised Water Treatment Works ("WTW") located in close proximity to the existing 1Mℓ and proposed new 1Mℓ reservoirs. Additional storage capacity is required to service the communities of Newton Park and Welgemoed North, as well as the future potable water demand of these communities and the area of Bitterwater. The proposed new reservoir is also required to have 48 hours storage capacity for Leeu-Gamka, which requires the proposed additional 1Mℓ reservoir.

In light of the above, the decision-maker is satisfied that the applicant has adequately addressed the need and desirability for the proposed new reservoir.

4.2 Biodiversity aspects

A description of the biodiversity issues and risks that were identified during the environmental impact assessment process, as well as an assessment of the significance of each issue and risk, cumulative impacts of the proposed development and levels of acceptable change have been considered.

In this regard, a Terrestrial Biodiversity, Aquatic Biodiversity, Terrestrial Plant Species and Terrestrial Animal Species Assessment was undertaken to inform the application for environmental authorisation. According to the information available to this Department, the ecosystem is mapped as Gamka Karoo. According to the Revised National List of Ecosystems that are threatened and in need of protection (Government Notice No. 2747 of 18 November 2022), Gamka Karoo has a gazetted conservation status of Least Threatened. Furthermore, according to the Western Cape Biodiversity Spatial Plan (2017) as well as the newly Western Cape Biodiversity Spatial Plan (2023) adopted by the Provincial Minister of Local Government, Environmental Affairs and Development Planning on 13 December 2024, the area is mapped as Other Natural Area.

According to the findings of the assessment there is no natural habitat remaining within proximity of the existing reservoirs, which includes the footprint of the proposed reservoir and the associated infrastructure. It has been reported that only six plant species were recorded on site but none of the species are protected in terms of the National Environmental Management: Biodiversity Act, Act 10 of 2004, or listed as Species of Conservation Concern. It has also been reported that nearby vegetation has been heavily impacted by historical activities as well as trampling by people walking across and past the site and heavy grazing by domestic animals that wander the area. As such, there is no suitable habitat to support the animal species identified to occur at the site in the Screening Tool Report. Furthermore, it has been confirmed that there are no aquatic features on or in close proximity to the site.

In light of the above, the decision-maker is satisfied that the applicant has adequately considered and that no significant negative impacts are expected to occur as a result of the proposed development of the reservoir. Furthermore, the mitigation measures and recommendation included in the EMP must be implemented and adhered to.

4.3 Heritage / Archaeological Aspects

No significant impacts on heritage / archaeological resources are expected as a result of the proposed development of the 1Mℓ reservoir. According to correspondence from an official from the relevant Heritage Authority, Heritage Western Cape, the upgrading to the water network in Leeu-Gamka does not trigger Section 38 of the National Heritage Resources Act, Act 25 of 1999. The competent authority is satisfied that this aspect of the proposed development has been adequately addressed.

4.4 Other impacts

No other significant visual dust, noise and odour impacts have been identified.

5. Scope and Validity of the Environmental Authorisation

This environmental authorisation does not define specific operational aspects. The environmental authorisation's validity period has been granted for a period of ca. five (5) years, during which period the construction activities must commence and be concluded, including the post-construction rehabilitation and monitoring and submission of the final environmental audit reports for the construction phase. In light of the proposed implementation programme, the monitoring and post-construction rehabilitation can be adequately incorporated in the construction phase.

Where the activity has been commenced with, the EIA Regulations, 2014 allow that (upon application) the period for which the environmental authorisation is granted may be extended for a further period of 5-years.

