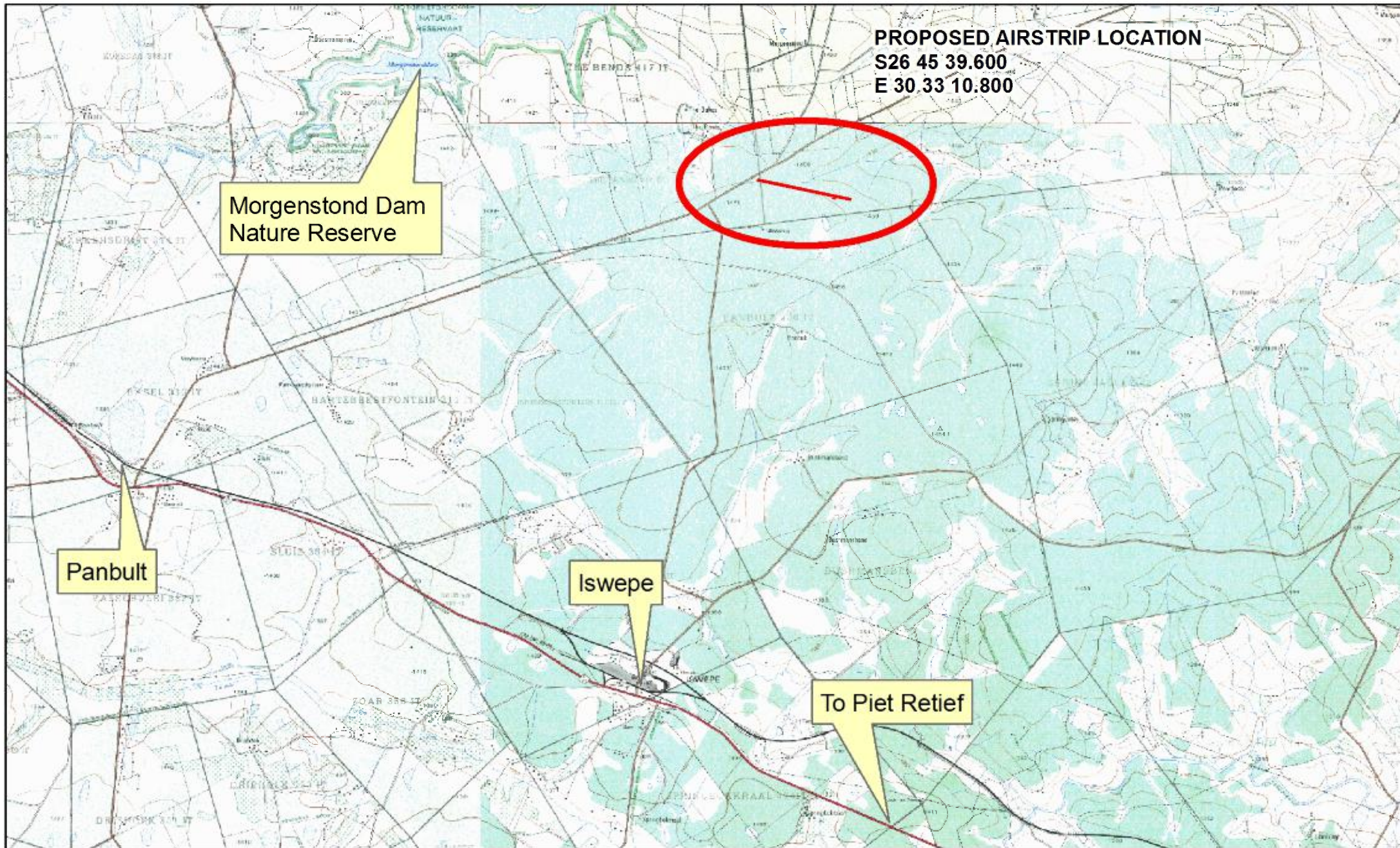


APPENDIX A1: LOCALITY MAP



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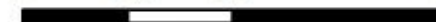
PROPOSED MONDI AIRSTRIP SITE LOCATION

Author: G. Glaum

Date: 15 APRIL 2013

SCALE 1:90 000

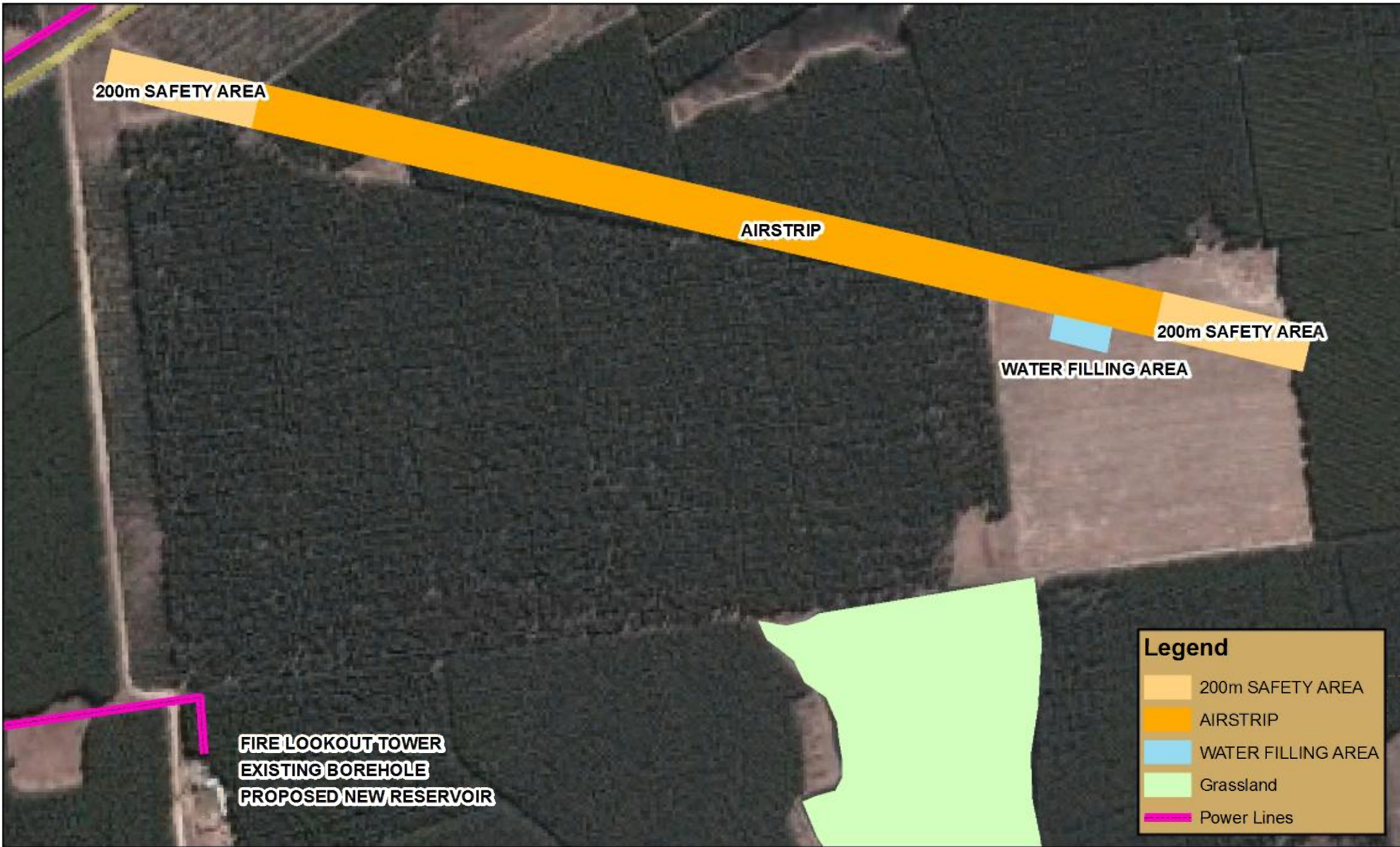
0 1.25 2.5 5



Kilometers



APPENDIX A2: PREFERRED LAYOUT



Legend

- 200m SAFETY AREA
- AIRSTRIP
- WATER FILLING AREA
- Grassland
- Power Lines

FIRE LOOKOUT TOWER
EXISTING BOREHOLE
PROPOSED NEW RESERVOIR

JEC
JEC
 Environmental Services

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**PROPOSED MONDI AIRSTRIP
 PREFERRED LAYOUT**

Author: G. Glaum Date: 12 APRIL 2013

0 200 400

Meters

N

APPENDIX B: BOREHOLE TESTING REPORT



water  **earth**  **life**

AQUA EARTH CONSULTING

(Consulting and Contracting Environmental Hydrogeologists)

