DRAFT SCOPING REPORT DESCRIPTION

Applicant:
National Department of Public Works

Report title: Draft Scoping Report Verdrag SAPS Training Facility on the Farms Buffelskloof 452-KQ, Groenfontein 319-KQ and Buffelspoort 459-KQ.

Competent authority and reference number
National Department of Environmental Affairs [DEA]
NEAS Ref No: DEA/EIA/0001130/2012
Ref No: 14/12/16/3/3/3/38

Legal:
This Scoping Report has been prepared in terms of the requirements of Regulation 28 (1), (2) & (3) of the Environmental Impact Assessment Regulations of 18 June 2010 as per Government Notice R 543

Report compiled by:

Claudia Coetzee
Date:
16 July 2012

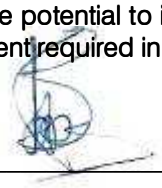
Reviewed and approved by:

Signature
Karen Botes

DECLARATION OF INDEPENDENCE

We declare that we act as independent environmental assessment practitioners for this application, with no affiliation with or vested financial interests in the proponent other than for work performed in terms of the requirements of the Environmental Impact Assessment Regulations 2010 and the National Environmental Management Act, 1998 (Act 107 of 1998).

We have no conflicting interests in the undertaking of this activity and have no interest in secondary developments resulting from the possible authorisation of this application. Remuneration for our professional services rendered is not dependent on approval by any decision making authority responsible for authorising this application. We undertake to disclose to the competent authority any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act, 1998 (Act 107 of 1998);



Signed

16/07/12
Date

DISTRIBUTION LIST

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9	Harriet Davis	**Endangered Wildlife Trust** Email: harrietd@ewt.org.za
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ABBREVIATIONS

BA Process	Basic Assessment Process
DEA:	Department of Environmental Affairs [Competent Authority]
DOPW:	Department of Public Works
DWA:	Department of Water Affairs
EAP:	Environmental Assessment Practitioner
EIA:	Environmental Impact Assessment
EIAR:	Environmental Impact Assessment Report
EMPr:	Environmental Management Programme
EWT:	Endangered Wildlife Trust
IAIA:	International Association of Impact Assessment
I&AP's:	Interested and/or Affected Parties
LEDET:	Limpopo Department of Economic Development, Environment & Tourism
NEMA:	National Environmental Management Act
NEMBA:	National Environmental Management: Biodiversity Act
NEMPAA:	National Environmental Management Protected Areas Act
NEMWA:	National Environmental Management: Waster Act
SAHRA:	South African Heritage Resources Agency
SACLAP:	South African Council for the Landscape Architectural Profession
SMP:	Stormwater Management Plan
TIA:	Traffic Impact Assessment
WMP:	Waste Management Plan
WWTW:	Waste Water Treatment Works
WULA:	Water Use License Application

GLOSSARY OF TERMS

Alien Vegetation: Alien vegetation is defined as undesirable plant growth which shall include, but not be limited to all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area.

Alien Species: A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

Alternatives: in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to – The property on which or location where it is proposed to undertake the activity; The type of activity to be undertaken; The design or layout of activity; The technology to be used in the activity; and The operational aspects of the activity.

Applicant: Any person who applies for an authorization to undertake an activity or to cause such activity to be undertaken as contemplated in the National Environmental Management Act (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2006.

Arable Potential: Land with soil, slope and climate components where the production of cultivated crops is economical and practical.

Buffer zone: is a collar of land that filters out inappropriate influences from surrounding activities as described by Shafer (1999) according to Pfab (2001:11), also known as edge effects, including the effects of invasive plant and animal species, physical damage and soil compaction caused by trampling and harvesting, abiotic habitat alterations and pollution. According to Pfab (2001:11), buffer zones can also provide more landscape needed for ecological processes, such as fire, as pointed out by Shafer (1999).

Construction Activity: A Construction Activity is any action taken by the Contractor, his subcontractors, suppliers or personnel during the construction process as defined in the South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 107 of 1998).

Critically Endangered: A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild, in the immediate future.

Ecology: The study of the inter relationships between organisms and their environments.

Environment: All physical, chemical and biological factors and conditions that influence an object and/or organism.

Environmental Impact: An Impact or Environmental Impact is the degree of change to the environment, whether desirable or undesirable, that will result from the effect of a Construction Activity within the limits that define the construction site. An Impact may be the direct or indirect consequence of a Construction Activity.

Environmental Impact Assessment: Assessment of the effects of a development on the environment.

Environmental Management Plan: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

Indigenous: means a species that occurs, or has historically occurred, naturally in a free state within the borders of South Africa. Species that have been introduced to South Africa as a result of human activity are excluded (South Africa (Republic) National Environmental Management: Biodiversity Act, 2004: Chapter 1).

Interested and Affected Party: any person, group of persons or organization interested in or affected by an activity contemplated in an application, or any organ of state that may have jurisdiction over any aspect of the activity

Road Reserve: The road reserve is a corridor of land, defined by co-ordinates and proclamation, within which the road, including access intersections or interchanges, is situated. A road reserve may, or may not, be bounded by a fence.

Road Width: For the purposes of the EMP, the Road Width is defined as the area within the Road Reserve i.e. fence line to fence line, but also includes all areas beyond the Road Reserve that are affected by the continuous presence of the road i.e. a reach of a water course.

Mitigate: The implementation of practical measures to reduce adverse impacts

Public Participation Process: is a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters

Record of Decision: A brief description of the proposed activity, the extent or quantities involved, the surface areas involved, the infra structural requirements and the implementation programme for which the authorization is issued

Red data plant species: are fauna and flora species that require environmental protection based on the World Conservation Union (IUCN) categories and criteria.

Soil Compaction: Mechanically increasing the density of the soil, vehicle passage or any other type of loading. Wet soils compact easier than moist or dry soils.

Species: means a kind of animal, plant or other organism that does not normally interbreed with individuals of another kind. The term “species” include any sub-species, cultivar, variety, geographic race, strain, hybrid or geographically separate population (South Africa [Republic] National Environmental Management: Biodiversity Act, 2004: Chapter 1).

The Contractor: the contractor as the developers agent on site, is bound by the ROD and EMP conditions through his/her contract with the developer, and is responsible for ensuring that conditions of the EMP and ROD are strictly adhered to at all times. The contractor must comply with all orders (whether verbal or written) given by the ECO, project manager or site agent in terms of the EMP.

The Developer: remains ultimately responsible for ensuring that the development is implemented according to the requirements of the EMP and the conditions of the Record of Decision (ROD) throughout all phases of the project.

The Environmental Control Officer (ECO): the ECO is appointed by the developer as an independent monitor of the implementation of the EMP i.e. independent of the developer and contractor.

The Environmental Liaison Officer (ELO): the Contractor shall submit to the Site Agent a nominated representative of the Contractor as an ELO to assist with day to day monitoring of the construction activities for the contract

Vegetation: is a collective word for plants. Vegetation can be regarded as the first link in any food chain.

Vulnerable: A taxon is 'Vulnerable' when it is not 'Critically Endangered' or 'Endangered' but is facing a high risk of extinction in the wild in the medium term future.

Watercourse: is "A river or spring; a natural channel in which water flows regularly or intermittently; a wetland, lake or dam into which, or from which, water flows; and any collection of water which the Minister may by notice in the Government Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks" (South Africa [Republic] National Water Act, 1998).

EXECUTIVE SUMMARY

1. PROPOSAL

The application entails the upgrade to and maintenance of certain infrastructure and other facilities at the Verdrag SAPS Training Facility situated between Thabazimbi and Modimolle within the Limpopo Province. Thabazimbi is about 35km to the west and Modimolle about 70km to the south east. The site is accessed from the P240 gravel road which leads to Alma in the east and to the D1485 intersection in the northwest toward Thabazimbi. The Verdrag Training Facility has been operation for over 20 years and offers advanced skills training to the members of the South African Police Force.

The application properties consist of the following Farm Portions:

- Portion 1 of the Farm Groenfontein 458-KQ [428,2660 ha];
- The Remaining extent of the Farm Groenfontein 458-KQ [1728,800 ha];
- Portion 1 of the Farm Buffelspoort 459-KQ [685,2256 ha];
- The Remaining extent of the Farm Buffelspoort 459-KQ [630,3804 ha];
- The Farm Buffelskloof 452-KQ [3994,4484 ha].

The following additional facilities and upgrades are being proposed as part of this application process Refer to ***Appendix 2*** for a copy of the proposed lay-out:

Existing Administration camp:

- Renovation and maintenance of existing structures;
- Construction of **new** residential units;
- Construction of **new** ammunition safe;
- **New** gravity feed sewer pipeline

New Alpha Camp [A Training Camp]

Construction of:

- Trainer's accommodation;
- Student accommodation;
- Lecture facilities;
- Recreation Facilities & Gym;
- Admin block;
- Tactical training area;
- Ablution facilities
- New gravity feed sewer line

Existing Bravo Camp [B Training Camp]

All existing structures to be demolished and replaced with similar facilities. Replacement structures include:

- Lecture facilities;
- Student accommodation;
- Trainer's accommodation;
- Recreation facilities & Gym;
- Tactical training area;
- Existing sewer pump line will be replaced

New Echo Camp [E Training Camp]

Construction of:

- Student accommodation;
- Trainers accommodation;
- Admin block;
- Recreational facilities and Gym;
- Ablution facilities;
- Lecture facilities;

- Shooting range

Existing Delta Camp [D Training Camp]
Construction of:
- Additional accommodation units;
- Lecture facilities;
- Admin block

Other
- New landing strip and admin building;
- New shooting range and admin block;
- New ammunition safe;
- Maintenance of existing wastewater treatment facility [Aerobic-Anaerobic Stabilisation Ponds];
- Upgrade and maintenance of existing stormwater management infrastructure including upgrade of stormwater outlets [detail to be confirmed];
- Upgrade and maintenance of existing road infrastructure [roads leading from P240 to training camps will be tarred];
- Upgrade and maintenance of existing water supply and reticulation[detail to be confirmed];
- Upgrade of existing sewerage reticulation infrastructure[replacement of old pipes, maintenance/replacement of existing sewerage pump station which is currently not working, embankments of the pond system require maintenance as trees are growing on it and it can cause the embankment to collapse once filled with water, maintenance of reed bed].

2. EIA REQUIREMENTS

Interdesign Landscape Architects (Pty) Ltd (ILA) has been commissioned by Metroplan Town and Regional Planners to undertake the appropriate environmental process [EIA Process] on behalf of the Applicant the ***Department of Public Works*** for the proposed construction of additional facilities and upgrades to the existing facilities and infrastructure at the Verdrag SAPS Training Facility near Thabazimbi.

The Environmental Impact Assessment (EIA) process followed is in compliance with the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations of 2010 (Government Notice No's R543, 544 and 546 of 2010). The proposed development involves 'listed activities', as defined by the NEMA, 1998. Listed activities are activities, which may have potentially detrimental impacts on the environment and therefore require environmental authorisation from the relevant authorising body.

The proposed development occurs in the Limpopo Province, but as the Applicant is a Government Department the National Department of Environmental Affairs [DEA] will be the responsible regulatory authority and the Limpopo Department of Economic Development, Environment and Tourism (LEDET) will be a key stakeholder who will also review and provide comment on the application. The final decision making powers rests with DEA.

The following activities apply to the proposed development;

- The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, grit, pebbles or rock of more than 5 cubic metres from a watercourse ***[GNR 544, Listing Notice 1, Item 18(i)]*** **Required for implementation of new and replacement of defunct pipelines within a watercourse, including stormwater outlets such as culverts**
- The expansion of facilities or infrastructure for the bulk transportation of water, sewerage or stormwater where (a) the facility or infrastructure is expanded by more than 1000 metres in length. ***[GNR 544, Listing Notice 1, Item 37(a)]*** **Required for the installation of additional pipelines to service new training camps.**
- The expansion of (ii) channels, (iii) bridges, (v) bulk stormwater outlet structures within a watercourse or within 32m of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the

development setback line ***[GNR 544, Listing Notice 1 Item 39(ii), (iii) ,(v)]*** **Required for stormwater management on site**

- The construction of a road wider than 4 metres with a reserve less than 13,5 metres in (a) Limpopo (ii) outside urban areas, in (cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority. ***[GNR 546,Listing Notice 3, Item 4 (a) (i)(cc)]*** **Required for the internal roads at new camp sites.**
- The construction of aircraft landing strips and runways 1,4 kilometres and shorter in (a) Limpopo (ii) outside urban areas in (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority. ***[GNR 546, Listing Notice 3, Item 8(a)(ii)(dd)]*** **Required for the clearance of a new landing strip.**
- The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation in Limpopo, (ii) outside urban areas in (cc) sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority. ***[GNR 546, Listing Notice 3, Item 13(c)(ii)(cc)]*** **Required for construction of all new structures including new shooting range.**
- Phased activities for all activities listed in this Schedule and as it applies to a specific geographical area, which commenced on or after the effective date of this Schedule, where any phase of the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold***.[GNR 546, Listing Notice 3, Item 26]***
- The expansion of reservoirs for bulk water supply where the capacity will be increased by more than 250 cubic metres in Limpopo, outside urban areas, in sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority***. [GNR 546, Listing Notice 3, Item 17(a)(i)(dd)]***. **Upon receipt of the preliminary engineering design report on 18 June 2012, it was confirmed that additional reservoir capacity was required. This activity is now included in the Scoping Report and the Application Form submitted to the DEA will be amended accordingly. It is hereby recorded that this listed activity was not included in the Legal Notice or Background Information Document which was made available during the initial public process.**

3. APPROACH

The EIA Process, as described in the Guideline Documents 3, 4 and 5 compiled by the Department of Environmental Affairs (DEA) 2006, as well as the IEM Guideline Series 5 & 7 Companion to the NEMA EIA Regulations, produced by the same Department are being utilised to inform this Scoping Process and the NEMA Process. As an integrated application has been registered with DEA both the expansion activities and the WWTW will be investigated through a full Environmental Impact Assessment Process in terms of the National Environmental Management Act, 1998 [Act 107 of 1998].

The objectives of the EIA process are as follows:

- To **identify issues**/ **concerns** that should be included into the scope of the Environmental Impact Assessment process;
- To **inform stakeholders** about the proposed project and provide them with an opportunity to raise their concerns that will contribute towards the EIA process; to establish/confirm the scope and contents of the Scoping and EIA Report and Basic Assessment Reports and to identify possible specialist studies to be conducted to address significant issues;
- To understand and thoroughly **document the issues/concerns and comments submitted raised by stakeholders** in such a way that delay due to misunderstanding will be prevented at all costs;
- To **assess the relevant biophysical environmental components** of the site to an appropriate level of detail. This includes the physical, biological, and socio-economic components;
- To **identify**/ **describe possible environmental issues** associated with the construction and operational phases of the training facilities and its associated infrastructure; and
- To **reflect all the required information**/ **findings** in a logical and systematic way in order to assist the DEA with the evaluation of the proposed activity in terms of the requirements of the National Environmental Act, 1998 (Act No. 107 of 1998) as amended.

The EIA process to be followed will furthermore:

- Be open and transparent and will be maintained throughout the entire lifecycle of the EIA-process; and
- Respect the democratic rights and obligations of the participants/stakeholders.

4. PUBLIC PARTICIPATION

Public Participation is the involvement of all parties who potentially have an interest in a development or project, or is affected by it. The aim of the public participation process is to facilitate and establish an effective communication forum, making it possible for Interested and/ or Affected Parties (I &AP's) to raise issues and/ or concerns. The principal objective of public participation is to inform and enrich decision-making. The approach followed during the public participation process is informed by the Guidelines for Public Participation, as described in DEA (2006) Guideline 4 and Chapter 6 of Government Notice R 543, 18 June 2010 [of the EIA Regulations].

The initial public announcement was made when the commencement of the EIA Process was confirmed in two local newspapers [Die Kwêvoël & Die Pos] on 4 May 2012. Interested and Affected Parties were invited to register in the process and to provide any preliminary comments on the proposal as set out in the Background Information Document which was distributed to surrounding property owners and other identified stakeholders and authorities. Comments up to date have been captured and a database of registered stakeholders is being maintained. Registered stakeholders will be afforded a 40 day comment period for the review and submission of comments on this Draft Scoping Report. Upon receipt of comments the Scoping Report will be finalised for submission to DEA.

5. POTENTIAL IMPACTS

The following potential impacts have been identified which are associated with the construction and operation phases of the proposed facility upgrades. The identification of these impacts have been informed by the specialist assessments conducted up to date as well as by preliminary comments received from stakeholders, professional judgement and past experience with similar projects.

CONSTRUCTION PHASE

Beneficial Impacts

- Skills development and creation of job opportunities; and
- Eradication of invaders and establishment of indigenous vegetation.

Adverse Impacts

- De-vegetation of area of construction due to construction of new roads, accommodation units, training facilities and installation of services could result in wind and water erosion, as well as dust generation;
- Poaching of fauna by construction team;
- Loss of wetland habitat, installation of services in riparian zones (cumulative impact);
- Impoundment of flows construction of additional roads (cumulative impact);
- Interception of subsurface flows installation of services (cumulative impact);
- Increased sedimentation (cumulative impact);
- Water quality deterioration (cumulative impact);
- Erosion risk from stormwater runoff as a result of vegetation clearance (cumulative impact);
- Impact on aesthetics of the area and genius loci (Sense of place);
- Noise emanating from construction & dust generation could impact on fauna;
- Heavy vehicle traffic increase that could impact negatively on safety and quality of existing roads and possible roadkill (cumulative impact);
- Crime may increase as a result of contract workers in the area;
- Stockpile areas for construction material, generation and disposal of building waste & liquids and vehicle maintenance could impact on ground water, surface water (rivers) and environment as a whole;
- Stockpile areas for construction material could pose threat to fauna (in terms of suffocation/poisoning etc);
- Possible damage / loss of subterranean artefacts;

- Removal of protected trees;
- Waste Management could impact on soil and ground water;
- Waste Management could pose threat to fauna;
- Sanitation (toilet facilities) could impact on soil and ground water (cumulative impact); and
- Unsupervised and misuse of fire on site could impact negatively on the environment.

OPERATIONAL PHASE

Beneficial Impacts

- Rehabilitation of disturbed areas;
- Installation of adequate stormwater management infrastructure which could reduce erosion risks and protect riparian habitat at outlet points;
- Upgrading and maintenance to existing sewerage and water infrastructure will reduce risk of environmental impacts such as sewerage leaks and water wastage due to defunct equipment;
- Skills development and long term job opportunities;
- Provision of additional facilities and improved quality facilities for SAPS training;

Adverse Impacts

- Increase of hard surface area i.e. increased stormwater runoff, which could impact on riparian zones in the form of erosion and habitat destruction and concentration of flows (cumulative impact);
- Loss of habitat for fauna, invertebrate and flora, impact on biodiversity;
- Waste generation could impact on capacity of landfill site (cumulative impact);
- Waste generation & waste management could impact on fauna and lead to possible contamination of soil, surface and groundwater;
- Increased traffic generation during operational phase and maintenance of the P240 required (cumulative impact);
- Increased light pollution;
- Increased noise pollution;
- Possible contamination of groundwater should the development and wastewater treatment facility not be managed properly (cumulative impact);
- Additional burden on electrical service provider (cumulative Impact)
- Roadkill due to night driving (staff);
- Potential fire hazard if effective fire management plan is not implemented and maintained.

6. WAY FORWARD

The Draft Scoping Report has been made available for a 40 day comment period to registered Interested and Affected Parties and other key stakeholders. Once the comment period expires all comments received will be captured in the Comments and Response Report and included in the Final Scoping Report for submission to DEA. Should the DEA accept the Scoping Report, ILA will proceed with preparation of the Draft Environmental Impact Assessment Report [EIAR].

The EIAR will include all finalised specialist studies as well as a recommendation on the preferred Alternatives as per the Alternatives identified in this Scoping Report. Furthermore the EIA Report will include an extensive analysis of:

- Issues raised during the Scoping phase;
- Significance assessment of all identified impacts including site specific mitigation;
- The Report will also include a Draft Environmental Management Programme and Draft Waste Management Plan.

The Draft EIA Report will again be made available to stakeholders for comment. The comments will be captured and included in the Final EIA Report which will be submitted to the DEA for issuing of a decision on the application.

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APPENDICES

SECTION 1: INTRODUCTION

Regulation 28 (1) (a)

1.1 DETAILS OF APPLICANT

The applicant is:
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Private Bag X 65
PRETORIA
0001
Tel: (012) 337-3328
Fax: (086) 572-9671
Email: **puseletso.ntsane@dpw.gov.za**

1.2 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The independent environmental consultant is:

INTERDESIGN LANDSCAPE ARCHITECTS (PTY) LTD (ILA)
P.O. Box 74648
LYNNWOOD RIDGE
0040
Tel: (012) 348-1922
Fax: (012) 348-7154
Email: **claudia@ilaweb.co.za**

1.2.1 EAP EXPERTISE

ILA performs comprehensive Environmental Impact Assessments (EIA's), as required by the Environmental Conservation Act as well as the National Environmental Management Act, 1998. ILA has expertise and experience to assess the visual and aesthetic impacts of proposed developments, as part of an EIA. ILA also conducts ecological planning and rehabilitation, which entails a process of site surveying and assessment of the physical, biotic and social-economic environment. This database is analysed to assist during the planning process of developments.