6. National Environmental Management Act Principles

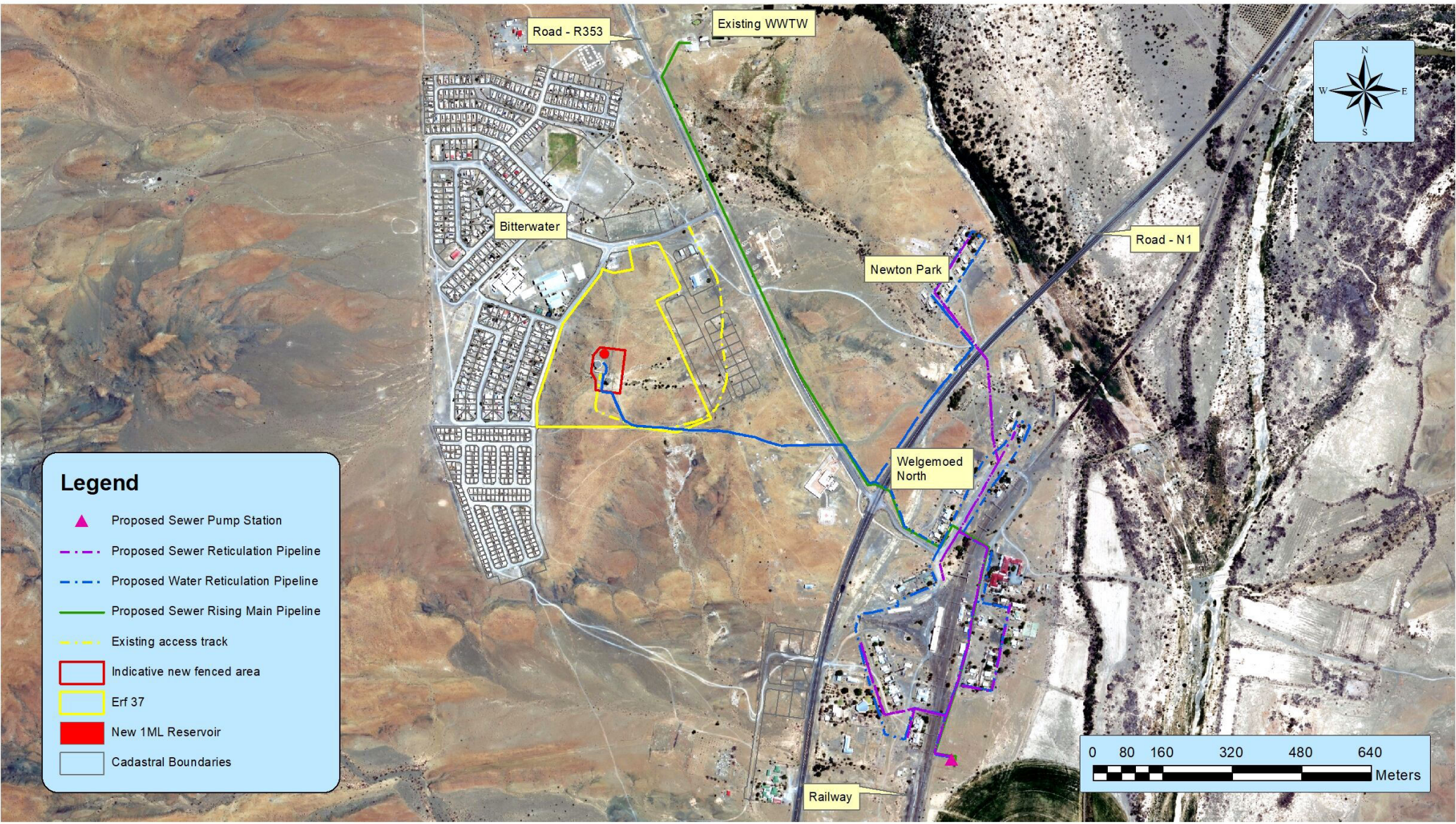
The National Environmental Management Principles (set out in section 2 of the NEMA, which apply to the actions of all organs of state, serve as guidelines by reference to which any organ of state must exercise any function when taking any decision, and which must guide the interpretation, administration and implementation of any other law concerned with the protection or management of the environment), *inter alia*, provides for:

- the effects of decisions on all aspects of the environment to be taken into account;
- the consideration, assessment and evaluation of the social, economic and environmental impacts of activities (disadvantages and benefits), and for decisions to be appropriate in the light of such consideration and assessment;
- development must be socially, environmentally and economically sustainable;
- equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.

7. Conclusion

In view of the above, the NEMA principles, compliance with the conditions stipulated in this Environmental Authorisation, and compliance with an approved EMPr, the Competent Authority is satisfied that, except for the activities that have been refused, the proposed listed activities, will not conflict with the general objectives of integrated environmental management stipulated in Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and that any potentially detrimental environmental impacts resulting from the listed activities can be mitigated to acceptable levels.

----- END -----



Site Layout Plan - NEMA Duty of Care
Leeu Gamka - Water and Sanitation Reticulation

Date: 6 January 2025
Project No: 1335
Drawn By: S. Delpoit



Hilland Environmental
Environmental Assessment Practitioners

166 Mountview Farm, Victoria Heights
P.O. Box 590, George, 6530
Western Cape, South Africa
Tel: +27 (0) 44 889 0229
Mobile: +27 (0) 82 558 6589
E-mail: admin@hilland.co.za
www.hilland.co.za

Aerial Image - NGI 2020
Cadastral Image - Surveyor General 2019
SDP - SMEC South Africa

Projected Coordinate System: GS_1984_UTM_Zone_34S
Scale: 1:8,147
NEMA Duty of Care

Hilland Environmental
166 Mountview Farm, Victoria Heights
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Method Statement – Horizontal Drilling

Memo No.	C3326-001	Date of Issue	15/10/2024
Subject	Horizontal Drilling	Discipline	Water Infrastructure
Project Name	Leeu Gamka W&S	Project No.	C3326
Author	Nicholas Franz		
Reviewed by	Theo Kleynhans	Approved by	James Hough
Prepared for	Prince Albert Local Municipality	Attention to	Ashley America
Attachments	None	Revision	01

1 Introduction

SMEC South Africa (Pty) Ltd were appointed by Prince Albert Local Municipality (PALM) to undertake the Design, Site Supervision and Contract Administration for the construction water and sanitation infrastructure in the town of Leeu Gamka in the Western Cape.

