
ENVIRONMENTAL MANAGEMENT PROGRAMME

PROPOSED TOWN DEVELOPMENT AT VERKYKERSKOP, FREE STATE

Applicant: Verkykerskop Nedersetting Ontwikkeling (Edms) Bpk
DETEA Ref No: EMS/15/12/10
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Town & Regional Planners,
Environmental & Development
Consultants

Physical Address: 9 Barnes Street,
Westdene, Bloemfontein, 9301
Postal Address: PO Box 20298,
Willows, 9320
Tel: 051 4471583, Fax: 051 4489839
E-mail: admin@mdagroup.co.za

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1. INTRODUCTION

1.1 Proposed project and associated construction activities

The Verkykerskop Nedersetting Ontwikkeling (Edms) Bpk proposes a town development at Verkykerskop.

The proposed development entails 256 residential erven (55.87 ha), of which six erven (24.62 ha) will be zoned Medium Residential and four erven (0.58 ha) will be zoned General Residential. The remaining land uses include erven zoned for Resort, Service Industry, Public Facility, Small Holding, Roads and Streets, and Utilities. There are also 32 erven proposed for Private Open Space (28.61 ha). Table 1 below summarizes the proposed land uses.

Table 1: Summary of Land Uses for the proposed development (LMV, 2012)

ZONING	NUMBER OF ERVEN	AREA (Ha)	%
Residential 1	25	2.29	1.91
Residential 2	28	7.99	6.66
Residential 3	24	3.94	3.29
Residential 4	56	9.55	7.96
Residential 5	113	6.90	5.75
Medium Residential 2	5	2.60	2.17
Medium Residential 3	1	22.02	18.36
General Residential	4	0.58	0.48
Business	14	1.08	0.90
Resort	1	1.47	1.23
Service Industry	7	12.94	10.79
Public Facility	2	0.33	0.28
Private Open Space	32	28.61	23.86
Small Holding	3	5.43	4.53
Roads and Streets		12.18	10.15
Utilities	8	2.02	1.68
TOTAL	323	119.93	100.00

The site for the proposed development comprises the following properties, either in ownership of the Verkykerskop Nedersetting Ontwikkeling (Edms) Bpk or the Verkykerskop Tourism cc:

- Farm Verkykerskop 1980
- Remainder of the Farm Verkykerskop C 1528
- Farm Annasdal 668
- Subdivision 15 of the Farm Verkykerskop A 1519
- Subdivision 2 of the Farm Zwartkoppie 1477

The Environmental Management Programme (EMPr), pertains to the construction of the components proposed town development, including its associated infrastructure.

Refer to the proposed site development plan in **Annexure B** of the EIA Report.

1.2 Objectives of the EMPr

The EMPr aims to fulfill the requirements as specified in Section 33 of Regulations No. R. 543 (18 June 2010) in terms of the National Environmental Management Act (Act 107 of 1998), with the following objectives:

- To identify, predict and evaluate actual and potential impacts on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management;
- To identify and employ the modes of environmental management best suited to ensuring that the activity is pursued in accordance with best environmental management practices;

- To be able to respond to unforeseen events;
- To provide feedback on compliance.

1.3 Implementation of the EMPr

- i) The project applicant, namely the Verkykerskop Nedersetting Ontwikkeling (Edms) Bpk is responsible for the implementation of the EMPr. All contractors should be supplied with a copy of the EMPr and should ensure that construction staff adhere to the mitigation measures.
- ii) The Conditions of the Environmental Authorisation and recommendations of the EMPr should be included in tenders and construction contracts.
- iii) The applicant should ensure that the contractors adhere to the recommendations of the EMPr and conditions of the Environmental Authorisation during construction.
- iv) An Environmental Control Officer (ECO) can be appointed separately or can be part of the contractor's team to monitor the construction phase. The ECO should be present for the site preparation and initial clearing activities to ensure correct demarcation of the site, facilitate environmental training of construction staff and supervise any flora relocation and faunal rescue activities that may need to take place.
- v) The contractor will also liaise with the ECO and communicate any feedback from inspections to the employees.

1.4 Environmental Awareness Plan

During site establishment and before construction activities commence, the ECO will inform all employees of the following:

- Point out the areas that are not to be impacted on and that require protection;
- Explain the possible impacts as listed in the EIA Report;
- Inform construction staff of the conditions of the Environmental Authorisation and recommendations of the EMPr;
- Explain risks and emergency procedures;
- Impose an understanding of pollution and degradation of the environment that may result from the construction work;
- Advise on the importance of containing the footprint of the construction site;
- and advise on the aims of rehabilitation, post construction.

The above should also be communicated to any new employees that join the team during the construction period.

2. PREPARATION OF THE EMPr

2.1 Person(s) who prepared the EMPr

- i) Prof. P.J. du Preez
- ii) Me. Marguerite Cronje

MDA
P.O. Box 20298
Willows
9320
Tel: 051 4471583
Fax: 051 4489839

2.2 Expertise of the person(s) who prepared the EMPr

i) Prof. P.J. du Preez

Key qualifications:

- Key competencies and experience include research in vegetation ecology & data management, biomonitoring, impact assessment, environmental management and environmental education.

Education:

- B. Sc. (Zoology and Botany), University of the Free State, South Africa, 1981
- B. Sc. Honnours (Plant ecology & Taxonomy), University of the Free State, South Africa, 1982
- Higher Education Diploma, University of the Free State, South Africa, 1983
- M.Sc. (Plant ecology), University of the Free State, South Africa, 1986
- Ph.D. (Plant ecology), University of the Free State, South Africa, 1991
-

ii) Me. Marguerite Cronje

Key qualifications:

- Key competencies and experience include environmental management and research in zoology.