The Environmental Assessment Practitioners' team consist of the following individuals:

- **Ms Karen Botes – Managing Director:** Qualifications: BL (UP) MTech (Hort) *cum laude* PrLArch
- **Ms Abbigail El Mohamadi – Director**: Qualifications: BSc LArch (UP)
- **Ms Claudia Coetzee – Environmental Assessment Practitioner**
- **Ms Shalini Chetty – Environmental Assessment Practitioner** Qualifications: BA Environment and Development (UKZN)

The Managing Director of ILA in her personal capacity is a member of the South African Council for the Landscape Architectural Profession (SACLAP), registration number 99102. Karen Botes, Abbigail El Mohamadi, Claudia Coetzee and Shalini Chetty are also members of the International Association of Impact Assessment (South Africa) IAIA

1.3 TERMS OF REFERENCE

Interdesign Landscape Architects (Pty) Ltd (ILA) has been commissioned by Metroplan Town and Regional Planners to undertake the appropriate environmental process on behalf of the Applicant the ***Department of Public Works*** for the proposed construction of additional facilities and upgrades to the existing facilities and infrastructure at the Verdrag SAPS Training Facility near Thabazimbi. The Verdrag Training Facility is situated on the Farms Buffelskloof 452 KQ, Buffelspoort 459 KQ and Groenfontein 458 KQ, within the Limpopo Province. The Farms fall within the jurisdictional boundaries of the Modimolle Municipality.

1.4 GAPS IN KNOWLEDGE

- It is noted here that the geohydrological conditions on site have not been investigated in depth. Details regarding the status of ground and surface water conditions are not known.
- It is noted here that the geotechnical investigations conducted up to date have not considered the geotechnical conditions specifically relating to the areas where the existing oxidation ponds are located.

SECTION 2: PROJECT APPROACH AND OBJECTIVES

2.1. AUTHORITY CONSULTATION

Authority consultation is an integral component in the EIA process. The authorities guide the process through highlighting the necessary legislative requirements and key areas of concern.
The following entities have been contacted and invited to provide input and comment during the Environmental Assessment Process:

- National Department of Environmental Affairs (DEA);
- Limpopo Department of Economic Development, Environment and Tourism(LEDET);
- Waterberg District Municipality;
- Modimolle Local Municipality;
- Department of Water Affairs (DWA);
- Wildlife and Environment Society of South Africa (WESSA);
- South African Heritage Resources Agency (SAHRA);
- Endangered Wildlife Trust (EWT);
- Eskom; and
- Adjacent landowners

The Department of Environmental Affairs [DEA] has been contacted to advise on the applicability of a Waste Management License application [for the Waste Water Treatment Works, WWTW] and the Department of Water Affairs [DWA] is being consulted to advise on the requirements in terms of registering existing Water Uses and future Water Uses.

2.2 OBJECTIVES AND APPROACH OF THE ENVIRONMENTAL IMPACT ASSESSMENT SCOPING PROCESS AND REPORT

The EIA Process, as described in the Guideline Documents 3, 4 and 5 compiled by the Department of Environmental Affairs (DEA) 2006, as well as the IEM Guideline Series 5 & 7 Companion to the NEMA EIA Regulations 2010, produced by the same Department are being utilised to inform this Scoping Process and the NEMA Process as a whole.. As an integrated application has been registered with DEA both the expansion activities and the WWTW will be investigated through a full Environmental Impact Assessment Process in terms of the National Environmental Management Act, 1998 [Act 107 of 1998].

The objectives of the EIA process are as follows:

- To **identify issues**/ **concerns** that should be included into the scope of the Environmental Impact Assessment process;
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- To understand and thoroughly **document the issues/concerns and comments submitted raised by stakeholders** in such a way that delay due to misunderstanding will be prevented at all costs;
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- To **reflect all the required information**/ **findings** in a logical and systematic way in order to assist the

DEA with the evaluation of the proposed activity in terms of the requirements of the National Environmental Act, 1998 (Act No. 107 of 1998) as amended.

The EIA process to be followed will furthermore:

- Be open and transparent and will be maintained throughout the entire lifecycle of the EIA-process; and
- Respect the democratic rights and obligations of the participants/stakeholders.

2.3 PUBLIC PARTICIPATION PROCESS FORMING PART OF THE SCOPING & EIA PROCESS

Public Participation is the involvement of all parties who potentially have an interest in a development or project, or is affected by it. The aim of the public participation process is to facilitate and establish an effective communication forum, making it possible for Interested and/ or Affected Parties (I &AP's) to raise issues and/ or concerns. The principal objective of public participation is to inform and enrich decision-making.

The approach followed during the public participation process is informed by the Guidelines for Public Participation, as described in DEA (2006) Guideline 4 and Chapter 6 of Government Notice R 543, 18 June 2010 [of the EIA Regulations].

The Public Participation Process, as a minimum, comprises of the following:

- Advertising in a local newspaper (Die Kwêvoël and Die Pos) and placing notice boards at the site entrance. The advertisement and site notice included a description of the proposed activities; it informed the public of the EIA process and invited the public to participate in the process. The particulars of the applicant and independent EAP were provided;
- Direct notification to adjacent landowners and occupiers of land within 100 metres from boundary of the three application farms, as well as key stakeholders, including inter alia the Ward Councillor, municipality and any organ of state having jurisdiction in respect of any aspect of the activity. Letters informing the above-mentioned stakeholders of the proposed activities and associated EIA Process, were distributed;
- Review of Reports: All reports will be made available for review by registered Interested and/or Affected Parties (I&AP's). A copy of the draft Scoping Report will be made available *via* Dropbox links to registered Stakeholders, a hard copy of the Report will also be available for viewing at Obaro in Thabazimbi. State organs will be provided with hard copies. All registered I&AP's will be notified of the availability of the Report. Comments received on the draft Scoping Report will be included in the final Scoping Report for submission to DEA. The draft EIA Report will be made available for public review and further comment by Interested & Affected Parties. Comments will be addressed and included in the Final EIA Report for submission to DEA. Registered I&AP's will be afforded a 21 day comment period on all Final Reports prior to submission to DEA;
- Record of Decision Notification – All registered I&AP's will be notified, in writing whether environmental authorisation for the activities were granted or refused, the content of the Decision and the appeal period.
- A legal advert notifying the public of the outcome of the application will also be placed in a local newspaper.

The following stakeholders have been identified and have been notified of the commencement of the EIA Process. The EIA Process is however a dynamic process and further stakeholders could be identified through the course of the application:

- Adjacent land owners;
- Ward Councillor;
- Limpopo Department of Economic Development, Environment & Tourism;
- Modimolle Municipality;
- Waterberg District Municipality;
- SAHRA;
- DWA;
- DAFF;

- WESSA;
- EWT;
- Eskom

SECTION 3: LEGAL REQUIREMENTS

Regulation 28 (1) (f) & (o)

3.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 [ACT 107 OF 1998], AS AMENDED

3.1.1 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) REQUIREMENTS

The Environmental Impact Assessment (EIA) process followed is in compliance with the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations of 2010 (Government Notice No's R543, 544 and 546 of 2010). The proposed development involves 'listed activities', as defined by the NEMA, 1998. Listed activities are activities, which may have potentially detrimental impacts on the environment and therefore require environmental authorisation from the relevant authorising body.

The proposed development occurs in the Limpopo Province, but as the Applicant is a Government Department the National Department of Environmental Affairs will be the responsible regulatory authority and the Limpopo Department of Economic Development, Environment and Tourism (LEDET) will be a key stakeholder who will also review and provide comment on the application. The final decision making powers rests with DEA.

The following activities apply to the proposed development;

- The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, grit, pebbles or rock of more than 5 cubic metres from a watercourse ***[GNR 544, Listing Notice 1, Item 18(i)]*** **Required for implementation of new and replacement of defunct pipelines within a watercourse, including stormwater outlets such as culverts**
- The expansion of facilities or infrastructure for the bulk transportation of water, sewerage or stormwater where (a) the facility or infrastructure is expanded by more than 1000 metres in length. ***[GNR 544, Listing Notice 1, Item 37(a)]*** **Required for the installation of additional pipelines to service new training camps.**
- The expansion of (ii) channels, (iii) bridges, (v) bulk stormwater outlet structures within a watercourse or within 32m of a watercourse, measured from the edge of a watercourse, where such expansion will result in an increased development footprint but excluding where such expansion will occur behind the development setback line ***[GNR 544, Listing Notice 1 Item 39(ii), (iii) ,(v)]*** **Required for stormwater management on site**
- The construction of a road wider than 4 metres with a reserve less than 13,5 metres in (a) Limpopo (ii) outside urban areas, in (cc) Sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority. ***[GNR 546,Listing Notice 3, Item 4 (a) (i)(cc)]*** **Required for the internal roads at new camp sites.**
- The construction of aircraft landing strips and runways 1,4 kilometres and shorter in (a) Limpopo (ii) outside urban areas in (dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority. ***[GNR 546, Listing Notice 3, Item 8(a)(ii)(dd)]*** **Required for the clearance of a new landing strip.**
- The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation in Limpopo, (ii) outside urban areas in (cc) sensitive areas as identified in an environmental management framework as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority. ***[GNR 546, Listing Notice 3, Item 13(c)(ii)(cc)]*** **Required for construction of all new structures including new shooting range.**
- Phased activities for all activities listed in this Schedule and as it applies to a specific geographical area,

which commenced on or after the effective date of this Schedule, where any phase of the activity may be below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold***.[GNR 546, Listing Notice 3, Item 26]***

- The expansion of reservoirs for bulk water supply where the capacity will be increased by more than 250 cubic metres in Limpopo, outside urban areas, in sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority***. [GNR 546, Listing Notice 3, Item 17(a)(i)(dd)]***. **Upon receipt of the preliminary engineering design report on 18 June 2012, it was confirmed that additional reservoir capacity was required. This activity is now included in the Scoping Report and the Application Form submitted to the DEA will be amended accordingly. It is hereby recorded that this listed activity was not included in the Legal Notice or Background Information Document which was made available during the initial public process.**

3.1.2 REGISTRATION OF THE PROJECT WITH DEA

Environmental authorisation is being sought for the new proposed facilities and for certain upgrades to the existing facilities from the Competent Authority the National Department of Environmental Affairs [DEA]. Such authorisation is sought in terms of the requirements of Sections 24 and 24(D) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended, as read with Government Notices R 543 (Regulations 26 – 35), R 544, R 545 and R 546 of 18 June 2010.

Note: The existing training facility was erected in the early 1980's. The facility therefore was developed prior to the promulgation of the Environmental Conservation Act, Act 73 of 1989. The activities identified by the Minister which required authorisation only came into effect on 8 September 1997. Prior to 8 September 1997 no EIA Regulations were in place. Therefore when the existing facility was developed such facility did not require environmental authorisation. Expansion on the existing facility however requires authorisation and as such the Applicant seeks authorisation from the Environmental Authority for such expansion. As cumulative impacts are being considered as part of this EIA Process the Environmental Management Programme will be developed which will provide environmental management specifications for the entire facility to ensure all impacts are addressed and mitigated.

Note that existing borrow pits are located on site. It has been indicated by the project engineers that the borrow pits should provide sufficient material for construction purposes. It is hereby confirmed that licensing of the borrow pits if such is required does not form part of this application.

Wastewater treatment system

The training facility currently makes use of an Aerobic/Anaerobic Stabilisation Pond System for treatment of wastewater. The stabilization ponds used for the treatment of wastewater at Verdrag have been in operation since 1982 but were not licensed by the Department of Water Affairs at the time of their construction. This wastewater treatment facility therefore requires a Waste Management License in terms of the National Environmental Waste Management Act (Act 59 of 2008). The stabilisation ponds require authorisation / licensing from the DEA and must be subject to a full Environmental Impact Assessment[EIA] due to the annual throughput capacity of the ponds exceeding 15 000m^3.

An integrated process will therefore be followed for authorisation of expansion activities associated with the training facility and for licensing of the existing Waste Water Treatment Works [WWTW].

The project was registered with the DEA on 16 April 2012 and a Full Environmental Impact Assessment Process will be followed. The project has been assigned the following project reference numbers **NEAS Ref No: DEA/EIA/0001130/2012 and Ref No 14/12/16/3/3/3/38**. Refer to ***Appendix 1*** for a copy of the DEA project registration letter.

The DEA confirmed certain aspects which must be considered as part of the EIA Process, please refer to ***Appendix 1*** for the list of requirements.

3.2 OTHER LEGAL REQUIREMENTS, GUIDELINE AND POLICY DOCUMENTS

The following guidelines and legislation have informed aspects of this report.

3.2.1 DEVELOPMENT FACILITATION ACT,1995 (ACT NO. 67 OF 1995)

The Development Facilitation Act (DFA) guides the implementation of reconstruction and development programmes and projects in relation to land and lays down general principles governing land development. The Applicant has applied to the Limpopo Development Tribunal for the establishment of a Land Development Area to be known as the SAPS Verdrag Training Institute. The applicant is applying for the rezoning of 16 portions to establish a land development area measuring 362.176 hectares as per the Land Development lay out, refer to ***Appendix 2.*** The residual 7104.9444 hectares will remain under an 'Agricultural' zoning. This application has been submitted in terms of the DFA Legislation and was approved by the Tribunal on 31 May 2012. Such approval is however conditional and is subject to the issuing of an Environmental Authorisation by DEA.

3.2.2 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT NO. 10 OF 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection.

Certain flora species which are protected were recorded during the site investigation conducted by the Vegetation Specialist. Such species may not be removed or relocated without a permit from Department Agriculture and Forestry.

3.2.3 NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998)[NWA]

The National Water Act guides the management of water in South Africa as a common resource. The Act aims to regulate the use of water and activities, which may impact on water resources through the categorisation of 'listed water uses' encompassing water extraction, flow attenuation within catchments as well as the potential contamination of water resources, where the Department of Water Affairs (DWA) is the administering body in this regard.

In terms of Section 21 of the National water Act, 1998 (Act 36 of 1998) the following uses require authorisation from the DWA:

- Section 21 (a) 'taking water from a water resource';
- Section 21 (b) ' storing water';
- Section 21 (c) 'impeding or diverting the flow of water in a watercourse';
- Section 21 (f) 'discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit';
- Section 21 (i) altering the bed, banks, course or characteristics of a watercourse';

EcoAgent CC has been commissioned to apply on behalf the Applicant to the Department of Water Affairs for the registration of existing Water Uses and for Licensing of new Water Uses.

The following activities associated with the Training Facility require registration and licensing in terms of the NWA, 1998

- The Rookpoort Dam is situated on the Farm Buffelskloof 452-KQ. A permit was issued by the Department of Water Affairs and Forestry for construction of the Dam. The dam is the main source of water supply to the training facility;
- River crossings existing and any new crossings;
- Sewerage treatment works;
- All facilities affected by the 1:100 year floodline.

3.2.4 NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 (ACT 59 of 2008)

The Waste Act reforms the law regulating waste management in order to protect health and the environment

by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management measures; to provide for the licensing and control of waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

Activities in respect of which a waste management license is required in accordance with section 20(b) of the Waste Act includes

- The storage including temporary storage of general waste in lagoons
- The treatment of effluent, wastewater or sewage with an annual throughput capacity of 15 000 cubic metres or more. [No 718 Category B Item (7)]

The training facility has made use of an Aerobic-Anaerobic Stabilisation Pond treatment system since 1982. No record of a permit or license issued by the Department of Water Affairs for the operation of this facility is available. A formal enquiry was submitted to the DEA to determine whether the ponds required a license in terms of the new Waste Act. It was confirmed by DEA that the wastewater treatment facility must be subject to a Waste Management License Application. As the annual throughput of the facility exceeds 15 000m^3 it must also be subject to a full Environmental Impact Assessment Process.

The above activity is listed as a Category B activity and any person who wishes to commence, undertake or conduct an activity listed under this Category, must conduct a full Environmental Impact Assessment process, as stipulated in the Environmental Impact Assessment Regulations made under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as part of a waste management license application.

The existing Waste Water Treatment Facility is therefore being investigated as part of this EIA Process.

3.2.5 NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT NO. 25 OF 1999)

The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessments in areas earmarked for development, which exceeds 0.5 hectares. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. The South African Heritage Resources Agency (SAHRA) administers permits.

A Heritage Impact Assessment has therefore been conducted on the application site. Cultural and heritage resources were recorded on the subject property; however none of these are affected by the proposed lay-out of new facilities and infrastructure.

3.2.6 NATIONAL FORESTS ACT, 1998 (ACT NO. 84 OF 1998)

This Act provides for the management, utilisation and protection of forests through the enforcement of permitting requirements associated with the removal of protected tree species, as indicated in a list of protected trees (first promulgated in 1976 and updated since). The Department of Water Affairs and Forestry (DWAF) administer permits in this regard.

Protected trees have been recorded on site. None of these trees may be removed or damaged by the development activity without a permit issued by DAFF. The trees will be marked prior to construction commencing. The Layout of facilities is quite flexible and it is not anticipated that any of the trees will have to be removed.

3.2.7 OCCUPATIONAL HEALTH AND SAFETY ACT (ACT NO. 85 OF 1993)

The purpose of this Act is to provide for the health and safety of persons at work, and for the health and safety of persons in connection with the use of plant and machinery. It serves also for the protection of persons other than persons at work against hazards to health and safety arising out of or in connection

with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

3.2.8 NATIONAL VELD & FOREST FIRE ACT (ACT 101 of 1998)

The purpose of this Act is to prevent and combat veld, forest and mountain fires throughput the Republic. The Act provides for a variety of institutions, methods and practices for achieving this purpose.

It will be the responsibility of the Applicant [Public Open Works] to ensure that a veldfire programme is properly implemented. As per Section 12 of the Act the Applicant is responsible for ensuring that firebreaks are implemented and maintained.

The Thabazimbi Fire Protection Association (Thabazimbi FPA) was establish in 2007 and is presently chaired by Mr Anton Scheepers. The section leader for Thabazimbi FPA is Warrant Officer Hennie Kruger.

It is the responsibility of land owners to adhere to the rules of the Thabazimbi FPA and to ensure that all firebreaks, fire fighting equipment and fire fighting teams are up to standard. It is very important to inform neighbours when you plan to burn firebreaks or even arrange to burn firebreaks together. Especially during the burning season, communication through a core team is very important, informing neighbours when and where to report during run away veldfires.

3.2.9 DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND TOURISM (DEAT) (2006) GUIDELINES 3,4 & 5

The EIA process is being conducted according to the Guideline documents 3, 4 and 5 compiled by the Department of Environmental Affairs and Tourism.

3.2.10. CONSERVATION OF AGRICULTURAL RESOURCES ACT 1983(ACT 43 OF 1983)

The Act provides for control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invade plants; and for matters connected therewith.

All invader species classified in terms of the Act within the property boundary must be identified and systematically eradicated in an ecologically sensitive manner, and monitored on a continuous basis.

3.3 LOCAL PLANNING INITIATIVES

3.3.1 WATERBERG SPATIAL DEVELOPMENT FRAMEWORK

The purpose of a Spatial Development Framework is to provide general direction to decision-making and action over a multi-year period. Spatial Planning can be defined as being “a high level planning process that is inherently integrative and strategic, that takes into account a wide range of factors and concerns and addresses the uniquely spatial aspects of those concerned”.

The Waterberg District Municipality’s Spatial Development Framework acknowledges the competition that exist between mining, residential development and the environment. It further states that the local municipalities have a responsibility to demarcate an urban edge within the boundaries of which, the municipality will endeavor to upgrade the levels of servicing. Beyond the urban edge it is envisaged that the rural communities will enjoy lower density environments. The proposed development will be independent in as far as servicing is concerned and continuous monitoring in terms of the Environmental Management Plan will assure the upkeep of the environmental assets. The services reports that form part of the application proves that adequate and sustainable resource capacity is available.

3.3.2 MODIMOLLE LOCAL MUNICIPALITY INTEGRATED DEVELOPMENT PLAN, 2010/2011

The development of the training institute will adhere to the objectives of sustainability, efficiency and equitability, while at the same time having a minimum impact on the physical environment. The proposed development falls outside the Waterberg Biosphere and its buffer zones, and is situated to the west of the town Alma, which is identified as a Local Service point in the municipal area

3.3.3 ENVIRONMENTAL MANAGEMENT FRAMEWORK (EMF) FOR THE WATERBERG DISTRICT, 2010

[Portions of the text below has been extracted directly from the EMF]

The Environmental Management Framework (EMF) is an initiative of the National Department of Environmental Affairs (DEA) in partnership with the Limpopo Department of Economic Development, Environment and Tourism (LEDET), and the Waterberg District Municipality (WDM).

The EMF will support decision-making in the Waterberg District Municipality area in order to facilitate appropriate and sustainable development. The EMF integrates policies and frameworks and aligns government mandates to streamline decision-making and to improve cooperative governance. The EMF has a number of specific objectives, which include identifying the *status quo*, development pressures and trends in the area and development of a decision support system for development in the area to ensure that environmental attributes, issues and priorities are taken into account.