Part of the infrastructure to be constructed includes potable water pipes and sewerage pipes, which will cross two existing stormwater drain, two major roads and a railway line. The method of installation of pipes at all these crossings is Horizontal Directional Drilling (HDD).

2 Purpose

The purpose of this method statement is to outline the procedures for Horizontal Directional Drilling (HDD) to install pipes under a road, railway line, or existing stormwater drain. The method ensures minimal disruption and damage to the surface and safe installation of the pipeline.

3 Methodology

3.1 Preparatory Works

- Obtain necessary permits and approvals from local authorities and utility owners.
- Mark and verify the entry and exit points of the drill path.
- Ensure the required depth will be achieved – as per the construction drawings.
- Verify the location of existing services, to avoid damage.
- Excavate two pits, one on either side of the road, railway line or stormwater drain, one launch pit and one receiving pit (entry point and exit point).
- Set up the rig on stable ground at the designated entry point, ensuring proper alignment with the bore path.

3.2 Drilling Procedure

3.2.1 Pilot Bore:

- Begin drilling the pilot bore from the entry point, steering the drill head along the designed path using real-time monitoring and tracking technology (such as a walkover or wireline guidance system).
- Continuously monitor the bore path to ensure alignment under the road, railway, or stormwater drain.
- Adjust the drill head to follow the pre-planned trajectory while avoiding underground utilities and obstacles.

3.2.2 Reaming and Borehole Enlargement:

- Once the pilot bore is completed, withdraw the drill string and attach a reamer to enlarge the borehole to the required diameter for the pipe installation.
- The estimated reaming volumes for the various crossings are listed below:

Crossing Description	Sleeve Size	Sleeve Length	Sleeve Volume
160mm dia Sewer rising main stormwater crossing at SV1740, adjacent to MR353	250mm dia HDPE	±20m	0.98m ³
160mm dia water main pipe J50-J54 crossing stormwater drain at SV334	250mm dia HDPE	±20m	0.98m ³

- The reamer is pulled back through the borehole, while drilling fluid is used to stabilize the hole and remove cuttings.

3.3 Pipe Installation:

3.3.1 Pipe Sleeve Preparation:

- Prepare the pipe sleeve at the exit point. The pipe should be welded or fused into a continuous length and inspected for any defects. HDPE pipe sleeves will be used and will be larger than the pipeline that will convey the water or sewage.
- The pipe sleeve should be supported along its length to prevent sagging or damage during the pullback process.

3.3.2 Pipe Sleeve Pullback:

- Attach the pipe sleeve to the drill string using a swivel to prevent rotation.
- Gradually pull the pipe sleeve through the enlarged borehole from the exit to the entry point.

- Use drilling fluid to reduce friction and support the pipe during installation.

3.3.3 Pipeline Preparation

- Assemble the actual pipeline at the exit point. It should be prepared in a continuous length, similar to the pipe sleeve.
- Conduct any necessary welding, jointing, or testing before installation.

3.3.4 Pipeline Pull-In:

- Once the pipe sleeve is installed, insert the actual pipeline into the sleeve.
- Use a winch or similar equipment to gradually pull the pipeline through the sleeve, ensuring it is centred and undamaged.
- Use spacers or guides if necessary to prevent the pipeline from dragging against the inner walls of the sleeve.

3.4 Post-Installation Activities:

3.4.1 Inspection and Testing:

- Conduct a visual inspection of the pipe to ensure there are no defects.
- Perform pressure testing to verify the integrity of the installed pipe.

3.5 Site Restoration:

- Remove the HDD rig, equipment, and any excess materials from the site.
- Restore the entry and exit points and any disturbed areas to their original condition, ensuring that the road, railway, or stormwater drain are safe.

3.6 Health, Safety, and Environmental Considerations:

- Ensure all personnel are trained in HDD operations and site safety procedures.
- Implement traffic management systems where necessary to protect workers and the public.
- Use containment measures to prevent drilling fluids from contaminating sensitive areas.
- Conduct regular safety briefings and environmental monitoring during the operation.

4 Conclusion

This method ensures efficient and safe pipe installation using HDD while minimizing surface disruption and environmental impact.