Education:

- B.Sc. (Zoology), University of the Free State, South Africa, 2002
- B.Sc. Honnours (Zoology), University of the Free State, South Africa, 2003
- M.Sc. Diploma (Equine Science), University of Edinburgh, Scotland, UK, 2005
- Masters in Environmental Management, University of the Free State, South Africa, 2008

3. PLANNING PHASE / SITE PREPARATION

- i) Relevant water use and waste management licences pertaining to the town development and associated infrastructure, where relevant, should be applied for.
- ii) The development areas should be demarcated before construction commences to ensure that unnecessary destruction of vegetation is prevented.
- iii) The ECO should be present for the site preparation and initial clearing activities.
- iv) A copy of the approved EMPr must be kept on site.
- v) A search and rescue exercise to remove and transplant protected plant specimens that occur within the development footprint and that may be destroyed during the construction phase, must be conducted prior to construction activities.
- vi) Permits need to be obtained for the protected plant species that need to be translocated through the search and rescue exercise.
- vii) Drainage of water on the site, as well as the water outlet drain to bordering areas, should be properly designed according to the nature of the site so that the existing flow pattern is not disturbed but copied.
- viii) Proper sanitation, water and waste facilities should be in place for construction workers.
- ix) Washing and chemical toilet facilities must be provided on site during the construction phase. Chemical toilets should be cleaned regularly.
- x) Clean water should be made available daily to workers on site.

- xi) If an artifact or grave is uncovered during construction activities, work in the immediate vicinity is to be stopped until the project Archaeologist, namely Mr Cobus Dreyer or a representative of the National Museum in Bloemfontein has been consulted.

4. CONSTRUCTION PHASE: RECOMMENDED MANAGEMENT AND MITIGATION MEASURES

4.1 Handling and storage of materials

- i) All chemicals used during the development, including fuel for the construction vehicles, should be stored in proper storerooms or protected areas to prevent pollution.
- ii) Vehicles should be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere.
- iii) No construction material shall be stockpiled on the surrounding vegetation.
- iv) Where applicable, the contractors must ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary.
- v) Cement and concrete mixing should only take place within the construction site. No concrete may be mixed directly on the ground.
- vi) All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. should be reported to the Applicant and ECO.

4.2 Waste management

- i) Waste refers to all construction debris and domestic waste generated as a result of construction activities.
- ii) The contractor will be responsible for the removal of construction waste.
- iii) Suitable containers should be placed on site to collect all solid waste. These should be emptied regularly.
- iv) No littering is permitted. During the construction period the site shall be maintained in a neat and tidy condition.
- v) All solid waste produced should be disposed of at the most appropriate nearby licensed landfill site or as agreed to by the Phumelela Municipality.
- vi) No dumping, burning or burying of waste may take place on site.

4.3 Soil, erosion and vegetation management

- i) Construction activities should be limited to the site and construction vehicles should keep to constructed roads so that natural vegetation is not destroyed unnecessarily.
- ii) Removed topsoil is to be stockpiled in an area where it will not be disturbed by vehicles. One layer of bricks or stones is to be placed around the stockpiled topsoil to protect topsoil from washing away during rainstorms. Re-spreading is to be done to a maximum of 100 mm. All topsoil accumulated in the side drains shall be removed.
- iii) Drainage channels must be designed and installed so that no soil erosion can occur at the outlets.

- iv) No fires should be made directly on the soil. Provision should be made that no accidental fires are started.
- v) No firewood shall be collected on site or in surrounding areas.

4.4 Noise control

- i) Construction activities should be limited to normal working hours (08h00 – 17h00).

4.5 Safety and security

- i) The contractors must comply with the Occupational Health and Safety Act, National Building Regulations and any other national, regional or local regulations with regard to safety on site. Construction contracts must include safety and security measures for staff.
- ii) Fire extinguishers must be available on site and in the construction camp.

4.6 Site clean up and rehabilitation

- i) Temporary structures and office sites shall be dismantled and removed after completion of the construction phase of the project.
- ii) Erosion management is important. Rehabilitation of disturbed areas is important to help the recovery of the vegetation. Any barren soil patches should be paved or landscaped to avoid erosion during heavy thunder storms.
- iii) Grass, tree and shrub species occurring in the region can be used to rehabilitate disturbed areas.

- iv) As no indigenous tall trees occur in this region, taller tree species, for example, Beefwood, Bluegum or pine trees, can be planted to act as visual screens, where necessary (e.g. reservoirs). In order to plant these trees, permits from the Department of Forestry will need to be obtained.
- v) All waste, equipment, materials, etc. used during construction must be cleared from the site. The contractors must ensure that the site is cleared and rehabilitated to the satisfaction of the ECO.

5. OPERATIONAL PHASE

- i) An alien plant control and a monitoring programme must be developed and implemented.
- ii) Soil erosion occurrences should be attended to immediately.
- iii) A utility company will be responsible for the rendering waste services for the development.
- iv) A waste generation management plan will be implemented as part of the home owners association rules.
- v) Where possible, recyclable materials (glass and paper) should be separated from the general solid waste and taken to a recycling depot.

6. DECOMMISSIONING /CLOSURE

Should any components of the town development ever require decommissioning in the future, the applicant shall undertake the required actions, if any, as prescribed by the legislations at the time.

7. COMPLIANCE AND MONITORING

- i) An ECO should be appointed prior to the commencement of construction activities.
- ii) The ECO shall keep record of construction activities, problems identified and transgression noted.
- iii) The ECO can compile a monitoring report in the form of a checklist, on a monthly basis.
- vi) The ECO shall remain employed until all rehabilitation measures, as required due to construction damage, are completed and the site is ready for operation.
- vii) Records relating to monitoring must be kept at Verkykerskop and made available for inspection to any relevant competent authority.