75 5th Avenue, Fontainebleau, Randburg. Tel: +011 791 3470; Fax: 011 507 6612;

Email: aquaeath@aquaeath.co.za

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BOREHOLE CAPACITY AND WATER QUALITY TESTING

(Draft)

Conducted on behalf of:

Janet Edmonds Consulting on behalf of Mondi

Date: 24 January 2013

We put Science into Practice!

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1. INTRODUCTION

Aqua Earth Consulting (AEC) was appointed by Janet Edmonds Consulting to conduct a borehole test for their client Mondi at one of their facilities situated in Mpumalanga. Aqua Earth conducted a borehole pump test and water quality analysis.

2. SITE ACTIVITIES

2.1 Pump testing

Pump testing was conducted on the 4th of December 2012 using a submersible pump. A dip meter was used to measure the static water level before pumping. The static water level measured 60.31mbgl. A test pump was then installed to the depth of 81m. A two hour step drawdown test was conducted on the borehole and the results were used to determine a constant pumping rate. The borehole was subsequently pumped at the constant rate of 1.38 l/s for 24 hours. The borehole recovered after 90min. The borehole indicated good recovery after 24 hours of pumping. The details of the pump installation and results of the pump test are provided in Table 1 and Table 2, respectively.

Table 3 indicate the recommended pumping rate and the sustainable yield. The borehole can be pumped at the pumping rate of 1.00 l/s for 24 hour. The recommended pump depth is 84m.

Pump test results are also presented in a graph format in Figure 1 and Figure 2.

Table 1: Details of the pump installation

Borehole number	Coordinates		Borehole depth (m)	Static water level (m)	Available drawdown (m)
	Lat	Long			
JEC BH1	-26.07665	30.54687	86	60.31	25.69

Table 2: Details of the pump test

Borehole number	Constant drawdown time (min)	Constant drawdown (m)	Constant yield (l/s)	Constant recovery time (min)	Constant recovery (m)
JEC BH1	1440	6.47	1.38	90	0

Table 3: Recommended pump installation and yield

Method	Sustainable yield (l/s)
Basic FC	1.00
Cooper-Jacob	1.20
Average Q _{sust} (l/s)	1.10
Recommended abstraction rate (L/s)	1.00 for 24 hours per day
Hours per day of pumping	12 (1.2 L/s for 12 hours per day)
Recommended pump installation	84m

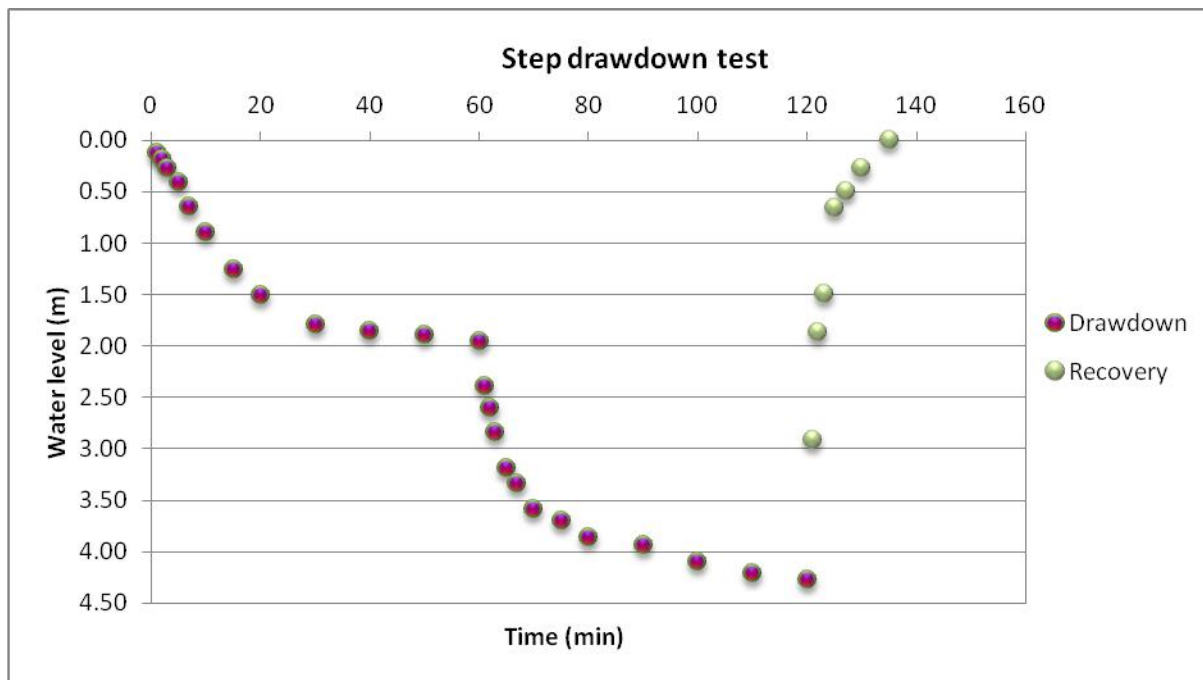


Figure 1: Indicate the results of the step drawdown test

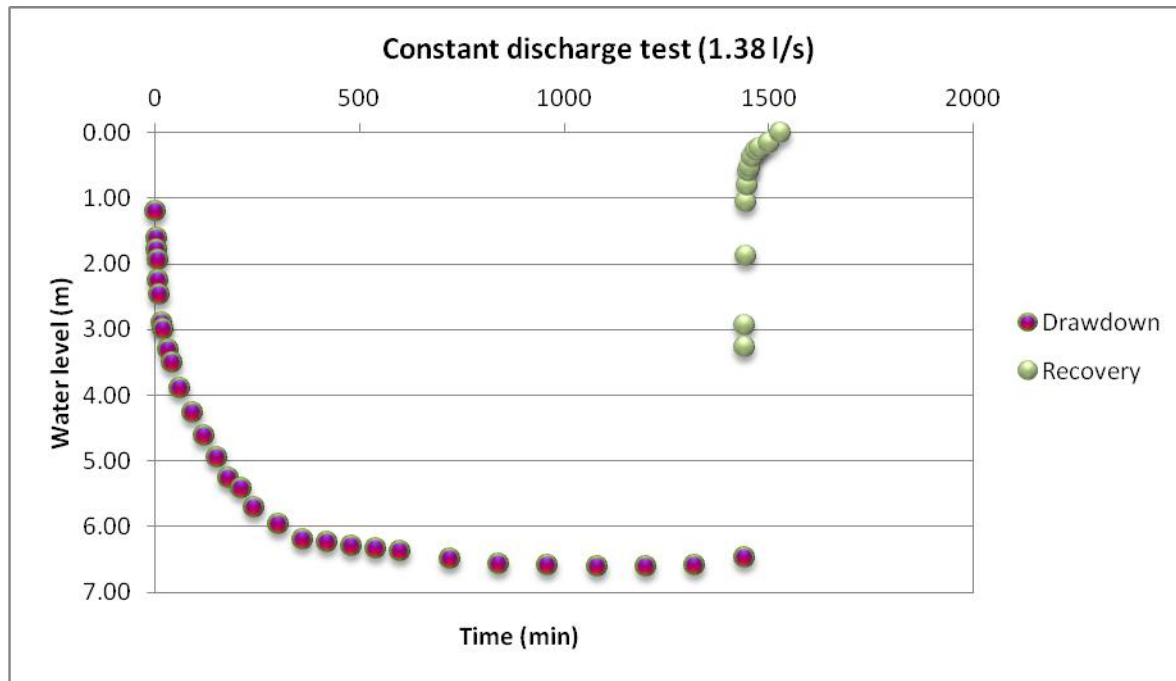


Figure 2: Constant rate test results

2.2 Chemistry results

2.2.1 Chemistry results as compared to the South African National Standards for drinking water

In this section the water quality results are compared with the South African National Standards for drinking water (SANS 241:2005). When compared to the SANS 241:2005 the results indicate a class I recommended limit for all the parameters analysed.