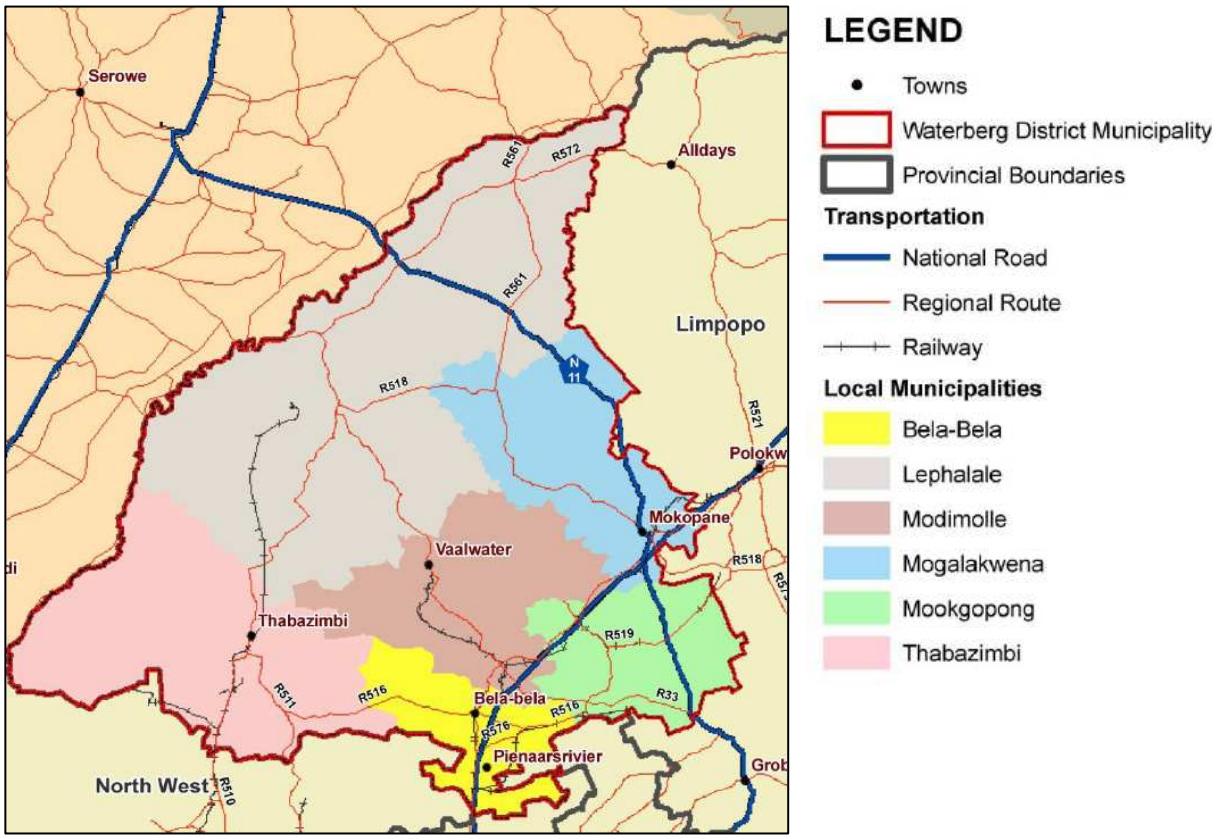

Figure 1 Locality Map Waterberg District

The requirements of the EMF have been considered and the development proposals' adherence thereto investigated. In the sections below specific requirements applicable to the affected area have been identified and the development proposals adherence thereto is highlighted.

(i) ENVIRONMENTAL MANAGEMENT ZONES

A sensitivity analysis together with the structural spatial elements (towns, villages, mineral resources, economic activities, etc.) was identified and provides the basis for the development of Environmental Management Zones classified by the EMF. Based on the findings contained in the draft Desired State Report, which formed part of the compilation of the EMF it was decided to do further analysis on the

following aspects in order to refine a spatial base that would be relevant and accurate for the identification of Environmental Management Zones:

- General environmental sensitivity (ecological and landscape);
- Conservation planning (current protected areas and potential expansion areas);
- Water production priority areas; and
- Agricultural intensity (footprint).

The development area falls within the following zones:

ZONE 1: PROTECTION OF NATURAL VEGETATION, SCENIC LANDSCAPE AND ROCK PAINTING AREAS, WITH LIMITED APPROPRIATE TOURISM

The boundaries of the subject properties extend into this zone but none of the development activity with the exception of possibly the new shooting range is proposed in areas affected by this zone classification. It must be noted however that a shooting range contains very little hard footprint.

This zone represents areas with generally high natural, visual and cultural quality that provides the core natural and cultural resource base for the establishment of the Waterberg as a conservation destination. The protection of the area as a whole is important. Conservation is the priority land use in this zone and should be promoted as the core activity in every instance.

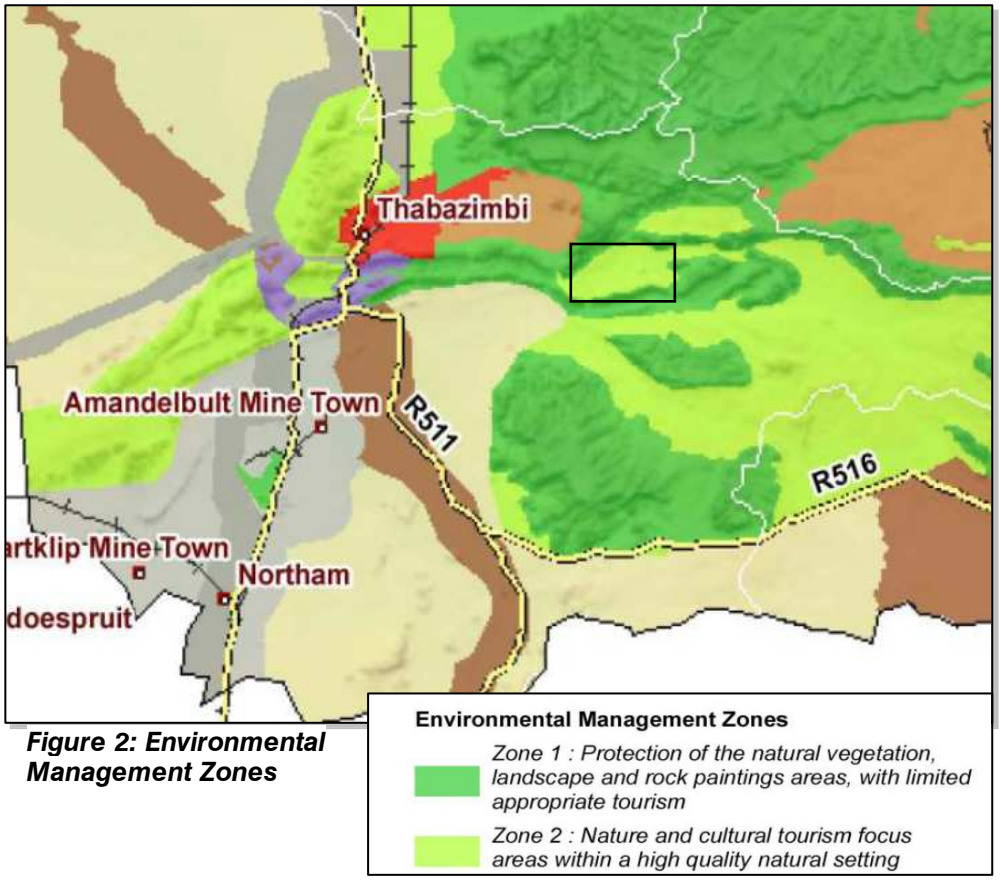

Figure 2: Environmental Management Zones

Service infrastructure should be limited to what is necessary but nonetheless be of a good quality.

The development proposal entails the maintenance and upgrade of existing infrastructure to ensure that it is sufficient and effective.

Preferred activities in this zone include the conservation of nature in protected areas in terms of the National Environmental Management: Protected Areas Act.

Compatible activities in this zone include amongst other limited tourism facilities that take place in a manner that:

- Limits disturbance to natural vegetation to the minimum possible after undertaking an environmental assessment as required in terms of GNR 546 [***in process***];
- Does not consume additional natural resources [***limited supply required***];
- Does not impact negatively on the sense of place of the area, being particularly sensitive to not breaking the skyline or impeding views[***low impact development, design guidelines to be provided in EMPr to limit visual impact***];
- Recycles its waste products; and treats its sewerage before release into natural streams [***wastewater is not released into streams but treated through an Aerobic-Anaerobic stabilisation pond. Should an Alternative system be selected where purified effluent is used for irrigation a water quality monitoring plan should be implemented***].

The Farms forming part of this application extend to a total of approximately 8000 ha. With the exception of the small development areas scattered across these farms the greatest portion of the site is, for all intends and purposes, managed as a game reserve. There is thus a strong parallel between the site and a conventional nature reserve, with only a difference between tourist rest camps in the latter and training facilities in the former.

ZONE 2: NATURE AND CULTURAL TOURISM FOCUS AREAS WITH A HIGH QUALITY NATURAL SETTING

This zone represents areas with a generally high, natural, visual and cultural quality that has significant potential for the development of nature and/or culture based tourism. It also forms the area from which the conservation use in Zone 1 can be explored.

Conservation is the secondary focus of this zone. As such conservation legislation should be observed and enforced. Conservation areas should be well maintained to encourage further tourism in this zone.

Preferred activities in this zone include***:***

- Conservation of nature in protected areas in terms of the National Environmental Management: Protected Areas Act;
- Limits disturbance to natural vegetation to the minimum possible after undertaking an environmental assessment as required in terms of GNR 546 [***in process***];
- Does not consume additional natural resources [***limited supply required***];
- Does not impact negatively on the sense of place of the area, being particularly sensitive to not breaking the skyline or impeding views[***low impact development, design guidelines to be provided in EMPr to limit visual impact***];
- Recycles its waste products; and treats its sewerage before release into natural streams [***wastewater is not released into streams but treated through an Aerobic-Anaerobic stabilisation pond. Should an Alternative system be selected where purified effluent is used for irrigation a water quality monitoring plan should be implemented***].

The intended developments will be restricted and the footprint of the development sites will be insignificant measured against the total size of the approximately 7500 hectares site. In most instances development and alterations will be on sites already developed and disturbed.

Wetlands are considered as sensitive, but no additional hard footprint will affect this habitat type with the exception of the replacement of broken pipelines and installation of infrastructure.

The development will not result in a loss of ecologicaly sensitive and important habitat units, ecosystem functions, loss of mammal habitat nor of loss/displacement of threatened or protected species***.***

Furthermore the feasibility of formally protecting the area in terms of the Protected Areas Act, Act 57 of 2003 should be considered by the Applicant.

The development proposal is considered in line with the objectives of the Environmental Management Zones.

(ii) WATERBERG BIOSPHERE RESERVE

The Farm boundaries forming part of this application extend into the buffer zone area of the identified Waterberg Biosphere Reserve.

As per the specification of the EMF the buffer zones are adjacent or surrounding core zones. In terms of the biosphere the buffer zone should be used for activities compatible with sound ecological practices.

The largest part of the subject properties fall within the Transition Zone 1, which allows for a higher level of tourism development but still retains the overall undisturbed natural character of this area.

The development proposal incorporates for the most part areas which are already transformed by limited development. Furthermore the land use is considered low impact due to the infrequency of visitors and as the infrastructure required is minimal as compared to for instance a higher density game lodge.

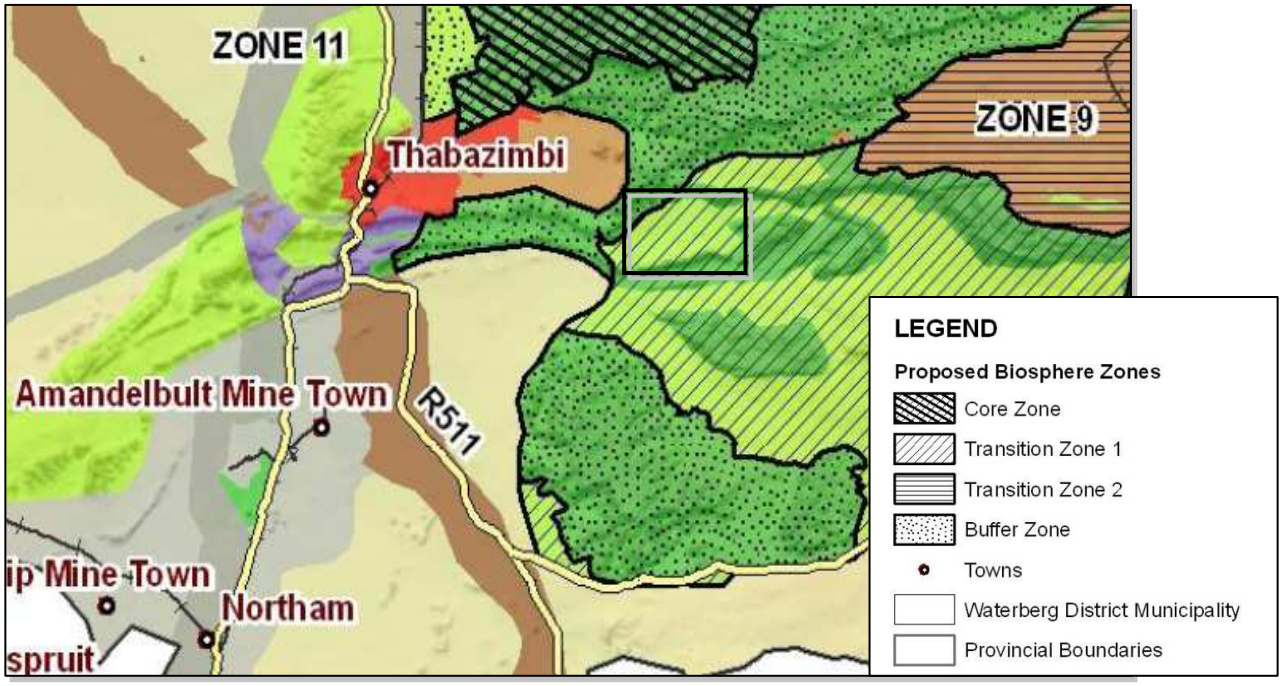

Figure 3 Areas affected by the Biosphere Reserve

(iii) ENVIRONMENTAL MANAGEMENT GUIDELINES

In order to give guidance on certain important environmental issues, guidelines on the following issues have been included in the EMF:

- Solid waste management and recycling;
- Sewage disposal;
- Transformation of land;
- Duty of care and remediation of environmental damage;
- Compensative investment; and
- Stream flow management.

SEWERAGE DISPOSAL

The development makes use of an Aerobic-Anaerobic Stabilisation Pond system for treatment of wastewater. This system relies on evaporation and vegetation [reeds] for the removal of organic material. The current throughput is very little and up to date the facility has not required any removal of sludge. As per the Preliminary Design Report prepared by Messrs Dux Consulting Engineers maintenance on the ponds is required. A reed bed pond system acts as the secondary pond of the treatment plant and it is evident that it was not in use for quite some time and most of the reeds were destroyed due to a lack of water and animals feeding on the vegetation.
The embankments of the pond system need some maintenance as trees are growing on the embankment which can cause it to collapse once filled with water.

The wastewater treatment facility is being subject to a Waste Management License application which will include an Environmental Impact Assessment.

With the implementation of appropriate vegetation [which could act as an artificial wetland] and with the provision of a sufficient supply of water the operation of the system can be significantly improved to reduce impacts to the environment.

Alternative wastewater treatment facilities have been identified. The advantages and disadvantages associated with the current and alternative proposal will be investigated in depth during the EIA Phase to determine the preferred proposal in terms of environmental sustainability, financial implications and maintenance aspects.

TRANSFORMATION OF LAND

The cumulative effect of the transformation of land in Zones 1, 2 and 9 will over time lead to the depreciation of the natural and production assets that occur in these areas. Given the importance of the resource base for the sustainable long term development of the area and fact that the EMF have provided for different zones for different types of activities, it is appropriate that transformation of land in Zones 1, 2 and 9 be limited to the extent possible.

- Properties in zones 1 and 2 should not be subdivided. Consolidation of properties should be encouraged whenever possible. ***The development proposes consolidation of the farm portions.***
- Development in Zones 1, 2 and 9 should occur in carefully selected clusters that have minimum impact on the natural and scenic values of the area. ***Development is largely proposed in areas already disturbed. The development footprint in undisturbed areas is very small.***
- Dispersed development in Zone 1, 2 and 9 should not be allowed. ***The development clusters are scattered. However the footprints are small and for the most part the natural bushveld terrain has been retained and is being conserved and maintained***;
- Already disturbed areas in Zones 1 and 2 should be considered as the first option for development. ***Development is largely proposed in areas already disturbed, the development footprint in undisturbed areas is very small.***

- Transformation of land should take the goals and targets of government as reflected in policies, legislation and other documents into account. Relevant legislation and documents include:
  - The National Environmental Management Act, 1998 (Act 107 of 1998) as amended (and its regulations);
  - The Limpopo Environmental Management Act, 2003 (Act 7 of 2003);
  - The National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004) as amended (and its regulations);
  - The National Spatial Biodiversity Assessment, 2004 (and its technical support documents) ;
  - The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) as amended;
  - The National Forest Act, 1998 (Act 84 of 1998) as amended; and
  - The Municipal Systems Act, 2000 (Act 32 of 2000).

The development proposes consolidation of the Farm Portions. Development is largely proposed in areas already disturbed, the development footprint in undisturbed areas is very small and will be subject to the mitigation measures provided in the EMPr and those provided by the Fauna and Flora specialists.

DUTY OF CARE AND REMEDIATION OF ENVIRONMENTAL DAMAGE
In performing their compliance and monitoring and enforcement duties, the relevant national and provincial officials should ensure that any activities that are inconsistent with the objectives of an Environmental Management Zone, trigger the duty of care mechanism in NEMA.

None of the activities proposed are considered to be in conflict with the specifications and requirements of Zones 1 and 2. The wastewater treatment system will being subject to a Waste Management License Application which will determine whether the facility has in the past resulted in any impacts to the environment and will determine adequate mitigation and remediation measures where necessary, or replacement of current system.

(iv) SUSTAINABLE DEVELOPMENT CONTEXT
There are many definitions of sustainable development which may apply to a greater or lesser extent to the district. What is however important in this particular instance is that it should be focussed on all of the following, failing which the concept itself will in all likelihood not be sustainable in the district:

- It must ensure the adequate and appropriate protection of biodiversity in the district.
- It must ensure that the surface water resource in the area is managed in a manner that will ensure that it continues to provide in the needs of the area and that the water that is returned to the system is of an acceptable quality.
- It must ensure that the quantity and quality of the groundwater in the area is protected and kept at a level and quality where it can continue to sustain the activities that depend on it, especially rural communities
- It must ensure a continued and even increased income for the district and especially its poor communities.
- It must provide for increased levels of employment and better types of employment.
- It must provide incentives for the establishment of a more balanced population structure especially in respect to the age, health and general prosperity of the population.

The development proposal is considered as a low impact activity with limited disturbance to the natural environment. With an expansion of the facilities additional permanent jobs will be created. During the construction phase several temporary jobs will also become available. Maintenance to existing infrastructure will limit impacts to the environment and waste of natural resources.

SECTION 4: PROJECT DESCRIPTION: EXISTING AND NEW FACILITIES

Regulation 28 (1) (b) & (d)

4. PROJECT OUTLINE
4.1 LOCALITY
The farm portions are situated between Thabazimbi and Modimolle within the Limpopo Province. Thabazimbi is about 35km to the west and Modimolle about 70km to the south east. The site is accessed from the P240 gravel road which leads to Alma in the east and to the D1485 intersection in the northwest toward Thabazimbi. The subject properties are located both directly to the north of and to the south of the P240. Refer to ***Appendix 3*** for a copy of the locality map indicating the co-ordinates of all of the existing and proposed features on site. Also refer to ***Appendix 4*** for a copy of the Orthophoto locality.

4.2 SITE DESCRIPTION AND CURRENT LAND-USE
The application properties consist of the following Farm Portions:

- Portion 1 of the Farm Groenfontein 458-KQ [428,2660 ha];
- The Remaining extent of the Farm Groenfontein 458-KQ [1728,800 ha];
- Portion 1 of the Farm Buffelspoort 459-KQ [685,2256 ha];
- The Remaining extent of the Farm Buffelspoort 459-KQ [630,3804 ha];
- The Farm Buffelskloof 452-KQ [3994,4484 ha].

The SAPS Training institute facilities are situated on the valley floor between the Sandriviersberge to the north and the Hoekberge to the south. The site has been used as an advanced training institute for SAPS personnel since the early 1980's. Training and accommodation is located in a number of small and well circumscribed localities whereas the greatest portion of the site is, for all intends and purposes, managed as a game reserve.

A significant feature on the Farm Buffelskloof 452-KQ is the Rookpoort Dam which was constructed in 1993. A permit for construction of the dam was issued by the then Department of Water Affairs and Forestry. The dam has a maximum storage capacity of 3,44 million cubic metres.

Figure 4: A view over the Rookpoort Dam

Figure 5: A view of the access road to the facility from Road P240

Figure 6: The largest part of the application properties consists of natural bushveld terrain

4.3 SURROUNDING LAND-USE

The subject property is surrounded by farms that are used either for game farming or for cattle grazing. The Marekele National Park is also situated to the north in the Waterberg mountain range.

4.4 THE TOWN PLANNING PROCESS

Apart from environmental authorisation, the proposed development requires the submission of an application for the establishment of a land development area in terms of the Development Facilitation Act, 1995 (Act 67 of 1995) [DFA] for Residential purposes.

Metroplan Town and Regional Planners were instructed by the applicant to facilitate the town planning process and to submit the application for establishment of a land development area to the Limpopo Development Tribunal. Such application is for the establishment of a land development area, by rezoning of sixteen portions on Portion 1 Portion 1 and Remainder Groenfontein 458-KQ, Buffelskloof 542-KQ and the Remainder Buffelspoort 459-KQ. The total size of the land development area in respect of which approval is sought from the Tribunal measures approximately 362.176 hectares thus leaving the residual of 7104.9444 hectares to remain under an 'Agricultural' zoning.

4.5 OWNERSHIP AND TITLE DEED

Ownership of the property vests with The Republic of South Africa as per the following Deeds of Transfer numbers:

- Portion 1 of the Farm Groenfontein 458-KQ T35698/1969;
- The Remaining extent of the Farm Groenfontein 458-KQ T29060/1969;
- Portion 1 of the Farm Buffelspoort 459-KQ T29061/1969;
- The Remaining extent of the Farm Buffelspoort 459-KQ T29061/1969;
- The Farm Buffelskloof 452-KQ T35698/1969.

4.6 PROPOSED DEVELOPMENT

The following additional facilities and upgrades are being proposed as part of this application process Refer to ***Appendix 4*** for a copy of the proposed lay-out:

Existing Administration camp:

- Renovation and maintenance of existing structures;
- Construction of **new** residential units;
- Construction of **new** ammunition safe;
- **New** gravity feed sewer pipeline

New Alpha Camp [A Training Camp]

Construction of:

- Trainer's accommodation;
- Student accommodation;
- Lecture facilities;
- Recreation Facilities & Gym;
- Admin block;
- Tactical training area;
- Ablution facilities
- New gravity feed sewer line

Existing Bravo Camp [B Training Camp]

All existing structures to be demolished and replaced with similar facilities. Replacement structures include:

- Lecture facilities;
- Student accommodation;
- Trainer's accommodation;
- Recreation facilities & Gym;

- Tactical training area;
- Existing sewer pump line will be replaced

New Echo Camp [E Training Camp]
Construction of:
- Student accommodation;
- Trainers accommodation;
- Admin block;
- Recreational facilities and Gym;
- Ablution facilities;
- Lecture facilities;
- Shooting range

Existing Delta Camp [D Training Camp]
Construction of:
- Additional accommodation units;
- Lecture facilities;
- Admin block

Other
- New landing strip and admin building;
- New shooting range and admin block;
- New ammunition safe;
- Maintenance of existing wastewater treatment facility [Aerobic-Anaerobic Stabilisation Ponds];
- Upgrade and maintenance of existing stormwater management infrastructure including upgrade of stormwater outlets [detail to be confirmed];
- Upgrade and maintenance of existing road infrastructure [roads leading from P240 to training camps will be tarred];
- Upgrade and maintenance of existing water supply and reticulation[detail to be confirmed];
- Upgrade of existing sewerage reticulation infrastructure[replacement of old pipes, maintenance/replacement of existing sewerage pump station which is currently not working, embankments of the pond system require maintenance as trees are growing on it and it can cause the embankment to collapse once filled with water, maintenance of reed bed].

It should be noted that the specifications above exclude existing structures and infrastructure **which will not be subject to upgrade or maintenance** [existing shooting range B & A, existing Echo Camp, existing Charlie Camp, existing landing strip, existing urban training facility].

4.7 CIVIL SERVICES

Dux Consulting Engineers together with ADI Consulting Engineers were appointed to attend to the necessary investigations as to the availability of engineering services and for compilation of Preliminary Design Report.

The project entails the development and upgrading of the existing facilities inclusive of all civil related services for the following:

(i) Structural component for Camps A,B,C,D and E;
(ii) Water, fire water and sewer supply and treatment and delivery for each Camp Site;
(iii) Street and stormwater infrastructure, and access between the camps;
(iv) Upgrading of the airstrip;
(v) Upgrading of the magazine storage facility;
(vi) New shooting range.

Extracts from the report by Dux Consulting is included below.

4.7.1. EXISTING INTERNAL SERVICES

Included below is the s*tatus quo* of the existing infrastructure on site

4.7.1.1 EXISTING BULK WATER SUPPLY

(i) RAW WATER AND CLEAR-WATER AVAILABILITY

The Rookberg dam with a full storage capacity of 3,5 million m^3 is located on the site and is the main source for water supply to the area. Raw water is pumped at a yield of 18 l/s (64,8 m3/hr) from the Rookberg dam site via an alternate ouble pump system through a 150 Ø Klambon steel pipe that serve automatically as a standby pump system towards a 150 m^3 raw water reservoir located just north of Camp A. Pressure Control Valves located at the Raw Water reservoir controls the pumps at the dam site and switch off automatically once the reservoir is full. Raw water is then purified through a 1,3Ml/day Slow Sand Filter purification plant that feeds the main 1240kl clear-water reservoir adjacent to the purification plant.

The Clear water reservoir at Camp A feeds the reticulation networks towards the existing Camps A & B and water is pumped towards the existing reservoirs at Camps D & E.
Other supplies consist of four boreholes (W703,W704,W755 & W754 – Refer to ***Appendix 5.*** For a copy a location of the boreholes), within the vicinity of Camp sites A & B with a combined yield estimated at 56,5kl/day. Another two boreholes exist (W751 & BH1), equipped with centrifugal pumps, pumping water toward the Clearwater reservoirs located at Camp D (55kl) and E (260kl) with a combined yield of 58,5 kl/day.

Other supplies consist of three boreholes equipped with centrifugal pumps, pumping water towards the Clearwater Reservoirs located at Camps D and E.

(ii) WATER PURIFICATION

The water purification plant consists of a 1300kl/day per slow sand filter system complete with chemical dosing, backwash and aeration pumps to enable the maintenance team to supply clean water towards the end users and to clean the sand filter system on a regular basis. Clearwater is stored via the purification plant in an additional 35m^3 reservoir located below the raw water reservoir for backwash purposes.

The chemical dosing plant consists of the following:
Lime dosing – Normally added to remove high phosphor content or for sedimentation purposes;
Alum dosing – Sedimentation purposes;
Chlorination – Disinfections

Both the raw water pump-station and the purification plant is in working order and maintained by trained personnel from the Training Institution. Presently the purification plant operates for less than 9/24 hrs per day (38%) from where clean water gravitates to a 1240m^3 reservoir that directly serves Camp sites A & B and via the clear water pump station can serve Campsites C,D and E. Campsites C,D and E's main water sources at this present moment consists of two boreholes with a combined yield of 58,5kl/day and purified water from the 1240m^3 reservoir is only used as an alternative supply during borehole maintenance and electricity breakdowns.

The existing bulk water supply capacity measures 910kl/day.

4.7.1.2 REQUIRED UPGRADING OF BULK WATER INFRASTRUCTURE

The upgrading of the bulk water infrastructure supply system will include:

- Construction of new reinforced concrete storage reservoirs at Admin Camp and Delta Camps;
- Construction of required bulk rising and gravity uPVC mains;
- Construction of uPVC water distribution reticulation networks.
- It will be necessary to provide additional storage capacity in order to provide sufficient fire water supply. The following is recommended. The existing 1240kl reservoir that supplies the existing Camp A and Camp B sites through a gravitational feeder line, must be upgraded with an additional 5090kl reservoir. This reservoir will also supply water to the new A Camp through the existing gravitation feeder line towards Camp B. It is also recommended that the storage facility at Camp D be upgraded with an additional 5095 kl reservoir that will ensure enough capacity for Camps C,D and E inclusive of fire water.

Location of reservoirs to be confirmed, possible locations to be identified based on sensitivity and location of existing reservoirs.

4.7.1.3 EXISTING WATER RETICULATION NETWORK

(i) CAMPSITES A AND B

The 1240 m^3 reservoir located next to the purification plant supply water directly via a 250mm Ø pipeline to the reticulation networks at Campsites A (Admin Camp)& B. An automatic pressure control valve located at the reservoir switches off the purification plant once it reached its full capacity. Four boreholes within the area of Campsites A & B with a combined yield of 1,96 litres per second tested for eight hours pumping per day is available as a possible alternative or standby system if required.

Presently the reservoir serves as the storage facility for both domestic and fire water usage.

(ii) CAMPSITES C, D AND E

Two boreholes with a combined yield of approximately 2,03 litres per second tested for a eight hour pumping period per day (58kl/day) currently serve both the 75m^3 and the 260m^3 reservoirs at Campsites D and E. Both boreholes are connected to a 75mmØ rising main from the clear water pump station at the purification plant that pumps water to the reservoirs located at Campsites D and E. The storage facility at Campsite D consists of a 55m^3 reservoir and 4 elevated JoJo Tanks. The storage facility at Campsite E consists of a 260m^3 concrete reservoir. The reservoir at Campsite E also supplies water via a 150mmØ gravity pipeline to Campsite C. From Campsite C the pipe reduces to a 65mmØ pipeline which gravitates to the Indoor Training Facility located approximately 2km east of the Rookpoort Dam. Water pressure at this facility is very low and requires upgrading.
Presently the two reservoirs mentioned above serve as the storage facilities for both domestic and fire water husage at Campsites C,D and E.

4.7.1.4 REQUIRED UPGRADING OF WATER RETICULATION NETWORK

New uPVC reticulation networks will be constructed for all Camps, refer to ***Appendix 6***.Pipeline routes must following existing infrastructure routes. New pipelines to follow road infrastructure.

4.7.1.5 EXISTING BULK SEWERAGE INFRASTRUCTURE

(i) Oxidation Ponds

The training facility currently treats its sewerage through the use of two Aerobic-Anaerobic Stabilization Pond systems.
The treatment ponds situated near the western boundary of the property services the existing Admin Camp, Alpha Camp and Bravo Camp as per the following specifications:
Admin Camp : 108.43
Alpha Camp: 78.37 ⇨ 265.17kl/day ADWF ⇨ 96 725 kl/year ADWF
Bravo Camp 78.37
The treatment ponds situated near the eastern boundary of the site services the Charlie Camp, Delta Camp and Echo Camp as follows
Charlie Camp: 78.37
Delta Camp: 30.55 ⇨ 187.29 kl/day ADWF ⇨ 68 361 kl/year ADWF
Echo Camp: 78.37
As the sewage enters the pond most of the solids settle to the bottom to form a sludge layer. At temperatures greater than 15°C intense anaerobic digestion of the sludge solids occurs: as a result, the thickness of the sludge layer depth is rarely more than about 250mm and often much less. Desludging is only required, possibly once every 10 to 15 years.

Both the Aerobic-Anaerobic Stabilization Ponds were not working at full capacity at the time of the investigation causing the dry sludge to accumulate within the primary ponds of the treatment plants. A reed bed pond system acts as the secondary pond of the treatment plant and it is evident that it was not in use for quite some time and most of the reeds were destroyed due to a lack of water and animals feeding from it.

The embankments of the pond system need some maintenance as trees started to grow on it and it can cause the embankment to collapse once filled with water.

Both treatment plants were fenced-off but animals such as cattle and other wild animals are allowed to enter the sites through the open gates.

Figure 7: Existing sewerage works flow chart

4.7.1.6 REQUIRED UPGRADING OF BULK SEWERAGE INFRASTRUCTURE

The following two alternatives have been identified which is being considered as part of this EIA Process:

(i) MAINTENANCE TO EXISTING OXIDATION PONDS

It was noted during the site investigation conducted by the project engineers that the current facility is not functioning effectively. The embankments require rehabilitation, the area must be fenced and access should be controlled to prevent animals from entering the facility. Proper wetland vegetation must be established to assist with the removal of pollutants from the effluent. It is assumed that the facility is not receiving enough water [in the form of effluent] due to several leakages and blockages in the sewer pipe network serving the oxidation ponds. Furthermore the facility is too big [ground coverage, ±5ha for Camp A&B and ±4.5 ha for Camp C,D & E] to allow it to function optimally. Should it be confirmed that the existing facility is the preferred method of treatment by the Deciding Authorities [DEA & DWA] the engineers will be required to provide an amended design specifying the size at which these ponds will function optimally. Lining of the existing facilities may also be necessary to prevent contamination of groundwater.

(ii) REPLACEMENT OF EXISTING FACILITY

The project engineers have identified an alternative system to be considered to replace the oxidation ponds. During the engineering investigation it was confirmed that water for irrigation of earthworks banks, communal parks and road reserves was required. This alternative would utilise the purified effluent for such irrigation purposes. This alternative proposes the construction of a modular type submerged media reactor wastewater treatment works with final effluent to comply with DWA General Limits that can be used for irrigation purposes.

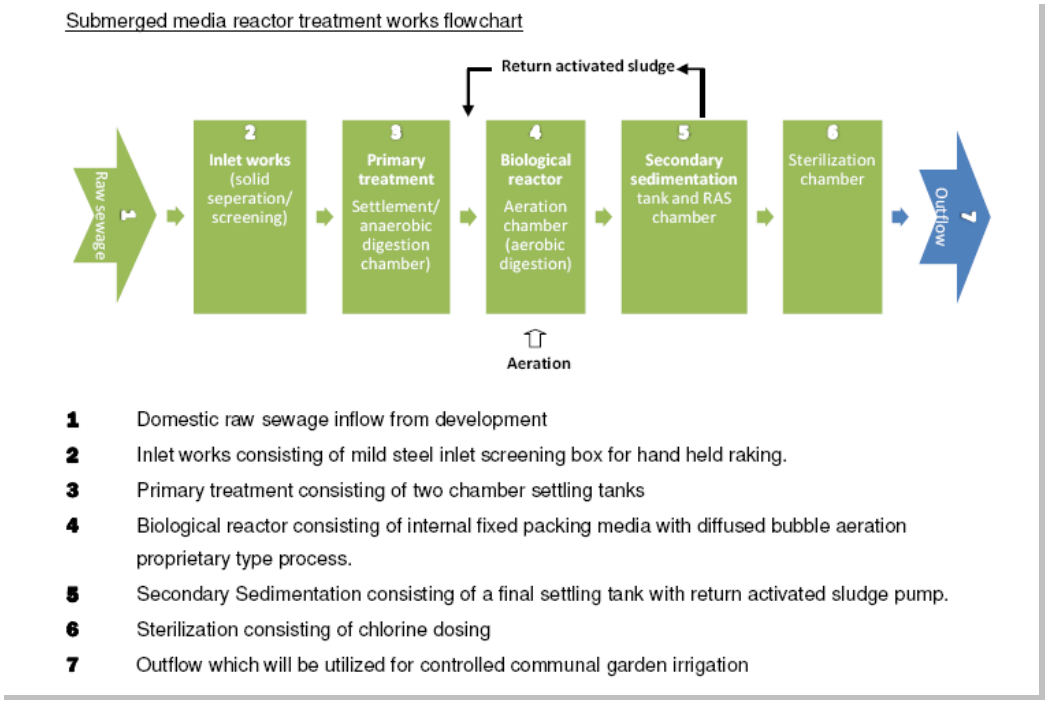

Figure 8: Submerged media reactor treatment works flowchart

DESIGN FLOW

The proposed Wastewater Treatment Works will be designed based on the Average Daily Dry Weather Flow [ADWF] and could be subdivided as follows:

Admin camp + Camp B:	100.8kl/day ADWF
Camp A, C,D & E:	104.5kl/day ADWF
Shooting range:	6kl/day ADWF

Each plant will further be subdivided to consist of similar modular units as follows:

Admin Camp + Camp B:	25 x 4 = 100kl/day plant
Camp A,C,D & E:	35 x 4 = 140kl/day plant
Shooting range:	3 x 2 = 6kl/day plant

The modular plant will:

- Enable a phased implementation approach to coincide with the development progress;
- Assist with maintenance whereby any module could be closed off;
- Assist with emergency pump breakdowns in any module whereby effluent can be redirected.
- Provide water for irrigation purposes.

The proposed treatment plant operates as follows:

First Phase: Screening takes place at the point of entrance in the Waste Water Treatment Plant [WWTP]. This can be done manually on a daily basis.

Second Phase: There are two anaerobic tanks. The first tank allows for digestion of sewerage and the separation of solids, i.e. those that settle and those that float. The middle cut of the effluent then flows through to the second tank. The second tank breaks down the fine sewerage particles and alters to carbon dioxide and water. This effluent then passes into the aerobic chamber for polishing. The de-nitrification cycle takes place in this phase. This function is responsible for the breaking down of nitrates to nitrogen gas.
Third Phase: In this phase the digestion takes place in an aerated environment. This phase is called aerobic digestion. Smaller solids are bio-degraded further Aerobic bacteria operates in this environment. The bacteria perform at their optimum in an oxygen enriched environment. Nitrification takes place in this phase.

Fourth Phase: Secondary settling takes place. The cell material and settle able solids settle in this phase and form the so-called 'sludge blanket'. When the blanket matures it is re-circulated to the primary settling tank in phase one to 'seed' or inoculate the raw sewerage entering into the plant and to alter the nitrates to nitrogen gas. This cycle is called the re-activated sludge and de-nitrifying cycle. This technology improves the efficiency of the process of the plant.
Fifth Phase: In this phase the final effluent is prepared for final discharge. The effluent is disinfected or sterilised to prevent any dangerous or harmful bacteria from entering the environment. Disinfection takes place by way of a chlorine contact tank with level control. The final effluent is discharged through a chlorine contact channel which is exposed to ozone to further enhance disinfection. The final effluent is stored in an irrigation chamber from where it is proposed to be utilised for irrigation purposes.

Power failure

The plant is designed to be isolated in 4 separate working extensions. In case of complete power failure:

- All flow must be diverted to the 1st sub-system which must be manually supplied by power through operating a stand-by generator;
- Flow is diverted to 1st sub-system by closing pen-stock gates to chamber 2,3,4 and closing butterfly valves linking sub-system.

Pump failure

In the event that pump failure occurs at any one of the sub-systems the following is proposed as part of the design:

- Isolate the sub-system where pump failure occurred by closing the pen-stock gate in the dividing chambers and closing the butterfly valves linking the sub-system;
- Repair broken pump as soon as possible.

Operator

An operator will be appointed for the treatment plant. The main duties of the operator will be to:

- Manually rake and clean the inlet grid;
- Ensure that the pumps are working and are in order and that there are no leakages at the system;
- Monitor chlorine levels.

Maintenance

The system has a low maintenance schedule. The float switches and pumps will be checked on a regular basis and will be removed for maintenance on a one-three year cycle/

Safety

The plant will be fenced and locked to prevent unauthorised entry.

4.7.1.7 EXISTING SEWER RETICULATION NETWORK

(i) SEWER PIPELINE NETWORK

Campsites A and B

The sewer reticulation systems for both Camp sites A and B consist of a 110mm Ø vitro clay pipe network from where it is collected into a 160mm Ø clay pipe and disposed into a sewer sump of approximately 12 m^3 in volume. The sewer sump location is east of Camp site B next to the soccer field. The 160mm Ø mainline discharged directly into the sump without any screening of the effluent and without a grit chamber that cause heavy particles such as sand to enter the sump that may affect the sewer pumps negatively.
According to the maintenance division of the institute, this sewer pipelines need to be upgraded as most of it are very old and because of the deterioration of the joint rubber seals of the pipes, large sections are blocked due to root intrusions. During the investigation at certain sections of the pipeline between Camp sites A and B, sewer spillages were found where manholes overflowed due to these blockages.

Campsites C, D and E

The sewer reticulation systems for Camp sites C, D and E consist of a 110mm Ø vitro clay pipe networks from where it is collected into a 160mm Ø clay pipe and disposed into the reed bed oxidation ponds just south of Camp Site C. According to the maintenance division of the institute, the sewer pipelines need to be upgraded as most of it is very old and due to the deterioration of the joint rubber seals of the pipes, large sections thereof are blocked due to root intrusions. Part of this mainline has been replaced with new pipes due to the blockages that appeared because of root intrusions or because of broken pipes in the system.

(ii) SEWER PUMP STATION AT CAMP SITE B

A 4,5 liters per second sewer dry-pump station with standby motor and pump have been installed at the sewer sump, pumping the effluent to the reed bed oxidation pond system that is situated south west of Camp site B. At the time of the investigation the sewer pump system was not working as both pumps were in default and the institute was waiting for the maintenance division from the Department of Public Works to rectify it. The sump was overflowing and the sewer flowed into the veld.

4.7.1.7 REQUIRED UPGRADE OF SEWER RETICULATION NETWORK

New PVC, solid wall heavy duty drainage networks will be installed for all camps.

4.7.1.8 EXISTING ROADS AND STORMWATER INFRASTRUCTURE

(i) ACCESS ROADS

Four main access roads from the Provincial Road P240/1 leading to each Campsite with a total length of 5,6km exits and has been constructed with a single layer of material (approximately 100mm thick) that serve as wearing coarse. Other access roads between the camp sites, shooting ranges, indoor training facility, magazine safe and urban centre consist of only gravel roads with a total length of approximately 9km. Provision for storm-water drainage were made at stream crossings consisting of pipe culverts, but most of these require urgent maintenance or replacement. [Refer ***Appendix 7*** for a copy of the road lay out]

(ii) STORMWATER

Presently all stormwater mainly consists of surface drainage. Several non perennial streams are located within the property boundary and these are identified as follows [Refer ***Appendix 8*** for the location of site floodlines]:

Stream 1: Situated near the western boundary flowing from north to south –passing the existing ammunition safe, crossing the P240/1 provincial road and passing the existing sewerage oxidation ponds.
Stream 2: Bisecting the existing Admin Camp and the new residential area flowing from north to south crossing the P240/1 provincial road towards Campsite B. This stream is also the main supply to the Rookpoort Dam.
Stream 3: Situated on the eastern side and flowing from north to south, passing the existing D Campsite as well as C and E, crossing the P240/1 provincial road towards the sewerage oxidation ponds serving these Campsites. A small weir within the area of Campsite E collapsed during a heavy rainstorm which restricted access to Campsite E. Campsite E can now only be reached from the Provincial Road.