Table 4: Provides chemistry results as compared to the SANS 241:2005

Site	BH	pH	EC	TDS	Ca	Mg	Na	K	Cl	SO ₄	NO ₃ -N	F	Fe
Name	Number		mS/m	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
JEC Mondi	BH1	7.44	17	120	14	4.2	19	1.7	<0.01	3	0.18	0.23	<0.05

SANS 241; 2005

CLASS I: Recommended Operational Limit	5-9.5	<150	<1000	<150	<70	<200	<50	<200	<400	<10	<1	<0.2
CLASS II: Max Allowable	4.0-10	150-370	1000 - 2400	150-300	70-100	200-400	50-100	200-600	400-600	10.0-20	1-1.5	0.2-2
Above Class II Limits	>10	>370	2400>	>2400	>100	>400	>100	>600	>600	>20	>1.5	>2

2.2.2 Piper Diagram

The nature and change in water characteristics can best be illustrated with the use of a Piper diagram. The piper diagram is one of the most commonly used techniques to interpret groundwater chemistry data. This method entails the plotting of major cations and anions on adjacent trilinear fields with these points then being extrapolated to a central diamond field. Here the chemical character of water, in relation to its environment, can be observed and changes in the quality interpreted. The cation and anion plotting points are derived by computing the percentage equivalents for the main diagnostic cations of Ca, Mg and Na, and anions Cl, SO₄ and HCO₃.

Different waters from different environments always plot in diagnostic areas.

- The upper half of the diamond normally contains water of static regimes and high in Mg/Ca Cl₂ or Ca/Mg SO₄;
- The middle area normally indicates an area of dissolution and mixing;
- The lower triangle of this diamond shape indicates an area of dynamic and co-ordinated regimes;
- Sodium chloride brines normally plot on the right hand corner of the diamond shape;
- Recently recharge water plots on the left-hand corner of the diamond plot;
- The top corner normally indicates water contaminated with gypsum (mine impacts).

Figure 1 indicates that the borehole plot on the left half of the anions and cations triangles or on the left corner of the diamond. This indicates recently recharged or fresh unpolluted groundwater.

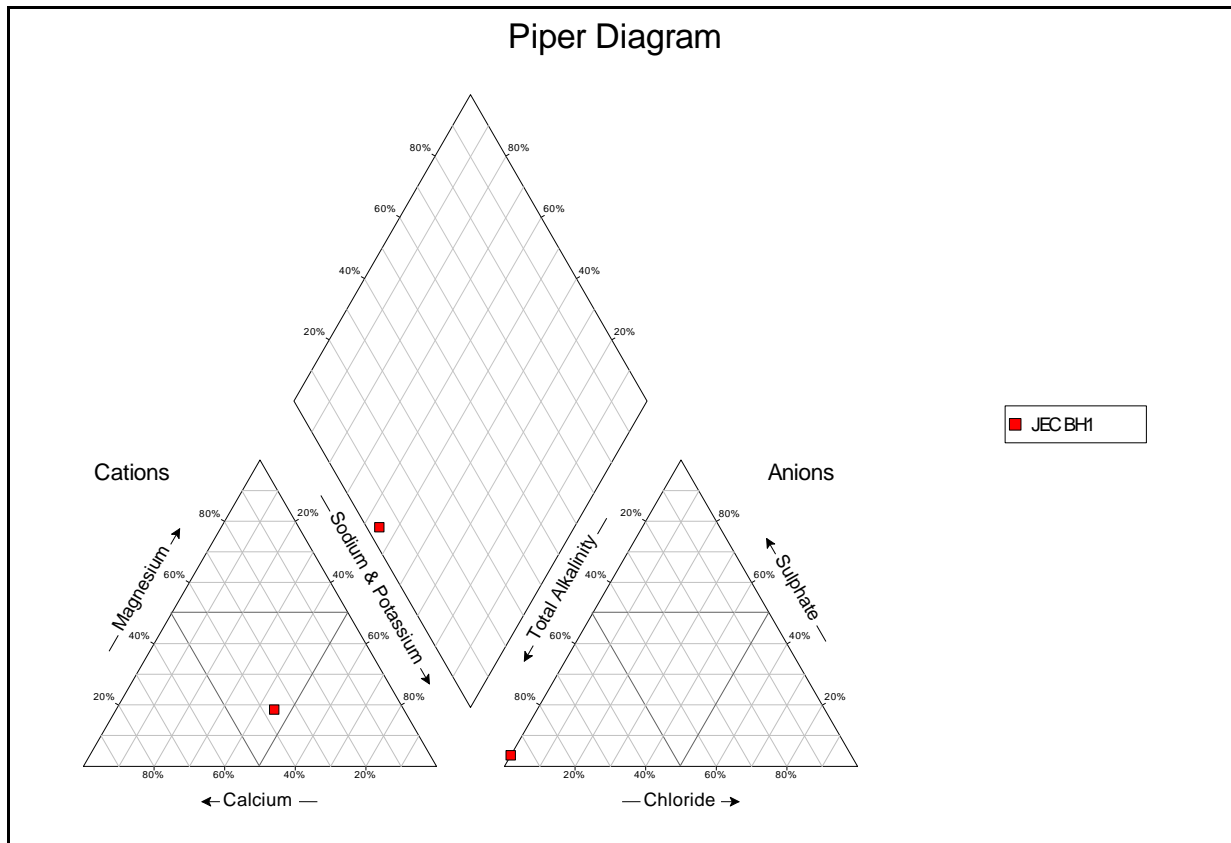


Figure 3: Piper diagram

3. CONCLUSIONS AND RECOMMENDATIONS

Based on the yield test and chemistry results obtained, the following conclusions are reached:

The hole was tested at 1.38 l/s for a period of 24 hours and based on the test result analysis a sustainable yield of of 1l/s (3600l/hr) is recommended.

Water quality analysis indicated water quality suitable for drinking water purposes.

Recommendations:

The correct size pump should be installed to ensure that the borehole is not over pumped.

Water levels should be measured at regular intervals to ensure that there is not an effect of dewatering developing from continuous pumping.

Water quality tests can be repeated on at least an annual basis to ensure that there are no significant changes in the water quality.

APPENDIX C: ENVIRONMENTAL MANAGEMENT PROGRAMME

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

PROPOSED MONDI AIRSTRIP AT THE BENDS ON
PORTION 7 ERF MORGENSTON 418, PANBULT 430
IT AND BENDS 417 IT, MKHONDO LOCAL
MUNICIPALITY, MPUMALANGA PROVINCE.