4.7.1.9 UPGRADING OF ROADS AND STORMWATER INFRASTRUCTURE

(i) Access Roads

At this point in time the proposal only makes provision for the re-gravelling of access roads. Location of these roads and their lengths are included below. Please refer to ***Appendix 9*** for a copy of the preliminary design report which indicates the structural design standards unpaved rural roads.

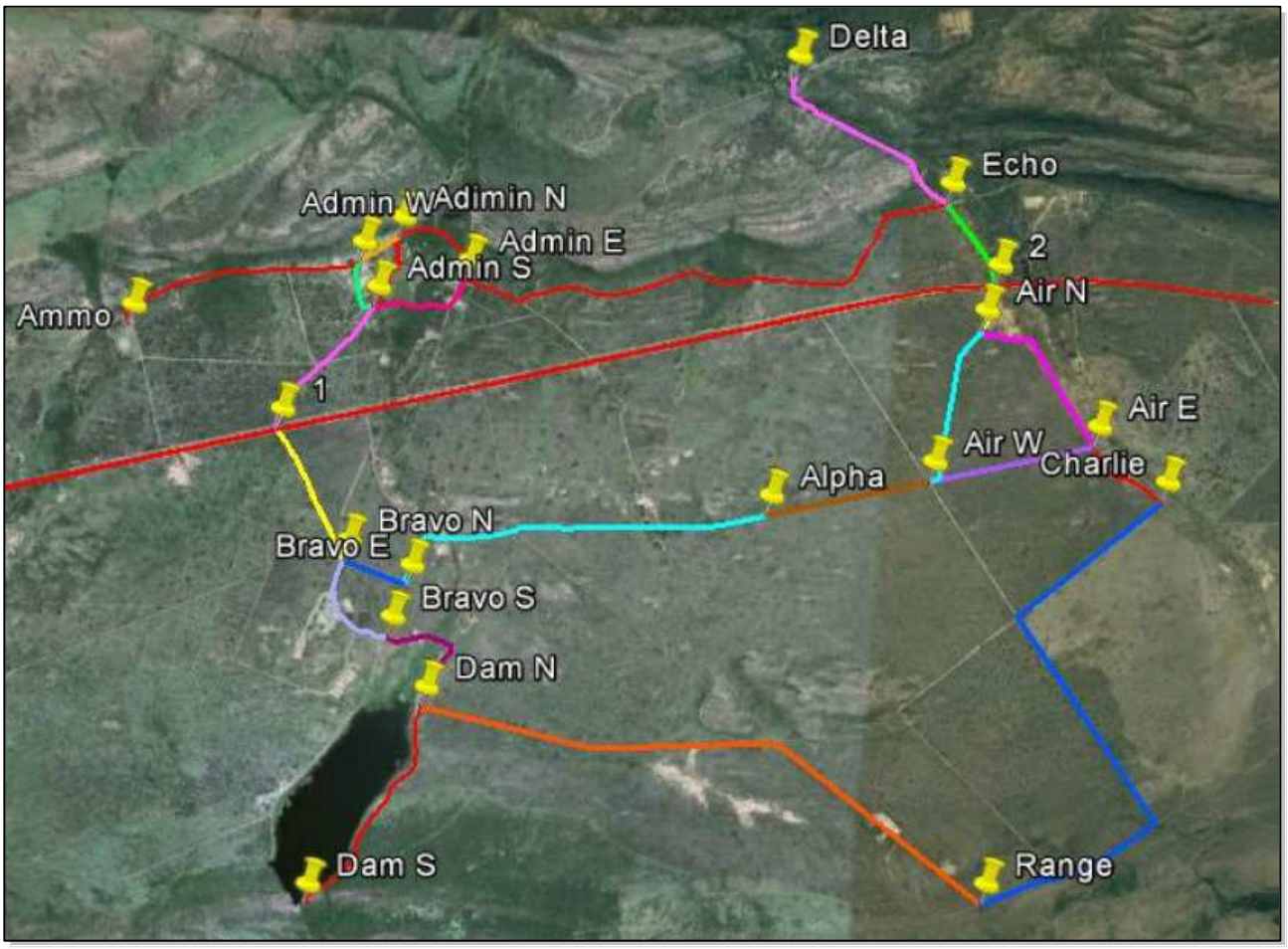

Figure 9 & 10: Access Roads and distances

Verdrag Road links

Road Name	Distance (m)
1 - Admin S	954
Admin S - Admin E	641
Admin E - Admin N	671
Admin N - Admin W	282
Admin W - Admin S	335
Admin N - Admin S	484
Admin W - Ammo	1537
Admin E - Echo	3213
Echo - Delta	1264
Echo - 2	561
2 - Air N	278
Air N - Air E	1062
Air E - Air W	1010
Air E - Charlie	557
Air W - Alpha	1000
Alpha - Bravo E	2403
1 - Bravo N	872
Bravo N - Bravo E	413
Bravo E - Bravo S	336
Bravo S - Bravo N	673
Bravo S - Dam N	833
Dam N - Dam S	1454
Dam N - Range	3711
Range - Charlie	3773
Total	28317

(ii) STORMWATER MANAGEMENT FOR CAMPS

A formal stormwater management plan is not available at this stage. Preliminary guidelines provided include the following:

Stormwater provision must be made for two stormwater management systems. The major and minor systems with recurrence intervals as given below.

Table 1

DESIGN STORM FREQUENCIES		
Land Use	Design storm recurrence interval	
Camp sites	Minor Storm	Major storm
	2 years	50 years

Since no detailed storm water plans are available at present, the following proposals should be considered in the design:

- Runoff is to be controlled as close to the source as possible.
- A formal stormwater master plan must be submitted to DWA for approval prior to construction commencing;
- Adequate vegetated buffers should be allowed for next to the internal roads to deal with run off as well as surrounding paved areas;
- Feed off points should be incorporated into the road (outlets) at least every 100 metres to prevent erosion from stormwater runoff from the compacted road ;
- General surface water must be prevented from ponding;
- Erosion control measures such as gabion/reno mattresses must be implemented at outlet points as well as energy dissipaters.

(iii) STORMWATER DRAINAGE FOR ROADS

Three types of drainage structures have been identified for the project:

- Major culverts categorised because of road strategic importance, flood magnitude and size of stream crossing with a design flood peak return period of 10 years;
- Minor culverts located at stream crossings, with a design flood peak return period of 5 years;
- Lesser culverts located along road for erosion prevention measures.

4.7.1.10 WASTE DISPOSAL

Domestic waste is removed by an independent contractor 'Goudveld Bottel Beurs en Afval' on a weekly basis. The waste is disposed of at the Thabazimbi landfill site. An agreement to use the lanfill site is in place between the Department of Public Works and the Municipality. ILA is in the process of obtaining a copy of this agreement letter. Skips are removed on a weekly basis. These skips are located at the Admin Bravo and Delta Camps. Additional skips will be provided at all the new facilities. It is also recommended that a recycling systems is implemented at the point of disposal on site.

4.7.2 MANAGEMENT OF SERVICES

The municipality will not undertake the provision of bulk services; therefore, all services will be installed and maintained by a management company acting on behalf of the SAPS training facility appointed by the Department of Public Works.

4.7.3 ELECTRICAL ENGINEERING SERVICES

Pano JB Electrical Engineering Consultants were previously involved with the planning of the proposed expansions, and provided the following information with regard to bulk electrical supply:

- Electricity is currently provided by Eskom from the Vaalwater sub-station to the respective camp areas, and there are currently 14 transformers that feed the existing facilities.
- These transformers will be consolidated and it is proposed that a new 2MVA substation be constructed for the expanded facilities, as the expected demand will be in the range of 1,439,107VA.

SECTION 5: IDENTIFIED ALTERNATIVES

Regulation 28 (1) (c) & (j)

5.1 IDENTIFICATION OF ALTERNATIVES

5.1.1 LOCATIONAL ALTERNATIVES

No location alternatives exist as the upgrades and additional facilities relate to the existing training facility which has been operating on the subject properties for the past 20 years. The land belongs to the Applicant.

5.1.2 LAND USE ALTERNATIVES

The location of the subject property in a remote rural area with very limited development makes it ideal for the purposes of the SAPS Training Institute, which requires a secluded and private setting. The nature of the training facilities for the SAPS furthermore requires that the respective camps on the site must be situated well apart and in dense vegetation, in order to prevent visual contact between the camp areas. The site is therefore extremely desirable in terms of its size, locality and nature for purposes of the SAPS training facilities.

The land use proposal is considered in line with the objectives of the Environmental Management Zones of the Waterberg EMF as there is a strong parallel between the site and a conventional nature reserve. No land use Alternatives are being considered.

5.1.3 LAY OUT ALTERNATIVES

5.1.3.1 DETERMINATION OF RIPARIAN NO GO BUFFERS

The lay out as included in ***Appendix 2*** was developed taking into consideration the location of existing facilities and to meet the requirements of the specialised training undertaken at the facility and to ensure civilian safety e.g.[location of shooting range].

As a Flora and Fauna investigation as well as a floodline determination has now been undertaken and site sensitivity can be mapped the following Alternatives relating to the placement of new facilities will be investigated as part of the EIA to ensure limited impacts to the biophysical environment, whilst still ensuring that legally required safety regulations and measures can be achieved. The determination of adequate buffers next to perennial and non-perennial streams is important as these buffer zones are essential to ensure healthy functioning and maintenance of aquatic ecosystems and also function as wildlife corridors and refugia.

The following Alternatives relating to the current proposed lay out of new facilities and infrastructure will be investigated.

(i) EXISTING CAMP D

Additional accommodation units, a lecture facility and administrative block is proposed as part of the upgrade at Camp D. The area is already partly developed and well maintained. The area is affected by a floodline. The original lay out placed the new administration block below the floodline. The lay out was adjusted following receipt of the floodline determination and the administration block was relocated out of the floodline. It is recommended that a riparian zone be delineated and an appropriate buffer be specified by a qualified specialist. The location of facilities within camp D will then be revisited to ensure that no facilities encroach on this buffer area. The 1:100 year floodline does not necessarily cover the same area as the delineated riparian zone. By identifying the riparian zone and providing a no go buffer these sensitive areas can be protected in the long term.

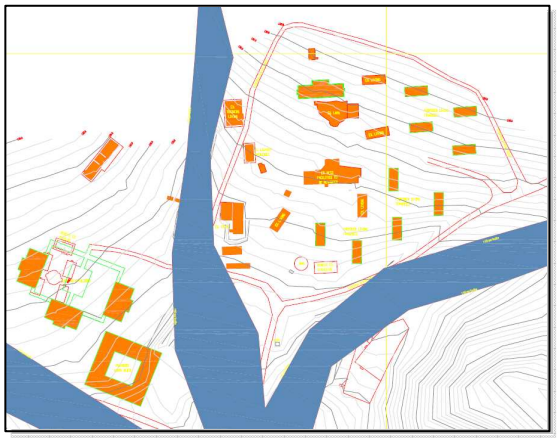

Figure10: Camp D is affected by a 1:100 year flood line as indicated in blue in this figure. Also refer to Appendix 8 for an A3 drawing indicating flood lines determined for the entire training facility

Placement of additional reservoir and pipeline should take cognisance of the sensitive riparian zone.

(ii) EXISTING ADMINISTRATION CAMP AND NEW RESIDENTIAL AREA

Care should be taken that the upgrade development does not encroach into the riparian zone or the buffer zone that should be at least 32 m. (Note: The buffer zone recommended for areas outside the urban edge is usually 100 m, but in this particular case this is not feasible, as the developed area, or at least the disturbed area of the A Training Camp is already within the 100m of the riparian zone). It is therefore recommended that the riparian zone be formally delineated and an appropriate buffer determined to ensure that degradation of the riparian zone is avoided. The lay out should be adjusted accordingly based on the outcome of the delineation.

Figure 11: Camp D is affected by a 1:100 year floodline as indicated in blue in this figure. Also refer to Appendix 8 for an A3 drawing indicating floodlines determined for the entire training facility

(iii) WASTE WATER TREATMENT WORKS SERVICING CAMPS C,D AND E

The pond is affected by the 1:100 year floodline. The EIA will investigate the impacts associated with the current location of this WWTW, as well as alternative methods of sewerage treatment. It will be confirmed in the EIA whether the preferred proposal entails maintenance to the existing system in its current location, whether the facility should be relocated or whether an entirely new WWTW would be preferable. Should the final recommendation specify that the existing system be retained subject to certain maintenance upgrades is recommended that the lay out of the pond be altered in order to ensure that no part of the system is

situated below the 1:100 year floodline as this could result in surface water contamination during rain events.

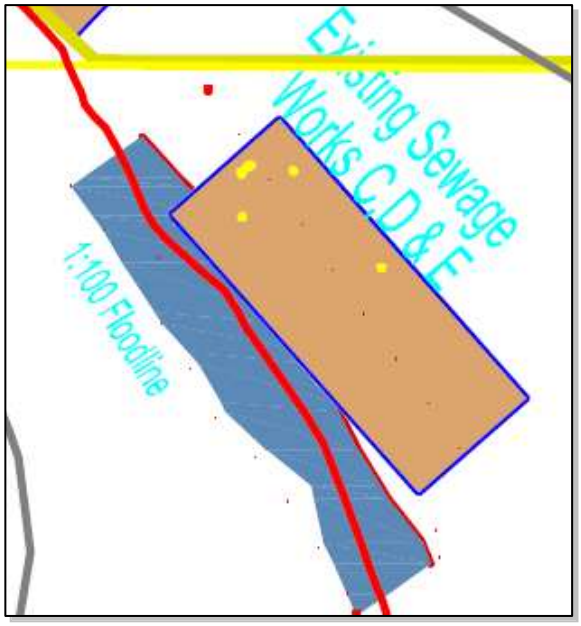

Figure 12 & 13: A view of the oxidation pond situated toward the eastern boundary

5.1.3.2 PLACEMENT OF FACILITIES RELATING TO SITE SENSITIVITY, SAFETY REQUIREMENTS AND TRAINING SPECIFIC REQUIREMENTS

(i) NEW SHOOTING RANGE

A new shooting range is proposed toward the south eastern boundary of Buffelspoort 459-KQ. The location is near the slope of the mountain. Two protected tree species the *Sclerocarya birrea* (marula) and *Philenoptera violacea* (apple-leaf) are present in this location. Care should be taken to avoid encroachment of the shooting range onto the mountain slope. The EIA will investigate whether it will be feasible to move the shooting range further northwards away from the slope or if any other location within the property boundary may provide the required physical features to ensure that the facility meets safety requirements whilst limiting impacts to the biophysical environment and adjacent properties.

(iii) CONSTRUCTION OF ACCESS TO CAMP C

Access to the existing Charlie camp is available reaching the Camp from its southern boundary. The preliminary roads proposal provides an additional access closer to the northern boundary of the C Camp. This will imply an additional crossing of the stream. During the EIA phase the need for an additional access will be investigated further. From an environmental perspective an additional stream crossing is not preferred.

5.1.3.3 CREATION OF RECREATIONAL OPEN SPACE

The Alternative will be investigated to provide a formal recreational Open Space Plan which can be utilised by trainees in their time off for purposes such as hiking and bird watching. Such Open Space could also serve to provide information on the biophysical environment. Information boards can be erected along hiking routes which inform on the location of protected tree species and other flora and fauna species confirming their conservation status and importance, biology, habitat and management requirements.

5.1.4 DESIGN ALTERNATIVES

5.1.4.1 STORMWATER MANAGEMENT

Management of stormwater will be investigated further during the EIA Phase. This will include:

- The use of a formal piped stormwater system vs surface drainage;
- Use of attenuation ponds to assist with breaking the speed of run off and restricting pollutants from entering the watercourses on site;

- Use of vegetated buffers along roads and paved areas.

The above Alternatives will be investigated to ensure that the final proposal identifies specific measures to be included in the formal stormwater management plan which will restrict the risk of erosion, contamination of surface water through run off pollutants and to prevent sedimentation of watercourses as well as destruction of sensitive habitats.

5.1.4.2 MINIMISING VISUAL IMPACTS

(i) LIGHTING DESIGN

During the EIA investigation the following design alternatives will be considered for new trainer and student accommodation, lecture facilities, administrative buildings and other recreational facilities to minimise impact on faunal species and associated visual impacts to surrounding properties [if any].

- Use of directional lighting;
- Use of outside lighting for paths, roads and security; and
- Type of lighting which will be least intrusive yet effective and financially feasible.

5.1.4.3 REHABILITATION

(i) SHOOTING RANGES

With the development of the new shooting range the existing shooting ranges could prove redundant. The possibility of decommissioning the existing shooting ranges and rehabilitating these areas will be investigated, this will include the possibility of closing and rehabilitating the road that provides access to the shooting range situated east of the Delta Camp which is located in a sensitive area.

5.1.5 TECHNOLOGY ALTERNATIVES

5.1.5.1 TREATMENT OF SEWERAGE

The following two alternatives have been identified which is being considered as part of this EIA Process:

- Maintenance to existing oxidation ponds [Refer to Section 4 for details]
- Replacement of existing facility with a submerged media reactor WWTP [Refer Section 4 for details]

During the EIA phase impacts associated with the two proposals will be investigated in depth and the preferred Alternative will be recommended based on the findings of the impact assessment which will consider risks associated with ground and surface water contamination, location, maintenance requirements & financial implications. Another factor that will be considered in identifying the preferred Alternative is the need for irrigation and fire water which the submerged media reactor system will be able to provide.

TABLE 1

Technology Alternatives			
Oxidation ponds		**Submerged media reactor**	
Advantages	**Disadvantages**	**Advantages**	**Disadvantages**
- Natural method of decomposition - Operation and maintenance is simple - Efficient in removing BOD if designed properly	- Odours - Mosquito and other insect breeding ground - During rainy season or in cloudy weather sewerage can become septic - Difficult to predict control ammonia levels - No water for irrigation - Design flaw area to	- Low maintenance schedule - Backup system provided in case of pump or power failure, - Efficient in removing BOD - Closed system no odour or insect infestations; - Limited risk of contamination of water bodies;	- Water table could be contaminated if effluent quality is not properly managed; - Costs associated with decommissioning and rehabilitation of existing system

	large to deal effectively with amount of effluent input [dried up]; Contamination monitoring difficult Potential contamination risk to waterbodies	Regulating and monitoring effluent quality becomes easier; Provision of fire and irrigation water; Low use of electrical equipment save on electricity	

5.1.6 OPERATIONAL ALTERNATIVES

During the EIA phase the following activities will be investigated relating to the operation of the training facility which could be impacting on the biophysical environment:

- Status quo of a veld management plan;
- Night driving by personnel and trainees.

5.1.7 OTHER ALTERNATIVES

5.1.7.1 PROTECTION OF THE NATURAL ENVIRONMENT

The EIA will investigate the possibility and the appropriate legislative tools for formally protecting the area under the Protected Areas Act (Act 57 of 2003).

5.1.8 THE NO-GO ALTERNATIVE

In essence, the no-go alternative would ultimately imply that the state of the environment would be retained as it is presently, with obvious advantages and disadvantages to the natural environment.

The Department of Environmental Affairs (DEA) stresses that the no-go alternative should be considered in cases where the proposed development will have a significant negative impact that cannot be effectively or satisfactorily mitigated against.

The no-go alternative means that the current status-quo is maintained. In the case of the development proposal, this would imply the following;

- The training institute cannot be upgraded to provide additional training facilities and as such the demand for an increase in the facilities capacity to provide training to the SAPS National Forces will not be met;
- Additional employment opportunities will not be available;
- If the newly proposed shooting range is not developed the other shooting ranges will remain in operation;
- It is proposed that the Environmental Management Programme prepared as part of this Application process include mitigation measures applicable to the operation of the existing facility which is currently not subject to Environmental Monitoring. Should the development not proceed a formal Environmental Management Plan will not be applicable which is anticipated to contribute to the conservation of the area;
- No monitored clearing of vegetation will take place;
- It is anticipated that stormwater infrastructure which is currently in a poor condition will not be upgraded.

Authority is being sought for the expansion of existing activities. The site provides the perfect conditions required for the specialist training provided. Alternatives relating to the design lay out and technology associated with the expansion and maintenance activities have been identified. The EIA Phase will investigate Alternatives to ensure the final recommendation consists of a proposal which will result in limited impacts to the environment.

The No-Go Alternative will be revisited during the EIA Phase following receipt of stakeholder input on the

Draft Scoping Report and further specialist investigation. However based on the findings of the investigation during this Scoping Phase it is anticipated that the No-Go Option can be justifiably dismissed.

SECTION 6: DESCRIPTION OF THE ENVIRONMENT

Regulation 28 (1) (e)

6.1 BIO-PHYSICAL ENVIRONMENT

6.1.1 TOPOGRAPHY AND DRAINAGE

The following information is extracted from the Reconnaissance Report compiled by Soilkraft CC.

The larger study area covers a broad valley located between two mountainous ridges. The northern ridge located on the farms' boundaries is associated with the Sandriviersberge, whilst another mountainous ridge is located on the southern border of the two Buffelskloof farms. The northern mountainous ridge has a maximum peak of 1802m above mean sea level. The peak is known as Skilpadkop. A slightly higher peak (1827m above mean sea level) is located at beacon 23 just north of the study area, but outside the premises. A maximum altitude of 1658m prevails on the south eastern border of the farm Buffelspoort 459KQ, as recorded at beacon 13. The mountainous ridges are characterised by steep gradients and cliffs.