DEDET REF: 17/2/3 GS-62

PREPARED FOR MONDI LIMITED

April 2013



Environmental Services

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1. INTRODUCTION

JEC Environmental Services was appointed by Mondi Limited to compile an Environmental Management Programme (EMPr) as part of the Environmental Impact Assessment (EIA) for the proposed airstrip on Portion 7 Erf Morgenston 418, Panbult 430 IT and Bends 417 IT near Iswepe, Mpumalanga Province. The EIA is to follow a Basic Assessment process because it triggers the following listed activities in Government Notice Regulation (GNR) 546 published in terms of Section 24(2) and 24D of the National Environmental Management Act (NEMA, 107 of 1998).

This EMPr is compiled in terms of the GNR 543 section 22(l) and fulfils the requirements of GNR 543 section 33.

1.1. PROJECT DESCRIPTION

The need for a new airstrip arose due to the decommissioning of an existing airstrip in The Bends area which had previously been used for fire bomber aircraft. The existing, decommissioned airstrip became dangerous to use due to an undulating longitudinal surface and incorrect compass bearing. The closure of this airstrip resulted in aircraft having to fly further to deliver effective aerial fire-bombing services resulting in loss of timber.

The proposed location is closer to the area requiring aerial fire-bombing services, has available water on site and is safer to operate.

The new airstrip would be 1.39km long and 30m wide with a 200m safety area at either end. An additional 15m on either side of the runway surface would be kept mown. The old airstrip would be re-established to commercial trees. The airstrip would initially be grassed, but it is likely that it would eventually be hard surfaced. A concrete area of 9m x 400m may later be established to assist the "802" Bomber aircraft with take-off. Water storage in single or multiple reservoirs with a total capacity of 350 000 litres (350m³) would be established near the airstrip. In addition a pipeline may be required to get the water to the airstrip site. The exact routing of the pipeline is not known at this stage, however, as it would not trigger any Listed Activities it is not shown on the layout. Water might be transported by tanker to the airstrip in which case a pipeline would not be necessary. No aircraft fuel would be stored on-site. The proposed layout is illustrated in Figure 1.

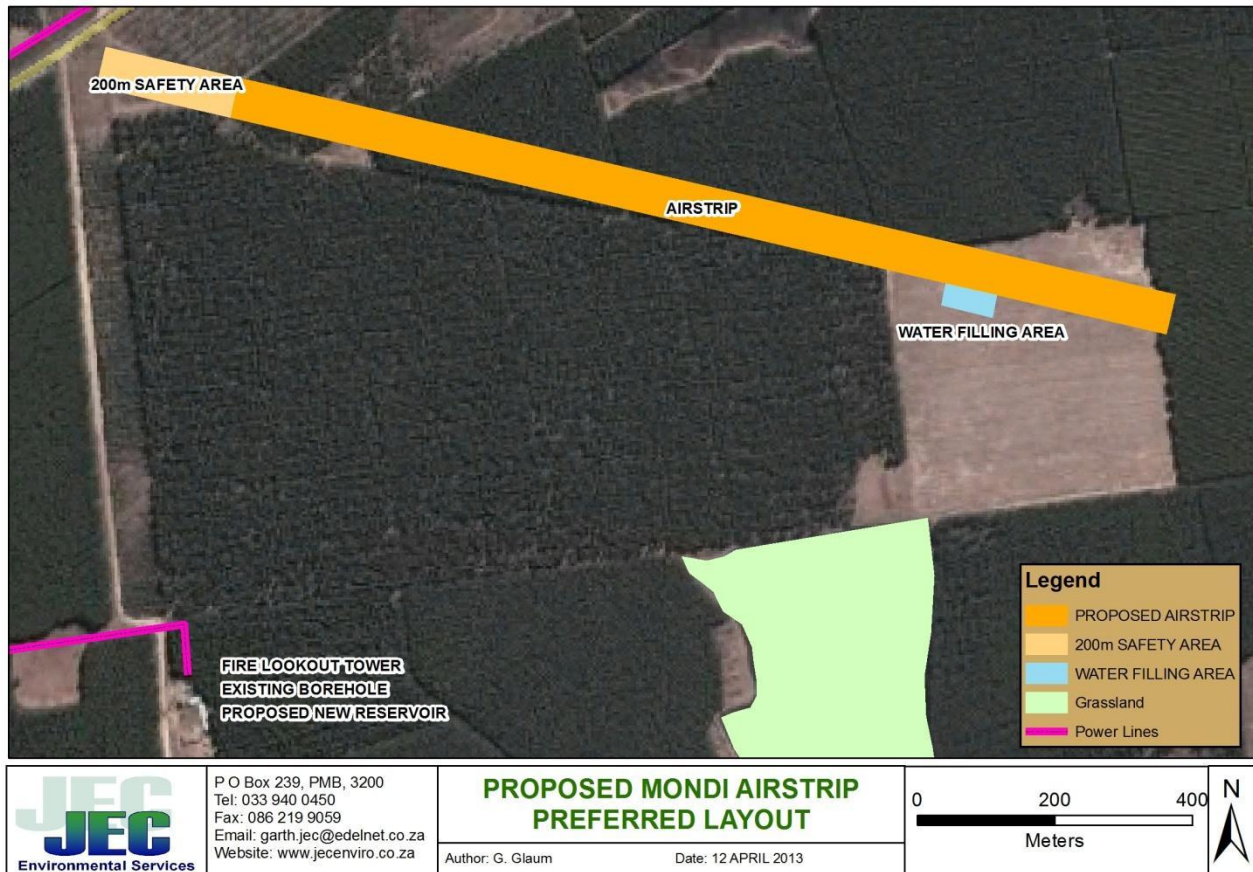


FIGURE 1: PROPOSED LAYOUT FOR THE MONDI AIRSTRIP.

2. AIM OF AN ENVIRONMENTAL MANAGEMENT PROGRAMME

The aim of this EMPr is to identify and minimise, as far as possible, potential impacts the proposed development may have on the surrounding biophysical and socio-economic environment during the following phases:

- Pre-construction;
- Construction;
- Post-construction and rehabilitation; and
- Operation.

The purpose of the EMPr is to:

- Encourage good management practices through planning and commitment to environmental issues;
- Define how the management of the environment is to be reported and performance evaluated;
- Provide rational and practical environmental guidelines to:

- Minimise disturbance of the natural environment;
 - Prevent or minimise all forms of pollution;
 - Protect indigenous flora and fauna;
 - Comply with all applicable laws, regulations, standards and guidelines for the protection of the environment; and,
 - Adopt the best practicable means available to prevent or minimise adverse environmental impacts.
- Develop waste management practices based on prevention, minimisation, recycling, treatment or disposal of wastes;
 - Describe all monitoring procedures required to identify impacts on the environment; and
 - Make employees and contractors aware of environmental obligations.

3. ENVIRONMENTAL COMPLIANCE

3.1. RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

The Property Owner and Contractor (and / or its agents) will be responsible for environmental management on site during all four phases of development, namely pre-construction, construction, post-construction and operation. Surrounding landowners must be notified in advance of any potentially disturbing activities.

The Applicant is required to appoint an independent Environmental Control Officer (ECO) to ensure compliance with the approved EMPr during the pre-construction, construction and post-construction and rehabilitation phases. During these phases, the ECO will conduct site inspections and compile a monitoring report to submit to the Compliance Department of the Mpumalanga Department of Economic Development, Environment and Tourism (DEDET). The frequency of inspections and reporting will be specified in the Record of Decision (ROD) for the proposed development.

3.2. TRAINING OF EMPLOYEES

The Contractor (during pre-construction, construction and post-construction and rehabilitation) and the Operational Manager (during post-construction, rehabilitation and operation) has a responsibility to ensure that all those people involved in the project are aware of, and are familiar with, the environmental requirements for the project. This EMPr should be part of the Terms of Reference (ToR) for all Contractors, Sub-contractors, Suppliers, Staff and Visitors.