The central portion of the facility spans a broad valley between the two mountainous ridges. The valley is broad with no major deep incisions. A number of relatively small non-perennial streams originate in the study area and ultimately accumulates into a confluence of the Sand River. One of the tributaries is the Buffelskloofspruit, which feeds the Rookpoort dam on the facility premises.

Areas affected by floodlines is the existing D Training camp which is traversed by several streams. A portion of the oxidation ponds servicing Camps C,D and E are situated within the floodline [Refer to ***Appendix 8*** for a copy of the floodlines indicated in relation to the existing and proposed new facilities]

6.1.2 REGIONAL CLIMATE

Recorded temperature ranges in the vicinity of Thabazimbi vary from a minimum of -3,7ºC in winter time to a maximum of 36,0ºC in summer. The region experiences fairly frequent (light) frost during winter times.

6.1.3 RAINFALL

Mean annual rainfall in the region ranges from 450mm to 750mm, depending on the relief and topographical location.

6.1.4 VEGETATION

Eco-Agent CC Ecological Consultants were commissioned to undertake a Plant and Mammals Species Richness and Habitat Assessment. Herewith extracts from the report compiled by Eco-Agent CC Ecological Consultants ***[Refer Appendix 10 for a copy of the Report and associated sensitivity map]***

The site is located in a wooded valley between mountain ranges to the north and south, with the site boundaries along the summits. The mountain ranges are characterized by impressive rock faces and wooded slopes. A major feature of the site is the Rookpoort Dam located in a mountain gorge close to the southern boundary.

Acocks (1953) classified the plant associations of the site and region as Sour Bushveld veld type. Low and Rebelo (1996) defined the plant assemblage in the district as Waterberg Moist Mountain Bushveld veld type. More recently Mucina and Rutherford (2006) identified the area as answering to the definition of their Waterberg Mountain Bushveld vegetation type, probably with elements of the Central Sandy Bushveld vegetation type.

All 11 sites which are proposed for development or upgrading were assessed.In general the vegetation of the eleven sites are very similar, representing Central Sandy Bushveld. The vegetation and plant species composition of the eleven sites are, however, described separately.

(i) EXISTING ADMINISTRATION CAMP (TO BE UPGRADED)

This camp is situated at approximately 24º 32' 57"S; 27º 44' 37"E. The area is already developed and the natural vegetation has partly been cleared and altered. Although the shrubby bush and ground cover have been cleared, many tree species still remained. The site was initially probably chosen for the camp due to the large trees that occurred there.

The species richness of this area is high, with 2 protected tree species but no red data species present.

It was concluded that this area is already developed and the upgrade can be supported.

Figures 14, 15 & 16 provides different views of the Existing Admin Camp

(ii) NEW RESIDENTIAL EXTENSION TO EXISTING HOUSING

This area is situated directly east of the Existing Training Camp A, across the spruit at approximately 24º 33' 01"S; 27º 44' 58"E. The area is already developed and the natural vegetation has partly been cleared and altered, for the construction of housing. The site is adjacent to the spruit, though the newly proposed extension are located east of the existing houses, away from the spruit into bushveld. The steep slopes of the mountain are situated directly north of the proposed development. The vegetation is dense bush, about 5-6 m tall, covering 60% and dominated by *Dichrostachys cinerea*.

Figure 17: The dense bush at the site proposed for new residential development at A: Training Camp

The species richness of this area is high, with no protected tree species and no red data species present. The area is partly already developed and the dense bush is degraded and encroached by *Dichrostachys cinerea*.

The upgrade can be supported, though no development closer to the spruit or closer to the mountain slopes will be supported.

(iii) NEW CAMP E TRAINING AREA

This area is situated at approximately 24º 33' 47"S; 27º 46' 24"E, on Groenfontein, at the current cross-roads leading to the D Training Camp. The vegetation is dense bush, similar to that of Site 2, about 5-6 m tall, covering 60-70% and dominated by *Dichrostachys cinerea*. A power / telephone line transects the site, where the vegetation has been cleared. The general impression is that the vegetation is degraded and encroached by *Dichrostachys cinerea*

Figure 18 & 19: Disturbed vegetation at the proposed new E Camp

The species richness of this area is high, with no protected tree species and no red data species present. The dense bush is degraded and encroached by *Dichrostachys cinerea*.

The development can be supported.

(iv) EXISTING D TRAINING CAMP (TO BE UPGRADED)

There is an existing Training Camp (D), situated towards the north on Groenfontein, at approximately 24º 31' 20"S; 27º 43' 43"E. This Camp is located in a small kloof into the mountain. A small spruit drains down the kloof. The area in general would be regarded as sensitive, though the existing facilities are already in use for a long time. Fortunately the existing development covers a very small area. The camp area is for training of senior police officers; the camp terrain is well developed, neat and well kept. The existing buildings have thatched roofs. It is planned to upgrade the existing facilities at D Camp.

The site is located between the tributaries of two small spruits, within the mountains, which causes the site to be ecologically sensitive. The natural vegetation has partly been cleared and altered, for the construction of the existing camp. Within the area of the camp the vegetation has partly been cleared, lawn grass established with mainly large indigenous trees remaining. Some exotic (alien) trees and other garden plants have been planted in the gardens. These are not all recorded for the survey. Little grass and forb species remained due to the maintenance of the gardens.


Figure 20 & 21: The existing D Training Camp – developed area& natural area

In spite of the bush clearing and the well kept garden, the species richness of indigenous species is high, particularly for the tree species, but no protected tree species and no red data species were recorded.

The area is already partly developed and the area is well maintained. It is strongly recommended that the new developments must not go closer to the spruits, remaining outside the riparian zone with a buffer zone. It is further suggested to avoid developing on to the mountain hillsides, try to avoid clearing large areas of natural bush. Furthermore, try to keep as many as possible of the large trees, to maintain the bush atmosphere.

Should these mitigation measures be adhered to, the upgrade of the facility can be supported.

(v) NEW AMMUNITION SAFE AT EXISTING SAFE

There is an existing ammunition safe towards the west of the main A Camp. This area is situated at approximately 24º 33' 10"S; 27º 43' 43"E, on Buffelskloof. A new additional safe is planned directly east of the existing safe. The vegetation is tall tree veld 5-7 m tall and covering about 50%. For this facility all vegetation will have to be cleared (safety measures). The vegetation is dominated by *Burkea africana* and *Dichrostachys cinerea*. The species richness of this area is high, with no protected tree species and no red data species present. The dense bush is well developed with many large trees.

The development can be supported, considering that this type of vegetation is not rare and conserved within the larger area of the site.

(vi) EXISTING B TRAINING CAMP (TO BE DEMOLISHED AND REPLACED)

This area is situated south of the Thabazimbi-Alma road, just north of the Rookpoort Dam, on Buffelskloof, at approximately 24º 34' 08"S; 27º 44' 24"E.

The area is already developed and the natural vegetation has partly been cleared and altered, for the construction of housing and other facilities. All these facilities are temporary, though some alien plants have been planted in the gardens. The existing camp is surrounded by natural, though somewhat disturbed, bushveld. This camp will be demolished and replaced by a new facility. Currently the facility closest to the Rookpoort dam edge is about 200 m. The new facility will not be closer to the dam than the current facility. The vegetation has partly been cleared for the existing facility, though the new camp will extent into natural bush.


Figure 22: The existing B Training Camp and surrounding natural bush areas

(vii) NEW SHOOTING RANGE AND ADMINISTRATION BLOCK

This area is situated at approximately 24º 34' 59"S; 27º 45' 36"E, on Buffelspoort, at the foot of the north-facing slopes of the mountain. The mountain forms a safe background for the shooting. The vegetation is dense bush, about 3-5 m tall, the taller trees cover about 5% while the denser shrub layer covers about 30%. *Combretum apiculatum* and *Acacia caffra* are prominent trees. The protected trees *Sclerocarya birrea* (marula) and *Philenoptera violacea* (apple-leaf) are present on this site.


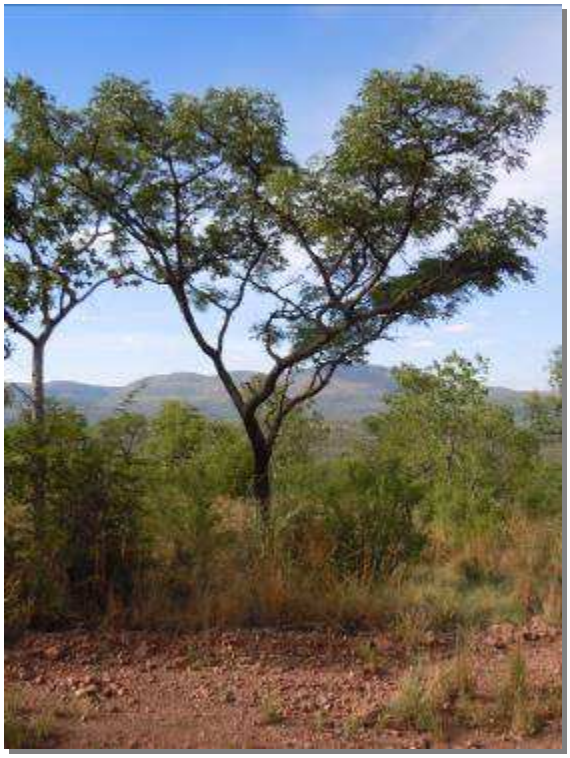

Figure 23&24: Vegetation on the foot slope at the site of the proposed new Shooting Range

(viii) NEW A: TRAINING CAMP

This new camp is situated on an existing tented camp, south of the Thabazimbi-Alma road, on Buffelskloof, at approximately 24º 33' 48"S; 27º 45' 36"E.. The temporary tented camp was built in an area with clumps of large Tamboti trees and an unique plant species composition. Typical bushveld vegetation surrounds the tall tree clumps. The vegetation has partly been cleared for the existing tented facility, though the new camp is proposed to extend into natural bush.

It is suggested to move the position of the new camp slightly into the surrounding bushveld in order to protect the tall tree bush clumps of Tamboti trees. The development can be supported.


Figure 25 & 26: A view of the area proposed for establishment of the New A Training Camp

(ix) NEW ADMINISTRATION BUILDING AND EXTENSION THE EXISTING LANDING STRIP

The existing landing strip is situated south of the Thabazimbi-Alma road, between the existing C Training Camp and the proposed new A Training Camp, on Buffelskloof, at approximately 24º 33' 20"S; 27º 47' 00"E. This landing strip stretches north-west to south-east. The new proposed extension will stretch north-east to south-west, at a right angle to the existing strip. The proposed administration building is close to the junction of the two landing strips. The natural vegetation is fairly open shrubby bushveld, more suitable for landing aircraft than the surrounding taller bushveld.


Figure 27 & 28: The area of the existing& newly proposed Landing Strip

The species richness of this area is medium, with no protected tree species and no red data species present. ***The development can be supported.***

(x) NEW SEWER LINES

Three new gravity fed sewer lines are proposed. These are in addition to the existing sewer lines.

FROM THE EXISTING A TRAINING CAMP TO THE EXISTING WESTERN SEWAGE WORKS A & B

This line runs from the existing A Training Camp in a south-westerly direction through the bushveld vegetation on Groenfontein, and then crosses the Thabazimbi-Alma road to the Sewage Works situated on Buffelskloof.

The following two plant communities are crossed:

Tall Mixed Bushveld north of the Thabazimbi-Alma road. The species richness of this area is high, with 2 protected tree species but no red data species present. Where-as this is a linear development, many species will be encountered, though this is a narrow transect and most larger trees can be avoided. Care should be taken to avoid the protected trees. Note that a permit from the Dept of Agriculture and Forestry will be needed should any protected tree be removed.

Bushveld south of the Thabazimbi-Alma road

The species richness of this area is high, with no protected tree species and no red data species present. Where-as this is a linear development, many species will be encountered, though this is a narrow transect and most larger trees can be avoided.

FROM THE NEW A: TRAINING CAMP AND FROM THE ADMINISTRATION BLOCK AT THE LANDING STRIP TO THE EXISTING EASTERN SEWAGE WORKS C, D & E

This sewage line is proposed to run from the new A Training Camp (currently the tented camp) directly eastwards, all along the Groenfontein-Buffelspoort boundary line, to the existing Sewage Works C, D & E. A short line is also planned from the proposed Administration Building at the Landing Strip to join the existing sewage line that runs from the existing E Training Camp to the existing Sewage Works C, D & E.

The species richness of this area is medium, with no protected tree species and no red data species present. The development can be supported.

(xi) FARM ROADS

Some of the farm roads may have to be upgraded. The vegetation along the roads corresponds to the specific sections described above. It should however be noted that should protected trees be in the way of the construction, a permit for their removal will be have to be obtained from the Dept of Agriculture and Forestry.

(xii) RIPARIAN ZONES OF SPRUITS AT A: TRAINING CAMP

A spruit that originates in the mountains north of the existing A Training Camp runs southwards and feeds the Rookpoort Dam. This spruit runs between the existing A Training Camp and the Residential Area east of A Training Camp. It is proposed that both these two facilities be upgraded. The spruit, including both western and eastern riparian zones, is about 100 m wide. Care should be taken that the upgrade development of especially A training Camp does not encroach into the riparian zone or the buffer zone that should be at least 32 m. (Note: The buffer zone recommended for areas outside the urban edge is usually 100 m, but in this particular case this is not feasible, as the developed area, or at least the disturbed area of A Training Camp is already within 100 m of the riparian zone).

Care should be taken that all the possible developments in this area should ensure that no degradation of the riparian zone and no enhanced erosion are caused by the development.

(xiii) RIPARIAN ZONES OF SPRUITS AT AT D TRAINING CAMP

Training Camp D is located in the mountains, with two small drainage lines running west and south of the foot print area. Although these two drainage line are quite small, they form part of the spruit system and no development should encroach into the riparian zones. The existing developments are very close to the

riparian zones. The new upgrade developments should not encroach into the riparian zones, and remain as indicated on the proposed development plans.

6.1.5 MAMMAL HABITAT ASSESSMENT

Herewith extract form the Plant and Mammals Species Richness and Habitat Assessment compiled by Eco-Agent CC Ecological Consultants (Refer ***Appendix 10*** for full report).

All four major mammal habitats are present on the site, i.e. terrestrial, arboreal, rupiculous and wetland / aquatic. The development will not affect the mountainous terrain, or the dam and wetland areas.

Of the 86 mammal species expected to occur on the study site no less than 32 were confirmed during the site visit. This remarkable species richness is only possible within savannahs with high vertical stratification, and is comparable to formal conservation areas in similar woodland ecotypes (viz. Marakele National Park) with all four habitat types amply present.

It should be noted that potential occurrences is interpreted as to be possible over a period of time as result of expansion and contractions of population densities and ranges which stimulate migration. All feral mammal species expected to occur on the study site (e.g. house mice, house rats, dogs and cats) were omitted from the assessment since these species normally associate with human settlements. Mega carnivores and herbivores have long since been extirpated to favour livestock farming. Latterly large tracks of land in the district have been re-devoted to game farming and eco-tourism. On the site itself many medium-sized mammals occur naturally (viz. primates, warthog, kudu impala, duiker, steenbok, leopard, and hyena) whereas others have been re-introduced (giraffe, zebra).

Most of the species of the resident diversity are common and widespread (*viz*. scrub hares, mole rats, grass mice, multimammate mice, gerbil, the bats listed, genets, yellow and slender mongooses, duiker, steenbok and others). The Rooiberg caves in the vicinity of the site are a well-known bat caves harbouring a number of cave-dwelling species (*viz*. *Miniopteris schreibersii* and *Rhinolophus clivosus*). Others mammal species are not common (such as leopards and brown hyenas): several large mammals have been reintroduced.

Relative high species richness is due to the extensive size of the natural areas on the site, and of the rural nature of the entire district. The conservation status of the site is deemed “Excellent”, which also contributes to species richness. The high species richness of the entire site is enhanced by high habitat diversity, and a high connectivity allowing near-to-natural migration. Veld fires are avoided or strictly controlled and this means that the quality of environmental conservation from a mammal perspective can be ranked a good. Connectivity with neighbouring areas is high and migration is virtually unhindered. The many drainage lines and especially the streams function as important dispersal corridors.

(i) RED LISTED MAMMALS

Twenty-one of the species assemblage is Red Listed. Those ranked as “Data Deficient” have not been adequately studied in their natural environment and quantitative data are lacking to express a reasoned opinion regarding their conservation status. They are therefore ranked as “Data Deficient” as a precautionary measure.
The main reason for species to become endangered is habitat destruction. Considering the extensive and pristine character of the site and district, habitat destruction is not a consideration and it can be assumed that Red Listed species occur at natural levels.

No other Red Data or sensitive species are deemed present on the site, either since the site is too disturbed, falls outside the distributional ranges of some species, or does not offer suitable habitat(s).

Some of the species that are present or have a high probability to occur on the site includes: *Elephantulus myurus* (Eastern rock elephant shrew), *Lepus saxatilis* (Scrub hare), and *Hystrix africaeaustralis* (Cape porcupine).

The assessment concluded the following:

- The planned development will not detract significantly from any of the ecosystems or habitat types defined on the site
- No loss or displaced of threatened or protected mammals is anticipated
- Loss of mammal habitat will, relatively to the overall size of the property, be insignificant on new developments and not applicable to existing facilities to be upgraded.

(ii) RECOMMENDED MITIGATION MEASURES

It is suggested that

- Building rubble is removed from the property
- That the trench for the new gravity feed sewage line is filled, with topsoil replaced.
- That planting of alien plants for landscaping is avoided in favour of endemics.
- Existing and new roads could be the cause for erosion, and it thus suggested that appropriate precautions are taken.

The intended development will not result in a loss of ecological sensitive and important habitat units, ecosystem function (e.g. reduction in water quality, soil pollution), loss of mammal habitat, nor of loss/displacement of threatened or protected species.

6.1.6 GEOHYDROLOGY

WSM Leshika was commissioned to conduct a Hydrogeological Evaluation on the properties under consideration. Herewith extracts from the report refet to ***Appendix 11*** for full report.

(i) PHYSIOGRAPHY AND DRAINAGE

The site is located mainly in the A24G quaternary catchment with a small portion in the upper A24H catchment and covers the middle upper reaches of tributaries of the Sand River, which eventually drains into the Crocodile River. The area can be described as hilly along the southern slopes of the Sandrivier berge in the north with a flattish central valley and a lone of ridges forming the southern boundary. The relief varies between 1800 metres above mean sea level along the Sandriviersberge in the north to about 1080 on the western boundary where a tributary of the Sand River exits the property.

(ii) EXISTING BOREHOLE DATA

Six existing boreholes were said to exist on site. Yields have been estimated by considering the pump head gear and discharge pipe sizes. It is recommended that these boreholes be tested to determine their sustainable yields.

(iii) AQUIFERS

The main aquifers in the area are thought to be fractured and weathered aquifers in the Alma formation rocks and along the sill and dyke contact zones. The dykes often form groundwater barriers.

(iv) AQUIFER STORAGE

The aquifer storage is difficult to determine. As the predominant aquifer type is known to be a fractured and weathered aquifer, the storage is estimated from Vegters Maps to be very low or less than 0.001

(v) GROUNDWATER LEVELS AND FLOW

Although no water levels could be measured water levels in the area are expected to be less than 15 metres below ground level. Groundwater flow is thought to follow a subdued form of the surface topography, i.e flow in a southerly and westerly direction towards the Sand River.

(vi) RECHARGE AND ESTIMATED SUSTAINABLE ABSTRACTION POTENTIAL

Recharge can be described as the replenishment from rainfall to the aquifers. Information from the Groundwater Resources Assessment Study (GRA II) gives average annual recharge as about 8mm with about 4mm contributing to the base flow in the rivers. Taking drought periods into account the sustainable volume of groundwater that can be abstracted is estimated to be 210 000m^3/annum or 580m^3/day.

(vii) WATER QUALITY

The groundwater quality is expected to be good (Class 0-1) with slightly elevated iron content. No samples were available for analysis at the time of the site visit as the boreholes were not pumping. It is recommended that samples be taken to confirm the water quality and also to check if any contamination is present. It is recommended that samples be analised for macro elements, hydrocarbons and bacteria.

(viii) IMPACT ASSESSMENT

It is anticipated that the following activities could impact on the groundwater resource:

- Abstraction of water: Only a portion of the facility is supplied with water from the groundwater resources. With the envisaged additions and alterations water supply is envisaged to come solely from the Rookpoort dam. Groundwater will only be used as a backup source. Thus groundwater abstraction will have an insignificant impact on the groundwater resource;
- Sewerage system: The existing sewerage system discharges sewerage into 2 different oxidation ponds which are poorly operated and maintained. Although the volumes appear to be small there is a small risk of contamination of the groundwater. It is recommended that during the upgrading the sewerage system be replaced with properly designed treatment works. It would also be preferable if all the sewerage can be treated in one plant. The existing oxidation ponds will then need to be closed and rehabilitated.
- **NOTE**: The report makes mention of a proposed fuel depot. It has since been confirmed to ILA that a fuel depot is not proposed as part of the upgrade and therefore this activity is not being applied for. The current fuel storage on site to ILA's knowledge falls below the threshold of the listed activities.

(xi) MANAGEMENT AND MONITORING

It is advised that a proper management and monitoring programme be implemented to ensure that groundwater resources are protected. These should include:

- Measuring volumes of groundwater pumped;
- Measuring water levels at least quarterly;
- Take water samples from all production boreholes and analyse for microbiological and macro elements at least twice annually.