During the pre-construction, construction, and post-construction and rehabilitation phases, all Contractors have to give some assurance that they understand the EMPr and that they will comply with the conditions therein. All senior and supervisory staff members shall familiarise themselves with the full contents of this EMPr. They shall know and understand the specifications of the EMPr and be able to assist other staff members in matters relating to the EMPr.

During the operational phase, the Operational Manager, as well as all senior and supervisory staff members, must understand and comply fully with the contents of this EMPr. In addition, all other site personnel must be educated in the contents of this document.

It is recommended that an environmental awareness training programme for all staff members should be arranged by the Contractor (during pre-construction, construction and post-construction and rehabilitation) and the Operational Manager (during operation). Before commencing with any work, all staff members must be appropriately briefed about the EMPr and relevant occupational health and safety issues. This training should be regularly repeated to ensure that all staff members are familiar with the requirements of the EMPr. In addition, this training should be repeated for any new personnel.

3.3.COMPLAINTS REGISTER AND ENVIRONMENTAL INCIDENT BOOK

Any complaints received from the community (during any of the four phases) must be registered and recorded by the Contractor and / or Operational Manager on site. The complaint must be brought to the attention of the ECO, who will ensure that the Contractor and / or Operational Manager respond accordingly. The following information will be recorded:

- Time, date and nature of the complaint;
- Response and investigation undertaken; and
- Actions taken and by whom.

All complaints received will be investigated and a response (even if pending further investigation) is to be given to the complainant within 7 days. A Complaints Register is attached in Appendix A.

All environmental incidents occurring on the site must be recorded (during all four phases). The following information must be provided:

- Time, date, location and nature of the incident; as well as,
- Actions taken and by whom.

An Environmental Incidents Register is attached in Appendix B.

3.4. ENVIRONMENTAL MONITORING AND REPORTING

Environmental monitoring of the pre-construction, construction and post-construction and rehabilitation phases of the development will be undertaken by the ECO on a regular basis to ensure compliance with all aspects of the EMPr.

In order to facilitate communication between the ECO, Resident Engineers (RE), Contractors and Senior and Supervisory staff members, it is important that a suitable chain of command is structured that will ensure that the ECO's recommendations have the full backing of the project team before being conveyed to the necessary person. In this way, penalties as a result of non-compliances with the EMPr may be justified as failure to comply with instruction from the highest authority.

During the pre-construction, construction and post-construction and rehabilitation phases it is recommended that monitoring be undertaken on a weekly basis. The ECO will communicate any environmental issues to the RE, who will in turn, communicate these concerns to the appropriate individual (Contractor). A monthly monitoring report should be submitted to the DEDET.

During the operational phase environmental monitoring is not recommended, however, the Environmental Management Programme will outline specific items which will need to be monitored by the Applicant.

3.5. NON-COMPLIANCE WITH THE EMPr

Difficulties may be encountered with carrying out mitigation measures that could result in future non-compliance. The Contractor and / or Operational Manager shall put in place procedures to motivate staff members to comply with this EMPr, and to deal with acts of non-compliance, or malicious damage to the environment. Penalties for non-compliance need to be discussed with the Contractor and / or Operational Manager at the earliest stage.

3.6. EMPr AMENDMENTS / EMPr INSTRUCTIONS

No EMPr amendments (relaxation or revision of any mitigation measure) shall be allowed without approval from the relevant authority (DEDET). Motivations for amendments to the EMPr may be discussed with the ECO.

The ECO may propose EMPr amendments on behalf of the applicant or issue EMPr instructions (corrective actions, remediation and rehabilitation). These amendments or instructions issued by ECO shall be implemented within the specified time frame.

4. LEGISLATIVE FRAMEWORK

4.1. THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA ACT (ACT 108 OF 1996)

The Constitution of the Republic of South Africa is the legal source for all law, including environmental law, in South Africa. The Bill of Rights is fundamental to the Constitution of the Republic of South Africa and in, Section 24 states that:

"Everyone has the right (a) to an environment that is not harmful to their health or well-being; and (b) to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

4.2. NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

The National Environmental Management Act (NEMA) is South Africa's overarching environmental legislation and has, as its primary objective to provide for co-operative governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state and to provide for matters connected therewith (Government Gazette, 1998).

The Act provides for the right to an environment that is not harmful to the health and well being of South African citizens; the equitable distribution of natural resources, sustainable development, environmental protection and the formulation of environmental management frameworks (Government Gazette, 1998).

In terms of Section 28 (1) of the NEMA:

"(1) Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment. (2)...the persons on whom subsection (1) imposes an obligation to take reasonable measures, including the owner of land, a person in control of land or premises, or a person who has a right to use the land or premises on which or in which – (a) any activity or process is or was performed or undertaken; or (b) any other situation exists, which causes or has caused or is likely to cause significant pollution or degradation of the environment. (3) The measures required in terms of subsection (1) may include measures to – (a) investigate, assess and evaluate the impact on the environment; (b) inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment; (c) cease, modify or control any act, activity or process causing pollution or degradation; (d) contain or prevent the movement of pollutants or the causant of degradation; (e) eliminate the source of the pollution or degradation; or (f) remedy the effects of the pollution or degradation..."

4.3. SUSTAINABLE DEVELOPMENT

The principle of Sustainable Development has been established in the Constitution of the Republic of South Africa (108 of 1996) and given effect by NEMA. Section 1 (29) of NEMA states that:

"1(29)...Sustainable development means the integration of social, economic and environmental factors into the planning, implementation and decision-making process so as to ensure that development serves present and future generations."

Similarly the guiding principles established in Section 2 (3) of NEMA state that:

"2(3) Development must be socially, environmentally and economically sustainable. (4) (a) Sustainable development requires the consideration of all relevant factors including the following: (i) That the disturbance of ecosystems and loss of biological diversity are avoided, or where they cannot be altogether avoided, are minimised and remedied; (ii) that pollution and degradation of the environment are avoided, or where they cannot be altogether avoided, are minimised and remedied...(vii) that negative impacts on the

environment and on peoples environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.”

Thus Sustainable Development requires that there is an integration of social, environmental and developmental concerns and that greater attention to each of these aspects of development will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future (United Nations Department of Economic and Social Affairs, Division for Sustainable Development, 1992).

4.4. POLLUTER PAYS PRINCIPLE

The 'polluter pays' principle provides that 'the cost of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment'. NEMA imposes a duty of care (Section 28 of NEMA) on every person who causes, has caused or may cause significant pollution or degradation of the environment to take reasonable measures to prevent the pollution or degradation of the environment from occurring, continuing or reoccurring. Insofar as such harm to the environment is authorised by law or cannot reasonably be avoided, NEMA requires that the pollution must be minimised and rectified.

4.5. CIVIL AVIATION ACT (NO. 13 OF 2009)

The Civil Aviation Authority governs civil aviation in South Africa and is an agency of the Department of Transport (DOT). It is charged with promoting, regulating and enforcing civil aviation safety and security. To this end they have guidelines which regulate the establishment of an aerodrome.

The act states the following:

"To repeal, consolidate and amend the aviation laws giving effect to certain International Aviation Conventions; to provide for the control and regulation of aviation within the Republic; to provide for the establishment of a South African Civil Aviation Authority with safety and security oversight functions, to provide for the establishment of an independent Aviation Safety Investigation Board in compliance with Annex 13 of the Chicago Convention, to give effect to certain provisions of the Convention on Offences and Certain other Acts Committed on Board Aircraft; to give effect to the Convention for the Suppression of Unlawful Seizure of Aircraft and the Convention for the Suppression of

Unlawful Acts against the Safety of Civil Aviation; to provide for the National Aviation Security Program; to provide for additional measures directed at more effective control of the safety and security of aircraft, airports and the like; and to provide for matters connected thereto."