(xii) CONCLUSION AND RECOMMENDATIONS

From the evaluation the following conclusions are made:

- existing boreholes were found on site;
- Groundwater occurs mainly in fractured and weathered clastic sediments;
- Water table is relatively shallow with a southerly and westerly flow direction towards the Sand River;
- Storage capacity is expected to be low ≤ 0.001;
- Average annual recharge is estimated to be 8mm of which 4mm contributes to the base flow of the rivers;
- Existing groundwater quality is expected to be good – Class 0-1;
- The aquifer is not at risk of over abstraction as the water supply is proposed to come from the Rookpoort Dam with groundwater as backup;
- There is a small risk of pollution of the groundwater from the existing oxidation ponds and it is recommended that when the sewerage system is refurbished consideration should be given to establishing a proper sewerage works;

6.1.7 GEOTECHNICAL CONDITIONS

(i) REGIONAL GEOLOGY

The following information is extracted from the Reconnnassaince Report compiled by Soilkraft CC (***Refer to Appendix 12 of the town planning documents for the report).***

According to the regional geological map the study area is located in a complex geological environment. A number of geological stratigraphies are indicated in the area and are listed below in chronological order:

- **Alma Formation**: The Alma Formation is the youngest material indicated on the site and belongs to the Nylstroom Subgroup, Waterberg Group. The Formation contains sedimentary materials including feldspathic greywacke, sandstone, grit, conglomerate, boulder conglomerate. Arkose, micaceous

sandstone and siltstone. The sedimentary materials most likely found their origin as alluvial fans, which explain the mixture in size of its constituents

- **Swaerhoek Formation**: The Swaerhoek Formation also belongs to the Nylstroom Subgroup, Waterberg Group. Like the Alma Formation, the Swaerhoek Formation comprises sedimentary materials including sub-greywacke sandstone, conglomerate, shale and siltstone. The origin of the Swaerhoek Formation is disputed with some authors maintaining a fan-delta deposition whilst others argue that there is evidence of material reworking on beachesReference 8.3. The basal intervals of the Swaerhoek are occasionally associated with the Bushveld Igneous Complex.
- **Diabase**: The regional geological map indicates a number of diabase dykes with a north west to south east strike within the Alma Formation and Swaerhoek Formation, though this is slightly contradictory seeing as the Waterberg Group sediments post-date the diabase. It is therefore likely that the Waterberg sediments have been deeply eroded at these locations until the underlying diabase materials have been exposed. The possibility also exists that this may be a misnomer as the two Formation of the Waterberg discussed above (the Swaerhoek Formation in particular) contain an array of erratically distributed lava intrusions.
- **Bushveld Igneous Complex Granite**: The Thabazimbi regional geological map does not discern between the different suites encountered in the Bushveld Igneous Complex, but only differentiates between bedrock materials. In this case, the regional map indicates a thin band of granitic materials of the Bushveld Igneous Complex near the southern border of the site. It is deduced that the granite belongs to the so-called main zone and consists of granophyritic, porphyritic, and pegmatitic granite. Judging from the regional setting, the material has possibly been displaced and is likely to be deformed.
- **Bushveld Igneous Complex Felsite**: A thin band of felsite is extrapolated near the southern border of the property. According to the regional information, the felsite locally contains tuff and agglomerate and occasionally occurs with quartz porphyry.
- **Chuniespoort Group**: Again, the dated Thabazimbi map does not differentiate between different dolomitic strata, apart from discerning the Black Reef Formation from the main dolomitic strata. From the description available, it can only be deduced that the dolomitic strata present south of the study area is associated with the Chuniespoort Group. Materials present in the area include dolomite, chert, shale and inter-bedded quartzite.

(ii) GROUNDWATER

- **Perched Water**: Seepage water was encountered infrequently in a few of the trial holes excavated.
- **Permanent Water**: Vegter indicates the probability of drilling successfully for water in the area to be between 40% and 60%. In addition, should water be encountered, the chances are between 20% and 30% that the yield of such a borehole will exceed 2l/s. Groundwater in the area generally occurs in compact, dominantly arenaceous strata at depths between ten metres and twenty metres. The presence of the Rookpoort dam is likely to affect the state and saturation of local aquifers.

(iii) GEOTECHNICAL CONDITIONS [Please refer to the attached report in **Appendix 12** for full specifications, the information extracted from the report below only indicates the conclusion]

Administration camp and residences

It is concluded that from a surface geotechnical investigation there are no fundamental flaws preventing the proposed upgrade of this camp. The geotechnical zones identified namely **S2** and **P** Seepage, are considered to be acceptable and can be addressed with engineering solutions.

Proposed new ammunition safe

As far as surface geotechnical properties go, there are no fundamental flaws excluding this area from contention for the proposed establishment of the new ammunition safe. The area is expected to be of **H/S1-S2/R** classification and therefore geotechnical aspects can be addressed with engineering solutions.

Proposed new alpha camp

It is concluded that there are no fundamental flaws excluding this proposed site from development, as far as surface geotechnical conditions are concerned. The site classification of **S1/R** suggests that engineering solutions can be applied to address prevailing conditions. In addition perched water may also have to be addressed.

Proposed upgrade of the existing bravo camp

It is concluded that from a surface geotechnical investigation there are no fundamental flaws preventing the proposed upgrade of this camp. The geotechnical zoning (i.e. **S1-S2/R**) is considered to be acceptable and can be addressed with engineering solutions. Particular attention must be paid during future investigations in this are to the possible occurrence, distribution and residual products of diabase intrusions. Residual materials of diabase are notorious for being expansive in a moist to semi-humid climate

Delta camp

Once more it is concluded that there are no fundamental flaws disqualifying Delta camp from further development. Two factors must be kept in mind:

- The potential flood lines must be assessed to ensure that no structures fall within the 1:100 year flood lines. This applies to both non-perennial streams in/adjacent to the site;
- Should medium or heavy structures be constructed, the impact on the slope stability of the site must be evaluated. Any deep excavation made for large construction projects must be preceded by a comprehensive investigation regarding the soil profile's shear properties.

Proposed new echo camp

As with the other camps discussed up to this point, there are no fundamental issues which rule this site out of contention for the proposed establishment of the new Echo camp. With the awarded classification of **S-S1/R**, the largest issue in this camp will be excavatibility and the sporadic outcrop of bedrock.

Proposed new air strip and administration building

Administration Building

It is concluded that from a surface geotechnical investigation there are no fundamental flaws limiting construction of the proposed new administration building. The area is classified as **S1**, and subsequently foundation precautions will be required. Provision must also be made to address conditions of perched water.

Landing Strip / Runway

No design parameters were supplied regarding the proposed new runway and as a result only very broad recommendations can be given in this regard. In situ materials proved to be of G5 and G6 COLTO quality, with one sample failing to achieve a COLTO rating. As such, in situ materials may be considered for layer work construction, but must be done so with adequate quality control.

Proposed new shooting range and administration building

Whilst there are no fundamental flaws prohibiting the proposed construction of the administration building or shooting range (not considering the outcome of a dolomite stability investigation), this area in particular will require intense further investigation, depending on the proposed shooting range. At present no design information is available, so it is not clear what the approach towards construction would be. Despite the above, general guidelines will be that soil slope stability investigation and possibly rock slope stability excavation will be required, should any earthworks or excavations be planned for this area. Such investigations should precede any earthworks that are to be undertaken

(iv) CONCLUSION

From a surface geotechnical viewpoint there are no fundamental flaws or limitations that prevent the proposed upgrade of the Verdrag facility. A detailed geotechnical investigations needs to be undertaken to verify and refine the findings of the feasibility study prior to proceeding with construction

6.1.8 GEOTECHNICAL INVESTIGATION TO DETERMINE THE PRESENCE OF DOLOMITE

The Department of Public Works commissioned Messrs VGI Consult to investigate the subsurface profile at the Verdrag Facility to determine the presence/absence of dolomite. Refer to ***Appendix 13*** for a copy of the Report. The investigation involved field inspections, a review of available data, a borehole drilling programme, analysis and reporting. The Report concludes that dolomite is anticipated to be absent or located at very great depth below the area and unlike to impact negatively on the stability of the Verdrag site.

6.2 SOCIO-ECONOMIC CONTEXT

6.2.1 DISTRICT CHARACTERISTICS

ECONOMIC CHARACTERISTICS AND DRIVERS

The sector that contributes most to the GDP of the Waterberg District is mining. However, the sector that employs the largest number of people is agriculture. With future developments set to take place in the Waterberg District, it is likely that current GDP and employment trends will change. In terms of the population, three local municipalities registered positive growth with Modimolle registering the biggest

growth followed by Mogalakwena. Changes of municipal demarcations may have impacted on the growth trends observed.

POPULATION CHARACTERISTICS

The Waterberg District Municipality area has an estimated total population of 572 625. Most of the people in the District are distributed around Mogalakwena, Lephalale, as well as the Thabazimbi local municipality areas respectively. The education levels are relatively low within the Waterberg District. The working population tend to fall into two main brackets that earn between R1 to R400 and R6401 to R12 800 per month.

6.2.2 SITE SUITABILITY

The location of the subject property in a remote rural area with very limited development makes it ideal for the purposes of the SAPS Training Institute, which requires a secluded and private setting. The nature of the training facilities for the SAPS furthermore requires that the respective camps on the site must be situated well apart and in dense vegetation, in order to prevent visual contact between the camp areas. The site is therefore extremely desirable in terms of its size, locality and nature for purposes of the SAPS training facilities. As indicated in Section 3 of this Report none of the activities proposed are considered to be in conflict with the specifications and requirements of the Waterberg District EMF.

6.2.3 HERITAGE IMPACT ASSESSMENT

Heritage specialist, Dr Johnny van Schalkwyk Heritage was commissioned to conduct a heritage impact assessment refer ***Appendix 14*** for a full copy of the Report. Herewith extracts from the Report.

The cultural landscape qualities of the region essentially consist of one component. The first is a rural area in which the human occupation is made up of a pre-colonial element (Stone Age and Iron Age) as well as a much later colonial (farmer and industrial) component.
The following sites and features have been identified:

- Old farmstead dating to the beginning of the 20th century. According to the SAPS staff this is the old farmhouse and is still in use by them and was somewhat upgraded a few years ago. This structure is located in the new residential area. If the structure is to be demolished it should be documented in full, after which a permit for its demolishing can be obtained from SAHRA. [Refer **Point 1** in the locality map below]

Figure 29: The Old Farmstead

- Remains of the old Groenfontein farmstead. This structure is located ***just east of the area of proposed new E Training camp.*** It is unlikely that there would be an impact on it. However, if there is to be an impact, the site should be documented in detail before the development takes place [Refer **Point 4** below].
- A small informal cemetery with approximately 10 graves. This site is located inside the existing A

Training camp, which is to be upgraded. It is known to the SAPS authorities and is protected by a fence. It is recommended that it is kept in place and that the site is formalised and maintained. If this is not possible, the graves can be relocated after proper procedures have been followed and all the necessary permits are in place [Refer **Point 2** below].

- Memorial to a young police officer who drowned during a training exercise in 2004. This feature is located outside the area where development will take place and therefore there will be not impact. No further action is required [Refer **Point 3**].
- Based on current information regarding sites in the surrounding area, all sites known to occur in the study region are judged to have Grade III significance and therefore would not prevent the proposed development from continuing after the implementation of the proposed mitigation measures and its acceptance by SAHRA.

From a heritage point of view the proposed development can continue. However, if any archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

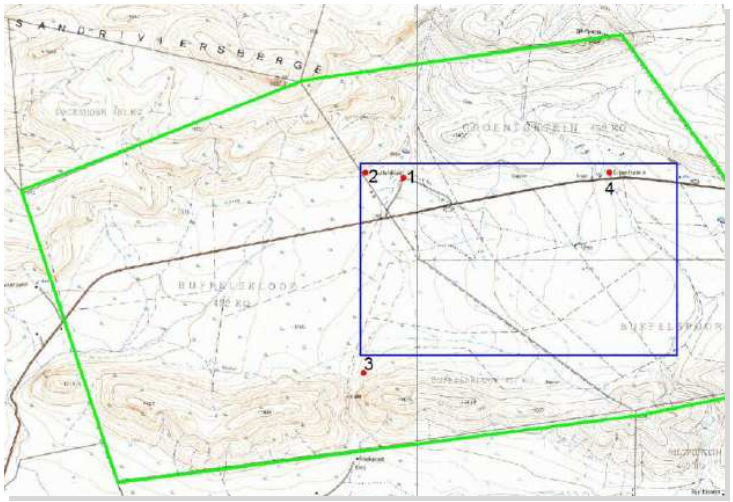

Figure 30: Study area showing location of identified sites

SECTION 7: PUBLIC PARTICIPATION PROCESS

Regulation 28 (1) (h) (k) & (m)

7.1 PROCESS FOLLOWED TO DATE

The public participation process is being conducted in terms of Chapter 6 of the EIA Regulations, 18 June 2010.

The initial public participation process undertaken by ILA, commenced on **03 May 2012** and included the following:

- A legal notice was placed in two (2) local newspapers, Die Pos and Die Kwêvoël ;
- Site notices were placed at the main entrance of the Verdrag Police Training Facility, Thabazimbi, at Obaro, Thabazimbi and Pick & Pay Thabazimbi
- Key stakeholders and/or Interested and Affected Parties (I&AP's) were notified by registered post, e-mail and fax. Letters were also distributed by hand to certain adjacent land owners

7.1.1 NEWSPAPER ADVERTISEMENT

An advertisement, notifying the public of the EIA process and inviting I&AP's to participate in the process by registering their comments with ILA (full contact details provided), was placed in the Kwêvoël on 4 May 2012 and in Die Pos on 4 May 2012 (Refer to ***Appendix 15*** for copy of advertisement placed)

7.1.2 Site Notice

In order to notify the surrounding communities and immediate adjacent landowners of the proposed development, as well as inviting them to participate in the EIA process by registering their comments with ILA (full contact details provided), four site notices were erected on 3 May 2012 in visible locations (Refer to ***Appendix 16*** for proof of A4 copies of site notice).

Figure 31&32: Site Notice opposite the main entrance of the South Afican Police Training Facility Verdrag, Thabazimbi

Figure 33: Site Notice at Pick and Pay, Thabazimbi

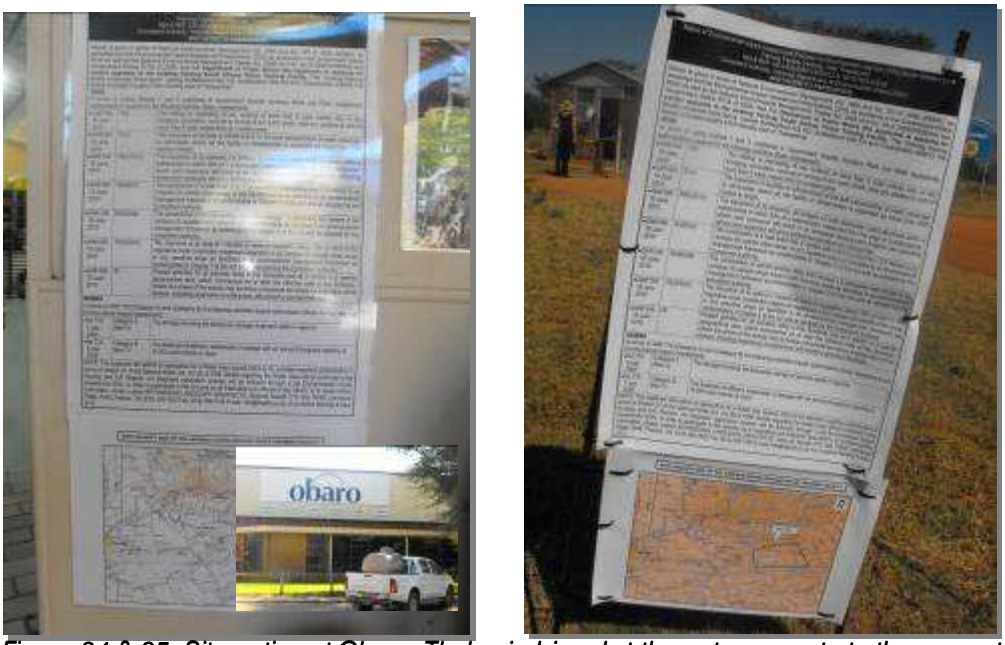

Figure 34 & 35: Site notice at Obaro, Thabazimbi and at the entrance gate to the property

7.1.3 Direct Notification Of Identified I&AP's

A Background Information Document (BID) with comment and registration sheet was prepared and distributed to key stakeholders ***(Refer to Appendix 17 for a copy of the BID, Registration sheet, acknowledgment of receipt and proofs that stakeholders were notified)***.

7.1.4 DATABASE

A database has been compiled containing details of identified stakeholders. The database will be continually updated throughout the EIA Process. Please refer to ***Table 2*** for the database.

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TABLE 2: I & AP DATABASE

	Title	First Name	Last Name	Company	Contact Details
National Authority	Ms	Puseletso	Ntsane	Department of Public Works – Town Planner	
Local Authority	Clr	Paul	Scruton	Ward Councillor	bosauto@lantic.net
Local Authority	Mr	Hunter	Pagole	Modimolle Local Municipality	
Local Authority	Mr	Phathutshedzo	Siebe	Waterberg Local Municipality	014 717 2931 (fax)
NGO	Mr	Lemson	Betha	WESSA	lbetha@wessanorth.co.za
NGO	Ms	Harriet	Davis	Endangered Wildlife Trust (EWT)	harrietd@ewt.org.za
Provincial	Ms	Pumeza	Skepe	Department of Environmental Affairs (DEA)	PSkepe@environment.gov.za
Provincial	Ms	Zingiza	Phohlo	Department of Environmental Affairs (DEA	ZPhohlo@environment.gov.za
Provincial	Mr	Rens (MLJ)	Botha	Department of Water Affairs (DWA)	BothaR@dwa.gov.za
Provincial	Ms	Jane	Mulaudzi	DWA - Hartbeespoort	JaneM@dwa.gov.za
Provincial	Ms	Caroline	Shai	DWA - Hartbeespoort	ShaiC@dwa.gov.za
Provincial	Mr	TP	Malungani	Ledet	malunganitp@ledet.gov.za
Provincial	Ms	Marubini	Mashuduma	Department of Agriculture and Forestry (DAFF)	mashuduma@daff.gov.za
Provincial		M	Selemela	Department of Agriculture and Forestry (DAFF)	SelemelaM@daff.gov.za
ADJACENT LAND OWNERS					
Remaining Extent: Farm Klipspruit 457 KQ & R/5	Mr	Stefan	Rossouw	Land Owner: Buffelspoort Boerdery 2008 Pty Ltd	freda.saunders@za.pwc.com
R/2 Klipspruit 457 KQ	Mr	Louis J	Le Grange	Land Owner: Shakawe Private Game Reserve	louis.legrange@za.pwc.com
Remaining Extent: Farm Kliprivier 464 KQ & R/6	Mr	Piet L	Roux	Land Owner: Kliprivier Besigheid Trust	plroux@netactive.co.za
R/1 Kliprivier 464 KQ	Mr	Frank R	Sullivan	Land Owner: Bentick Beleggings	fsullivan@healthsure.co.za
R/9 Kliprivier 464 KQ				Land Owner: Hoggenheimer Boerdery	Geelhoutlaan 47 Maraissteyn Park Edenvale 1610
R/2: R/ 3 Kliprivier 464 KQ	Ms	Sandrie	Fraser	Dabchick Wildlife Reserve	sandrief@kunkura.co.za
R/2: R/ 3 Kliprivier 464 KQ	Dr	Peter	Oberem	Dabchick Wildlife Reserve	peter.oberem@afrivet.co.za
Remaining Extent: Farm Rietfontein 460 KQ	Mr	Salem	Al Neyadi	SA RPHC Pty Ltd	Private Bag X36 Sunninghill 2157

Remaining extent: Farm Badenoch 454 KQ	Ms	Silvia L	De Jager	Pioen 1106 Pty Ltd	PO Box 7771 Johannesburg 2000
Remaining Extent:Farm Randstephne 455 KQ	Mr	Johann	Van Breda	Aquila Steel Thabazimbi (S Africa) Pty Ltd	jvanbreda@aquilaresources.co.za
ADJACENT LAND OWNERS					
Remaining Extent: Farm Donkerpoort 448 KQ	Mr	Johann	Van Breda	Aquila Steel Thabazimbi (S Africa) Pty Ltd	jvanbreda@aquilaresources.co.za
R/1Donkerpoort 448 KQ	Mr	Jan Hendrik	Coetzer		JanC@ilclerumo.co.za
R/2 Donkerpoort 448 KQ				No info	
R/3 Donkerpoort 448 KQ				No info	
R/6 Donkerpoort 448 KQ				No Info	
Remaining Extent: Farm Blockshek 453 KQ	Mr	Denis J	Earp		296 Tyronne Avenue Bronberrik 0157
Remainng Extent : Farm Zandspruit 451 KQ	Mr	Louis	Van der Watt	Atterbury Properties	Louis@atterburt.co.za
Remaining Extent: Farm Zandspruit 449 KQ	Mr	Attie	Jonker	Jonker Trust	attiej@lantic.net
Remaining Extent: Farm Dassiesrand 417 KQ	Mr	James	Milton		PO Box 228 Northam 0360

7.1.5 COMMENTS AND RESPONSE REPORT

Comments submitted during the public participation process are being captured and entered into the Comments and Response Report as per the requirements of Regulations 56 & 57 of the EIA Regulations 2010. Comments captured up to date have been included in the Comments & Response Report included in ***Table 3.***

Comments captured up to date have highlighted the following main concerns:

- Mr Rens Botha (Department of Water Affairs) – No development may commence unless duly authorised in terms of the requirements under the National Water Act, 1998 (Act no. 36 of 1998);
- Mr Frank Sullivan – Requested investigation whether the rifle range cannot be moved further away from his farm; and
- Mr Baloi (LEDET) indicated telephonically that their department will only comment on the Draft Scoping Report.