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

The Conservation of Agricultural Resources Act (CARA) is an Act of the National Department of Agriculture that makes provision for the conservation of the natural agricultural resources of South Africa through:

- *Maintaining the production potential of land;*
- *Combating and prevention erosion;*
- *Preventing the weakening or destruction of the water sources;*
- *Protecting the vegetation; and*
- *Combating weeds and invader plants.*

Amended Regulations 15 and 16 of CARA were promulgated on 30 March 2001 in response to the accelerating deterioration of South Africa's natural resources due to invasion by alien invasive plants, as well as a heightening public awareness with regards to environmental matters. The Act now boasts a far more comprehensive list of species that are declared weeds and invader plants and has divided the species into three categories.

Category 1 species (e.g. Triffid Weed, Lantana) are considered the worst offenders. They are declared weeds and may not occur on any land or on any inland water surface throughout South Africa. No person is allowed to sell, advertise, exhibit, transmit, send, deliver for sale, exchange or dispose of any weed. It is also illegal to cause or permit the dispersal of any weed from one place to another.

Category 2 species (such as Pine and *Eucalyptus*) are also problematic but are commonly grown for commercial purposes or any viable and beneficial function, such as woodlots, fire belts, building material, animal fodder and soil stabilization. These invader plants can only be grown in areas demarcated as sites where such plants may be established, retained and strictly controlled.

Category 3 plants (such as Jacarandas) are generally ornamental plants that may be retained, but no new planting or trade or propagating of these plants is permitted.

The land user also has to ensure that steps are taken to curb the spread of propagating material of the invader plants to land and inland water surfaces outside the demarcated areas. Category 2 species are regarded as weeds outside of these demarcated areas and landowners are required to take steps to control the species where they occur on their properties. If weeds or invader plants occur contrary to the provisions of these regulations, the land user must control them by means of any of the control methods that are appropriate for the species concerned. Any action taken to control weeds or invader plants must be executed with caution and in a manner that will have minimal environmental impact. If a landowner fails to comply with these regulations, a criminal case may then be brought against the landowner and the National Department of Agriculture may issue a directive setting a date by when the property must be cleared.

DRAFT

5. PRE-CONSTRUCTION

Potential environmental impacts, impact sources and objectives are described, and environmental management mitigation measures to be implemented during construction are specified. The Resident Engineer and Contractor shall adhere to these measures at all times.

Key to abbreviations:

Resident Engineer	RE	Operational Manager	OM
Environmental Control Officer	ECO	Senior and Supervisory Staff	SSS

LAYOUT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
<p>The Contractor is to adhere to the following with regards to the Materials Storage Area:</p> <ul style="list-style-type: none"> • The site selected must be approved by the ECO. If the ECO is not satisfied with the proposed site, alternative sites must be proposed and discussed with the ECO until an acceptable compromise is reached. • The extent of the storage area must be defined and all activities must be confined within this area. The ECO will be required to authorise any extension or change in location of the storage area. • The storage area must be adequately fenced to discourage the theft of materials and equipment from the site. • The storage area is to be maintained in a neat and orderly state at all times. 	RE/ECO	Before and during construction	Site inspection	
Provision must be made for adequate ablution facilities.	ECO	On-going	Site inspection	
Adequate parking must be provided for site staff and visitors. Parking areas must be underlain by an impermeable surface to prevent oil / fuel leaking into the soil, surface or ground water.	RE	During site establishment	Site inspection	
ABLUTIONS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Potable water must be available at all times at various points within the construction site.	ECO	Before and during construction	Site inspection	
Where waterborne sewerage is not available a reputable company, approved by the RE, must provide portable chemical toilets. Such toilets must be available for all staff.	ECO	During site establishment	Site inspection	
Toilets must be placed outside areas susceptible to standing or flowing water.	RE/ECO	During site establishment	Site inspection	

The construction of long drop toilets is forbidden.	ECO	On-going	Site inspection	
Under no circumstances may open areas drainage lines, streams or the surrounding bush be used for ablutions.	ECO	On-going	Site inspection	
PROVISION FOR SITE WASTE DISPOSAL	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
An adequate number of waste receptacles must be available at strategic locations around the construction site for gathering all domestic refuse, and to minimise littering.	ECO	On-going	Site inspection	
Bins must be lined for efficient control and safe disposal of waste.	ECO	On-going	Site inspection	
Recycling and the provision of separate waste receptacles for different types of waste must be encouraged.	ECO	On-going	Site inspection	
The excavation and use of rubbish pits on site is forbidden.	ECO	On-going	Site inspection	
A fenced area must be allocated for waste sorting and disposal.	RE/ECO	During site establishment	Site inspection	
GENERAL SUBSTANCES AND MATERIALS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Choice of location for storage areas must take into account prevailing winds, distance from water bodies and general on-site topography.	ECO	Before construction	Site inspection	
Storage areas must be designated, demarcated and adequately fenced if necessary.	ECO	Before construction	Site inspection	
No fuel is to be stored on site.	ECO	Duration of construction	Site inspection	
A designated working area must be constructed and must be underlain by an impermeable surface (e.g. a concrete slab or plastic lining).	ECO	During site establishment	Site inspection	
All handling of potentially toxic or hazardous material, and the repair, maintenance and storage of vehicles and equipment must be undertaken on the impermeable working surface in accordance with the Materials Safety Data Sheets (MSDS).	RE/ECO	On-going	Site inspection and review of MSDSs	
Fire prevention facilities must be present and easily accessible at all storage facilities.	ECO	During site establishment	Site inspection	
RISKS ASSOCIATED WITH MATERIALS ON SITE	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Material stockpiles must be stable and well secured to avoid collapse and possible injury to workers.	RE	On-going	Site inspection	
Flammable materials should be stored as far as possible from adjacent plantation areas.	RE/ECO	During site establishment	Site inspection	

Fire fighting equipment is to be present on site at all times in accordance with the Occupational Health and Safety Act (85 of 1993).	RE/ECO	During site establishment	Site inspection and review of OHAS	
Obstruction to drivers' line of sight as a result of stockpiles must be avoided, especially at intersections and on corners.	ECO	On-going	Site inspection	
Land owners adjacent to the site are to be notified in advance of any known potential risks with the construction site and associated activities.	RE	On-going	Liaison with RE and neighbours	
HAZARDOUS SUBSTANCES AND MATERIALS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Material Safety Data Sheets (MSDS's) must be readily available for all chemicals / hazardous substances to be used on site. Where possible and available MSDS's should include additional information on ecological impacts and measures to minimise and mitigate any negative environmental impacts in the result of an accidental spill.	RE	Before construction commences	Review of MSDSs	
Hazardous storage areas must be bunded with an impermeable liner to protect water quality. The Contractor must submit a methods statement to the RE for approval.	RE/ECO	During site establishment	Review of methods statement	
Storage areas containing hazardous substances / materials must be clearly sign-posted.	ECO	During site establishment	Site inspection	
Staff handling hazardous substances / materials must be aware of their potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available.	ECO	During staff induction / On-going	Site inspection, inspection of PPE and liaison with personnel	
The Contractor must devise a procedure for dealing with accidental spills, which has to be approved by the ECO. The procedure must distinguish between those spills that can be cleaned up by the Contractor and those that will require specialist input. The name and contact numbers of various clean up companies must be posted and visible at the camp office. This procedure must also include a provision to notify the ECO of any spills.	ECO	Prior to establishment of storage area	Review of methods statement	
The Contractor must ensure that the necessary materials, equipment and chemicals are available on the site to deal with spills of any of the hazardous materials present (e.g. Drizit). The contractor must ensure that all staff members are trained on how to use a spill kit.	RE/ECO	On-going	Site inspection	
The Contractor must compile an inventory of all hazardous substances to be used and	RE/ECO	On-going	Site inspection	

stored on the site, and must ensure that they know the effects of these substances on their staff and the environment. A copy of this inventory must be supplied to the ECO.				
MATERIALS MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Contractors shall prepare a source statement indicating the sources of all materials and submit these to the RE for approval prior to the commencement of any work.	RE/ECO	On award of contract	Review of source statement	
A signed document from the supplier of natural materials must be obtained confirming that they have been obtained in a sustainable manner and in compliance with relevant legislation (if applicable).	ECO	On receipt of natural materials	Review of signed document	
ENVIRONMENTAL EDUCATION AND AWARENESS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
It must be ensured that all site personnel have a basic level of environmental awareness training. The Contractor must ensure that all construction staff are aware of the following: <ul style="list-style-type: none"> • What is meant by “environment”; • Why the environment needs to be protected and conserved; • How construction activities can impact on the environment; • What can be done to mitigate against such impacts; • Awareness of emergency spills response provisions; and • Social responsibility during construction (being considerate to neighbours etc.). 	ECO	During staff induction / On-going	Site inspection and staff interviews	
It is the Contractors’ responsibility to provide the site foreman with no less than 1 hour’s environmental training and to ensure that the foreman has sufficient understanding to pass this information onto the construction staff.	ECO	Prior to moving onto site	Liaison with C & Foreman	
Translators are to be used if necessary, to ensure that all staff understands what is required of them in terms of the EMPr.	ECO	On-going	Liaison with C & Foreman	
The RE / ECO must be on hand to explain any technical issues and to answer questions.	ECO	On-going	-	
The need for a ‘clean site’ policy needs to be explained to everyone working on site.	ECO	During staff induction, followed by on-going monitoring	Liaison with C & Foreman	

WORKER CONDUCT ON SITE	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
<p>A general regard for the social and ecological well-being of the site and surrounding areas is expected of the site staff. Workers need to be made aware of the following rules:</p> <ul style="list-style-type: none"> • No alcohol / drugs to be allowed on site; • No firearms allowed on site or in vehicles transporting staff to / from the site; • Prevent excessive noise; • No harvesting of firewood from the site or from areas adjacent to it; • Construction staff are to make use of the facilities provided for them, as opposed to ad hoc alternatives; • Trespassing on private / commercial properties adjoining the site is forbidden; and • Driving under the influence of alcohol is prohibited. 	ECO	During staff induction, followed by On-going monitoring.	Site inspection and liaison with Contractor, Foreman and Personnel	
DUST / AIR POLLUTION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
The Contractor must make alternative arrangements (other than fires) for cooking and / or heating requirements. LPG cookers may be used, provided that all safety regulations are followed.	RE	On-going	Site inspection	
Construction vehicles must be fully serviced and maintained to ensure that unnecessary emissions do not occur.	RE/ECO	On-going	Proof of vehicle servicing required	
STORMWATER MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
An earthen berm must be constructed along the upslope perimeter of the storage area, to divert excess surface runoff away from potentially contaminated surfaces within the storage area.	RE/ECO	During site establishment.	Site inspection	
An earthen berm must also be constructed along the down slope perimeter of the storage area, to contain any contaminated runoff.	RE/ECO	During site establishment.	Site inspection	
The subsoil stripped from the site can be used for creating the berm.	RE/ECO	During site establishment.	Site inspection	
FAUNA AND FLORA	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Care must be taken to avoid the introduction of invasive plant species to the site and surrounding areas.	ECO	On-going	Site inspection	
No trees / shrubs / groundcover may be removed or vegetation stripped without the prior permission of the ECO.	ECO	Before and during construction	Site inspection	

6. CONSTRUCTION

Most environmental impacts of developments occur in the construction phase of the project. As a result the regulation of construction activities and the general conduct of the workforce is an essential component of this EMPr and must be carried out in conjunction with the ECO.

CONSTRUCTION SITE	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
ACCESS				
The Contractor is to ensure that all access roads are maintained in good working condition by attending to potholes, corrugations, storm water damage and spills as soon as these develop.	C	When necessary	Site inspection	
STORMWATER MANAGEMENT				
To prevent stormwater damage, the increase in storm water run-off resulting from construction activities must be estimated and the drainage system assessed accordingly. A drainage plan must be submitted to the ECO for approval.	C	On-going	Site inspection	
Contractor must monitor and manage site drainage to avoid standing water and soil erosion.	RE	On-going	Site inspection	
Contaminated run-off from the construction site must not discharge into adjacent properties.	RE	On-going	Site inspection	
WASTE MANAGEMENT				
The Contractor must identify disposal sites for the various categories of waste likely to be generated on site and must provide the ECO with documented proof of the type and volume of waste disposed of at these sites.	ECO	Weekly	Site inspection and review of waste disposal documents	
Waste must be separated into appropriate containers for recycling. Containers must be provided in a convenient location and be suitably marked.	C/ECO	On-going	Site inspection	
Hazardous waste must be disposed of separately and at a registered hazardous waste disposal facility. Proof of registration and delivery must be kept.	C/ECO	On-going	Site inspection	
The general cleanliness of the site and compliance with the waste disposal requirements outlined will form part of the site inspections undertaken by the ECO.	ECO	On-going	Site inspection	
Burning of waste on site is forbidden.	C/EECO	On-going	Site inspection	
Domestic waste is to be stored in watertight, scavenger-proof and wind proof waste receptacles.	ECO	During site establishment	Site inspection	

On completion of construction, all leftover construction materials are to be removed from the working area and storage area (sand, gravel, cement, cement bags, timber) and disposed of at a registered disposal facility or distributed to local communities.	C/ECO	On completion of project	Site inspection	
Waste is to be cleared on a regular basis.	C/ECO	On-going	Site inspection	
ABLUTION FACILITIES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
One (1) toilet per 20 workers must be provided. Contractors must maintain toilets in clean and working order.	RE	During site establishment / Daily	Site inspection	
The surrounding bush is not to be used as a toilet.	ECO/RE/C	On-going	Site inspection	
PROVISION OF WATER	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Potable water is to be sourced from an existing supply, and made available to all workers.	RE	During site establishment / On-going	Site inspection	
A dedicated source of water for dust suppression purposes must be determined during site establishment and be approved by the ECO.	C/ECO	During site establishment	Site inspection	
Water pipelines (and other service-related pipelines, e.g. electricity or telephone cables) must be routed adjacent to existing roads in order to minimise the impact of extensive ground works on the environment.	C	On-going	Site inspection	
CONCRETE MIXING	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
If small volumes of concrete are to be mixed (manually), mixing is to be undertaken on a hard surface covered in plastic sheeting so that concrete waste and runoff can be contained.	ECO	On-going	Site inspection	
If large volumes are generated, the following requirements must be met: <ul style="list-style-type: none"> Mixing area must be underlain by an impermeable surface that is sufficient to trap spills; Runoff from the concrete mixing area is to be contained and channelled into a sump; and All concrete waste is to be collected and removed from the site for disposal at an appropriate disposal site. 	ECO	On-going	Site inspection	
The collection sumps must be properly managed and regularly cleared to prevent overflows and must be disposed of at an appropriate disposal site.	ECO	On-going	Site inspection	