Refer ***Appendix 5*** for comments received up to date

7.1.6 DRAFT SCOPING REPORT AVAILABLE FOR PUBLIC REVIEW

The Draft Scoping Report is available for review and comment by registered Interested and Affected Parties [I&AP's] between 16 July – 24 August 2012. I&AP's have been notified where the Report can be downloaded from the internet. A hard copy of the Report is also available for viewing at Obaro in Thabazimbi situated on Warmbad Avenue. A copy of the Draft Scoping Report has also been submitted to the DEA. All comments received will be included in the Final Scoping Report. The Final Report will be made available for a 21 day comment period to I&AP's and will be submitted to DEA.

TABLE 3: COMMENTS AND RESPONSE REPORT FOLLOWING THE INITIAL PUBLIC PARTICIPATION PHASE FOR THE PROPOSED UPGRADE OF THE SOUTH AFRICAN POLICE TRAINING FACILITY VERDRAG, NEAR THABAZIMBI

ISSUES AND COMMENTS RAISED	COMMENTATOR/S	SOURCE	RESPONSE
COMMENTS RECEIVED ON INTIAL PUBLIC PARTICIPATION			
Biophysical Issues			
Requested investigation into the possible reallocation of the rifle range further away from his farm	Mr Frank Sullivan	Email correspondence	Registered. Mr Sullivan's request will be investigated and feasibility determined in terms of safety regulations and specifications for location of shooting ranges. The development of a new shooting range is proposed and the alternative to decommission the other shooting ranges will be investigated.
Reported that in the past Verdrag has been known to be responsible for veldfires. Reports show that annually veldfires started as a result of training at Verdrag thus more people will definitely lead to more veldfires	Mr PJ le Roux	E-mail correspondence	The repeat of veldfires originating from Verdrag need to be address according the National Veld & Forest Fire Act (ACT 101 of 1998). All fire related problems can be addressed through the Thabazimbi Fire Protection Association (FPA), currently chaired by Mr. Anton Scheepers.
Fire roads and borders of Verdrag is not up to standard to protect neighbouring farms against veldfires originating at Verdrag	Mr PJ le Roux	E-mail correspondence	Warrant Officer Hennie Kruger from Verdrag Training Facility is sector leader of the Thabazimbi FPA. He confirmed that all firebreaks along the borders of the Verdrag Training Facility comply with the Act. They have fire fighting teams and always have a fire cart available when pyrotechnical training is done.
Fires caused by shooting exercises and the lack of adequate firebreaks	Mr L le Grange	E-mail correspondence	Warrant Officer Hennie Kruger from Verdrag Training Facility confirmed that all firebreaks along the borders of the Verdrag Training Facility complies with the Act. He also that a fire cart is always available when pyrotechnical training is done.

Fires caused by shooting exercises and the lack of adequate firebreaks	Mr S Rossouw	E-mail correspondence	Mr Hennie Kruger from Verdrag Training Facility confirmed that all firebreaks along the borders of the Verdrag Training Facility comply with the Act. He also that a fire cart is always available when pyrotechnical training is done.
Socio – Economic Issues			
The trainees of Vedrag do not consider the people of the community in that they speed on the road and refuse to belong to other organisations in the community e.g. FPA	Mr PJ le Roux Dabchick Wildlife Reserve	E-mail correspondence	Registered parties are requested to keep record of incidents and to report it to the Training Facility. The Verdrag Training Facility is represented on the Thabazimbi FPA by Warrant Officer Hennie Kruger.
As direct neighbour to Verdrag Training Facility, Dabchick Wildlife Reserve obtains their Return of Investment (ROI) from the sense of place i.e. wild, peaceful bush atmosphere. Therefore they would appreciate it to be well informed; be able to give their inputs and be able to discuss the developments one on one	Dr P Oberem Dabchick Wildlife Reserve	E-mail correspondence	All relevant information and reports will be sent to registered I&AP's for comment. Dr Oberem will be contacted to schedule a meeting.
Low flying helicopters	Mr L le Grange	E-mail correspondence	Low flying helicopter activities are related to training sessions. The Verdrag SAPS Training Facility is required to adhere to the rules and regulations of the Aviation Authority and Legislation.
Low flying helicopters	Mr S Rossouw	E-mail correspondence	Low flying helicopter activities are related to training sessions. The Verdrag SAPS Training Facility is required to adhere to the rules and regulations of the Aviation Authority and Legislation.
Trespassing of trainees onto adjacent properties during night marches	Mr L le Grange	E-mail correspondence	The SAPS Training Facility is not aware of regular trespassing of trainees onto neighbouring properties. All registered parties are requested to record these incidents and report incidences to the Training Facility.
Trespassing of trainees onto adjacent properties during night marches	Mr S Rossouw	E-mail correspondence	The SAPS Training Facility is not aware of regular trespassing of trainees onto neighbouring properties. All registered parties are requested to record these incidents and report incidences to the Training Facility.

Infrastructure and Services Issues			
No development may commence unless duly authorised in terms of the requirements under the National Water Act, 1998 (Act no. 36 of 1998)	Mr Rens Botha Department of Water Affairs	Email Correspondence	Messrs EcoAgent CC have been commissioned to apply for the issuing of the required licenses on behalf of the Applicant in terms of the National Water Act.
The Shooting range is too close to Skilpadkop	Mr PJ le Roux	E-mail correspondence	The upgrade proposal includes the development of a new shooting range. The possibility of decommissioning the existing shooting ranges will be investigated as part of the EIA Process.
The main road is not properly maintained by the municipality at present. More trainees will mean more traffic which will lead to the road degrading even more.	Mr PJ le Roux	E-mail correspondence	The maintenance of the road is the responsibility of the Provincial Roads Department. All matters pertaining to the road need to be addressed to Mr James Mokobane of the Department of Roads - Thabazimbi
The current condition of the road as well as the impact of heavy vehicles on the road is a concern	Mr L le Grange	E-mail correspondence	The maintenance of the road is the responsibility of the Provincial Roads Department. All matters pertaining the road need to be addressed to Mr James Mokobane of the Department of Roads – Thabazimbi. Recommendation will be included in the Draft Environmental Management Programme regarding road maintenance during the construction phase of the upgrade. The Draft EMPr will be included in the Draft EIA Report which will be made available for comment.
The current condition of the road as well as the impact of heavy traffic on the road is a concern	Mr S Rossouw	E-mail correspondence	The maintenance of the road is the responsibility of the Provincial Roads Department. All matters pertaining the road need to be addressed to Mr James Mokobane of the Department of Roads – Thabazimbi. Recommendation will be included in the Draft Environmental Management Programme regarding road maintenance during the construction phase of the upgrade. The Draft EMPr will be included in the Draft EIA Report which will be made available for comment.
ISSUES AND COMMENTS RAISED	**COMMENTATOR/S**	**SOURCE**	**RESPONSE**

Infrastructure and Services Issues [Continued]			
Requested to be registered no comments issued			
None	Ms Jane Maudzi Department of Water Affairs - Hartbeespoort	Email Correspondence	Registered
None	Ms Caroline Shai Department of Water Affairs - Hartbeespoort	Email Correspondence	Registered
Will only comment once hard copy of Draft Scoping Report has been received	TP Malungani LEDET	Email Correspondence	Registered
None	Mr Louis van der Watt	Email Correspondence	Registered
None	Mr Jan Coetzer	Email Correspondence	Registered
The Waterberg District Municipality found the proposed Land Development area application in consistence with the municipality's SDF's and polices in this regard. They recommend the approval of EIA due to the approval of Land development application (Township Establishment) by Limpopo Development Tribunal.	MV Letsoalo – Municipal Manager	Email Correspondence	Registered

SECTION 8: DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS AND ISSUES

Regulation 28 (1) (g)

8.1 DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS AND ISSUES

This section of the report is aimed at providing a description and brief evaluation of issues and impacts associated with the upgrades proposed at the Verdrag Training Facility.

Before impacts can be identified, it is important to give account of the on-site activities anticipated during the construction and operational phases of the project.

The activities envisaged are based on normal construction and operational programs associated with activities of this nature. They are referred to as environmental aspects as they represent the actions during the construction and operational phases that will influence environmental conditions to a large or lesser degree.

Please note however that this is the preliminary indication of anticipated impacts. Impacts may be influenced by the findings of the full Environmental Impact Assessment.

8.1.1 ANTICIPATED ENVIRONMENTAL AND SOCIAL ASPECTS

PRE-CONSTRUCTION AND CONSTRUCTION PHASES

- Surveying, fencing, search-and-rescue, clearing and grubbing, topsoil stripping and access road construction;
- Transport of material to site;
- Construction of the temporary site camp which involves clearing of the vegetation, fencing of the camp and related structures including store-rooms and vehicle parking areas;
- Construction of drainage and bridge structures;
- Earthworks include clearing of vegetation;
- Road construction includes clearing of vegetation;
- Site clearance including removal of all building material, temporary structures and any other waste material generated during construction. All such material to be removed from site and disposed of appropriately once construction is complete.

OPERATIONAL PHASE

- Maintenance of infrastructure and buildings

8.1.2 ANTICIPATED IMPACTS

CONSTRUCTION PHASE

BENEFICIAL IMPACTS

- Skills development and creation of job opportunities; and
- Eradication of invaders and establishment of indigenous vegetation.

ADVERSE IMPACTS

- De-vegetation of area of construction due to construction of new roads, accommodation units, training facilities and installation of services could result in wind and water erosion, as well as dust generation;
- Poaching of fauna by construction team;
- Loss of wetland habitat, installation of services in riparian zones (cumulative impact);
- Impoundment of flows construction of additional roads (cumulative impact);
- Interception of subsurface flows installation of services (cumulative impact);
- Increased sedimentation (cumulative impact);
- Water quality deterioration (cumulative impact);
- Erosion risk from stormwater runoff as a result of vegetation clearance (cumulative impact);

- Impact on aesthetics of the area and genius loci (Sense of place);
- Noise emanating from construction & dust generation could impact on fauna;
- Heavy vehicle traffic increase that could impact negatively on safety and quality of existing roads and possible roadkill (cumulative impact);
- Crime may increase as a result of contract workers in the area;
- Stockpile areas for construction material, generation and disposal of building waste & liquids and vehicle maintenance could impact on ground water, surface water (rivers) and environment as a whole;
- Stockpile areas for construction material could pose threat to fauna (in terms of suffocation/poisoning etc);
- Possible damage / loss of subterranean artefacts;
- Removal of protected trees;
- Waste Management could impact on soil and ground water;
- Waste Management could pose threat to fauna;
- Sanitation (toilet facilities) could impact on soil and ground water (cumulative impact); and
- Unsupervised and misuse of fire on site could impact negatively on the environment.

OPERATIONAL PHASE

BENEFICIAL IMPACTS

- Rehabilitation of disturbed areas;
- Installation of adequate stormwater management infrastructure which could reduce erosion risks and protect riparian habitat at outlet points;
- Upgrading and maintenance to existing sewerage and water infrastructure will reduce risk of environmental impacts such as sewerage leaks and water wastage due to defunct equipment;
- Skills development and long term job opportunities;
- Provision of additional facilities and improved quality facilities for SAPS training;

ADVERSE IMPACTS

- Increase of hard surface area i.e. increased stormwater runoff, which could impact on riparian zones in the form of erosion and habitat destruction and concentration of flows (cumulative impact);
- Loss of habitat for fauna, invertebrate and flora, impact on biodiversity;
- Waste generation could impact on capacity of landfill site (cumulative impact);
- Waste generation & waste management could impact on fauna and lead to possible contamination of soil, surface and groundwater;
- Increased traffic generation during operational phase and maintenance of the P240 required (cumulative impact);
- Increased light pollution;
- Increased noise pollution;
- Possible contamination of groundwater should the development and wastewater treatment facility not be managed properly (cumulative impact);
- Additional burden on electrical service provider (cumulative Impact)
- Roadkill due to night driving (staff);
- Potential fire hazard if effective fire management plan is not implemented and maintained.

SECTION 9: PLAN OF STUDY FOR EIA

Regulation 28 (1) (n), (o) & (p)

9.1 TASKS TO BE UNDERTAKEN DURING THE EIA PROCESS

Should the Final Scoping Report be accepted and approved by the Department of Environmental Affairs, ILA will proceed with the EIA Process, as described in the Guideline Documents 3, 4 and 5 (Gazetted by DEA) compiled by the Department of the Environmental Affairs and as per Regulations 31, 32 and 33 of the EIA Regulations 2010.. Documents to be produced will comply with the requirements stipulated in the Regulations 31-33 published in Government Notice R543 under Section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended.

9.1.1 SPECIALIST INVESTIGATIONS

The following specialist studies have been undertaken and copies of the reports have been included in this Draft Scoping Report.

- Vegetation and Mammal Assessment by EcoAgent CC;
- Heritage Impact Assessment by Dr Johnny van Schalkwyk;
- Geotechnical feasibility by Soilkraft CC;
- Hydrogeological Evaluation by WSM Leshika.

It is recommended that the riparian areas on site affected by the upgrades be delineated in order to indicate the sensitive area accurately and to enable the preparation of site specific mitigation measures for inclusion in the EMPr. The DEA is requested to confirm the necessity for on site delineation.

Upon Authority review of the above investigations it will be determined whether any further investigations are required. The DEA is requested to confirm whether it will be necessary to conduct a full hydrogeological assessment to determine whether the existing WWTW has resulted in any contamination of groundwater and also to specify the Departments requirements in terms of specialist investigations required pertaining to the assessment of the Alternative WWTW [submerged system] which is being proposed.

The Department is requested to note that no monitoring boreholes are situated near the existing sewerage works and that should groundwater analysis be required to determine possible contamination risks additional boreholes will have to be drilled for such an investigation.

9.1.2 AUTHORITY CONSULTATION

Following submission of the Draft Scoping Report to DEA a site visit will be arranged with the following Authorities:

- Department of Environmental Affairs [DEA];
- Limpopo Department of Economic Development, Environment and Tourism [LEDET]; and
- Department of Water Affairs [DWA]

9.1.3 COMPARATIVE ASSESSMENT OF ALTERNATIVES

A comparative assessment of the Alternatives identified in Section 5 of this Report will be conducted in order to finalise an environmentally sustainable development proposal for inclusion in the Final EIA Report. This will include a proposal on the preferred Waste Water Treatment Works [WWTW] to be used.

9.1.4 PREPARATION OF A WASTE MANAGEMENT PLAN FOR THE VERDRAG FACILITY

Based on the outcome of the Alternative Assessment a recommendation will be made regarding the preferred system for treatment of wastewater.A Waste Management Plan will be prepared for the selected system.
The WMP will amongst other items:

- Define responsibility for waste management at the various levels of operation;
- Provide actions and guidelines to ensure that waste management is undertaken in line with existing South African waste management legislation, waste management guidelines and policies

9.2 OBJECTIVES AND APPROACH OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

9.2.1 OBJECTIVES

The objectives of the EIA process are as follows;

- To identify issues/concerns that require further investigation during the Environmental Impact Assessment process;
- To inform stakeholders about the proposed activity and provide them with an opportunity to raise their concerns provide input as this contributes towards the thoroughness of the EIA process and to ensure all aspects have been considered when preparing a recommendation;
- To understand and thoroughly document the issues/concerns raised by stakeholders in such a way that delay due to misunderstanding will be prevented at all cost;
- To identify/ describe possible environmental issues associated with the construction and operational phases of proposed development and to determine the significance thereof;
- To rank environmental issues identified during the environmental scoping exercise through application of a methodology for the determination of significance, based on the Guidelines compiled by the Department of Environmental Affairs;
- To thoroughly investigate alternatives (activity, design, technology, site and lay-out alternatives;
- To assess the relevant biophysical environmental components of the site to an appropriate level of detail. This includes the physical, biological, and socio-economic components;
- To reflect all the required information/ findings in a logical and systematic way in order to assist the GDARD with the evaluation of the proposed activity in terms of the requirements of National Environmental Management Act, 1998 (Act No. 107 of 1998)as amended; and
- To describe/ recommend specific measures/ Environmental Management Programme (EMP) to be implemented to address significant aspects/ impacts associated with the proposed change of land use.

9.2.2 APPROACH

Aspects and impacts (cumulative impacts, degree of impacts, nature of impacts, degree to which impacts can be reversed), associated with the construction and operational phases identified during the Scoping phase shall be extensively assessed as determined through application of a methodology, which is based on DEA (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Regulations, Integrated Environmental Management Guideline Series, Department of Environmental Affairs (DEA), Pretoria (Gazetted by DEA).

Comprehensive mitigation measures informed by specialist reports as well as consultation with key stakeholders shall be included in the report as well as in the draft Environmental Management Programme.

The EIA process to be followed will furthermore:

- be open and transparent and will be maintained throughout the entire lifecycle of the EIA-process; and
- respect the democratic rights and obligations of the participants/ stakeholders.

9.3 IMPACT IDENTIFICATON AND ASSESSMENT METHOD

The identification and assessment of environmental impacts is a multi-faceted process, which combines quantitative and qualitative analysis and evaluation. It involves the application of scientific measures and professional judgement to determine the significance of environmental and social impacts associated with the proposed project.

The assessment of impacts is based on an objective Significance Assessment Methodology, which is in accordance with the Department of Environmental Affairs (DEA) Guideline Document 5: Assessment of Alternatives and Impacts (2006). This method requires the allocation of a significance rating, which is determined by multiplying probability and severity rating.

The criteria and approach that will be used to identify, describe and assess impacts during the EIA Phase, are outlined below:

SIGNIFICANCE ASSESSMENT METHODOLOGY

An assessment of the significance of each of the impacts identified during the Scoping Process will be performed by means of a qualitative methodology. The above-mentioned methodology and results of the assessment are reflected in this section of the report.

In terms of the Significance Assessment Methodology, developed in accordance with the above guidelines, the significance of an impact is the product of a probability rating and a severity rating. A detailed description of the mentioned methodology follows below:

SIGNIFICANCE

Significance is the product of probability and severity.

PROBABILITY

Probability describes the likelihood of the impact actually occurring, and is rated as follows:

- Improbable - Low possibility of impact to occur due to design or history. Rating: 2
- Probable - Distinct possibility that impact will occur. Rating: 3
- Highly probable - Most likely that impact will occur. Rating: 4
- Definite - Impact will occur regardless of any prevention measures. Rating: 5

SEVERITY RATING

The severity rating is calculated from the factors allocated to intensity and duration. Intensity and duration factors are awarded to each impact, as described below.

INTENSITY FACTOR

The intensity factor is awarded to each impact according to the following method:

- Low intensity - nature and/or man made functions not affected (minor process damage or human/wildlife injury could occur. Factor 1
- Medium intensity - environment affected but natural and/or manmade functions and processes continue (Some process damage or human/ wildlife injury may have occurred). Factor 2
- High intensity-environment affected to the extent that natural and/or human-made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or human/wildlife injury could occur). Factor 4

DURATION

Duration is assessed and a factor awarded in accordance with the following:

- Short term - <1 to 5 years. Factor 2
- Medium term - 5 to 15 years. Factor 3
- Long term - impact will only cease after the operational life of the activity has ended, either because of natural process or by human intervention. Factor 4
- Permanent - mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient. Factor 4

SEVERITY FACTOR

The severity rating is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below. For example:

The Severity factor = Intensity factor X Duration factor
= 2 x 3
= 6

A severity factor of six (6) equals a severity rating of medium severity (Rating 3) as per table below:

TABLE 4: SEVERITY RATING

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no impact	

SIGNIFICANCE RATING

A Significance Rating is calculated by multiplying the severity rating with the probability rating. The significance rating should influence the development project as described below:

Low significance (calculated Significance Rating 4 to 6)
- Positive impact and negative impacts of low significance should have no influence on the proposed development project.

Medium significance (calculated Significance Rating >7 to 14)
- Positive impact: Should weigh towards a decision to continue
- Negative impact: Should be mitigated to a level where the impact would be of low significance before project can be approved.

High significance (calculated Significance Rating 15 and more)
- Positive impact: Should weigh towards a decision to continue, should be enhanced in final design.
- Negative impact: Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least low significance rating.

9.4 PUBLIC PARTICIPATION

The approach followed regarding Interested and Affected Parties during the EIA process will be as per the requirements of Chapter 6 of the Environmental Impact Regulations published in Government Notice R543 in Government Gazette No. 33306 of 18 June 2010, under Section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

This will entail making the draft EIA Report available to registered I &AP's for a 40 day comment period.

A copy of the Draft EIA Report will also be submitted to DEA. Comments received on the Draft EIA Report will be reviewed and it will be determined whether a meeting may be required to resolve any outstanding issues with affected stakeholders.

All comments received will be included in the Final EIA Report which will be submitted to DEA for review and issuing of a decision.

9.5 SPECIFIC INFORMATION REQUIRED BY AUTHORITY

Documents to be produced will comply with the requirements stipulated in the Regulations 31-34 published in Government Notice R543 under Section 24(5), read with Section 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Should DEA require specific information following submission of the Scoping Report, the information shall be obtained and included in the EIA Report.