FAUNA AND FLORA	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
<p>The following requirements must be met to ensure the protection of the vegetation:</p> <ul style="list-style-type: none"> • All staff members are required to attend the Contractors environmental awareness training sessions; • Employees will be subject to fines, should they be caught removing or damaging flora on site or on surrounding property; • No vegetation may be cleared without prior permission from the ECO; • Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas - particular attention must be paid to imported material; • Disturbance to birds, animals and reptiles and their habitats should be minimised wherever possible; • Use only plant species endemic / indigenous to the site for rehabilitation purposes; and • Re-vegetate the disturbed area as quickly as possible. 	ECO	On-going Rehabilitation /	Site inspection	
The trapping and killing of wild animals and disturbance to their habitats must be prohibited. Strict controls and penalties must be enforced. Any incidences must be reported to the Compliance Department of DEDET and Mpumalanga Tourism and Parks Agency.	RE	On-going	Site inspection and liaison with Contractor	
Construction activities must be confined to the construction site only. The site must be demarcated and the contractor and all labourers must remain within this area at all times.	C/ECO	On-going	Site inspection and liaison with Contractor	
All undeveloped areas (i.e. those outside the development footprint), and in particular the riparian zones must be managed appropriately.	ECO	On-going	Site inspection	
All services (electricity cable, water and sewer pipes) must be consolidated alongside roads to reduce the earthworks-associated disturbance on the property.	C/ECO	During site establishment	Site inspection	
No indigenous or medicinal / 'muthi' plants may be collected or harvested at any stage of construction or operation, either from the property or from neighbouring properties.	C/ECO	On-going	Site inspection	
No development must occur within 100 metres of the riparian area.	C/ECO	On-going	Site inspection	
REMOVAL OF VEGETATION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Site clearing activities should only be conducted immediately prior to construction, to reduce the amount of time topsoil is exposed, and thus the potential for erosion.	ECO	On-going	Site inspection	

WEED CONTROL	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
The Contractor is to control and eradicate the spread of alien weeds during the project.	ECO	On-going	Site inspection	
Alien plants that have been removed must be discarded at an appropriate refuse site. Should alien vegetation have seeds, it should be transferred to the storage area where it can be burned in a controlled manner.	ECO	When required	Site inspection	
WATER QUALITY	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
The Contractor is to prevent the contamination of water by materials used during construction and ensure the following: <ul style="list-style-type: none"> Implement measures to prevent seepage of liquid materials into ground where it could contaminate groundwater; Ensure prompt cleaning up of accidental spillages (Section 20 of the National Water Act (36 of 1998)). 	ECO	Weekly	Site inspection	
STORMWATER MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Un-channelled Flow: During construction, unconfined surface flow must be contained to avoid soil erosion.	C/ECO	On-going	Site inspection	
All earthworks must be carried out in accordance with the guidelines stipulated in SABS 1200.	C/ECO	On-going	Site inspection	
To reduce the possibility of soil erosion, the resurfacing of newly cleared vegetated areas must take place immediately after clearing.	C/ECO	On-going	Site inspection	
Suitable erosion control methods must be implemented in areas sensitive to erosion. These measures could include: <ul style="list-style-type: none"> The suitable use of sand bags or Hessian sheets; The prompt rehabilitation of exposed soil areas within indigenous vegetation to ensure that soil is protected from the elements; The removal of vegetation only as it becomes necessary for work to proceed; Prevent the unnecessary removal of vegetation especially on steep slopes; and All the necessary precautions in terms of design and construction of earthworks, cuts and fills must be taken. 	C/ECO	On-going	Site inspection	
General Principles Post-development stormwater flow rates should not exceed pre-development stormwater rates	C/ECO	On-going	Site inspection	

It must be ensured that stormwater is appropriately managed and controlled on site.	C/ECO	On-going	Site inspection	
There is to be a periodic inspection of the site's drainage system to ensure that the flow of surface water is not obstructed.	C/ECO	On-going	Site inspection	
SOIL EROSION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Once the site has been cleared of vegetation, the top layer of soil (200mm) should be removed and stockpiled in a designated area, if topsoil stockpiles are to be established.	ECO	On-going	Site inspection	
The entire site must not be cleared of vegetation before construction commences, ensuring that exposed areas are kept to a minimum, wherever possible.	C/ECO	On-going	Site inspection	
Stormwater management and wind screening must be undertaken to prevent soil loss from the site.	C	On-going	Site inspection	
Side tipping of spoil and excavated materials shall not be permitted – all spoil material shall be deposited of as directed by the ECO.	C	On-going	Site inspection	
Battering of all banks shall be such that cut and fill embankments are no steeper than the previous natural slopes unless otherwise permitted by the ECO. Cut and fill embankments steeper than the original ground levels are to be re-vegetated immediately on completion of trimming. Alternatively cut and fill embankments are to be protected against erosion using bioengineering stabilisation measures.	C/ECO	As cut and fill activities are completed	Site inspection	
SOIL HANDLING	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Soil must not be handled when it is wet as this will result in unnecessary compaction.	C	When necessary	Site inspection	
Repeated handling of soil must be avoided as this would result in compaction and the loss of soil structure.	C/ECO	On-going	Site inspection	
In order to minimise the risk of spillage and loss through wind erosion, trucks transporting soil must not be overloaded when conveying soil to and from the site.	C	On-going	Site inspection	
Soil being transported long distances must be covered with a tarpaulin.	C	On-going	Site inspection	
STOCKPILE MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
General Guidelines Stripped soil is to be stockpiled so that it can be used in the rehabilitation process.	RE/ECO	On-going	Site inspection	
Soil that is to be stockpiled for an extended period must be stored: In a sheltered site where it will not be exposed to the effects of wind erosion; and Outside the working area where it will not be disturbed or contaminated.	ECO	When necessary	Site inspection	

Topsoil (top 200 mm) is not to be mixed with subsoil.	ECO	When necessary	Site inspection	
Soil is not to be stockpiled against tree trunks as this will encourage ant infestations.	ECO	Ongoing	Site inspection	
Soil is to be stockpiled in small manageable piles (not to exceed 2m).	ECO	On-going	Site inspection	
<p>Stockpile Maintenance</p> <p>Stockpiles are to be protected from wind and water erosion:</p> <ul style="list-style-type: none"> • Short-term stockpiling (less than 3 weeks) erosion control measures will not need to be implemented; however, limitations on the area to be cleared will apply. • Medium-term stockpiling (more than 3 weeks), stockpiles must be covered with biomatting. • Long-term stockpiling (more than 2 months), stockpiles must be re-vegetated by hydro-seeding or sowing with an appropriate grass / legume mix. 	ECO	Weekly	Site inspection	
The colonisation of stockpiles by invasive plants must be controlled by removing the plants when they germinate. The purpose of this is to reduce the risk of developing a seed bank of invasive species within the stockpiled soil.	ECO	Monthly.	Site inspection	
SPOIL USE, HANDLING AND DISPOSAL	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
<p>Excess material must first be used for:</p> <ul style="list-style-type: none"> • Creation of rock gabions where required for slope protection and erosion control; • Rehabilitation of cuts; and • Backfill for excavations. 	C/ECO	On-going	Site inspection	
Should the volume of spoil to be disposed of be too large or if the density of spoil stockpiles becomes too high, the spoil will have to be removed from the working area to an appropriate area.	C	When necessary	Site inspection	
DUST / AIR POLLUTION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Exposed surfaces must be re-vegetated as soon as possible.	C/ECO	On-going	Site inspection	
Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present.	C	On-going	Site inspection	
Appropriate dust suppression measures must be used when dust generation is unavoidable (dampening).	RE	On-going	Site inspection	
No fires are allowed on site.	RE	On-going	Site inspection	
Vehicles and machinery are to be kept in good working order and to meet manufacturers specifications for safety, fuel consumption etc.	ECO	On-going	Site inspection	

Should excessive emissions be observed, the Contractor is to have the equipment seen to as soon as possible.	RE	As directed by the RE	Site inspection	
All vehicles should comply with speed limits on the access roads. Vehicles should be properly maintained and regularly serviced to ensure that exhaust emissions are controlled.	C	As directed by the C	Site inspection	
HAZARDOUS SUBSTANCES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
The handling and storage of hazardous materials must be in accordance with the MSDS and must be restricted to the storage area as the appropriate pollution control measures will need to be in place. If additional areas / sites are required for the storage or handling of hazardous substances, they must be assessed and approved by the ECO who will then instruct the Contractor to implement the appropriate controls.	RE/ECO	Before construction commences / as additional hazardous are required	Site inspection	
No fuels are to be stored on the site.				
Inventory of Substances The Contractor must compile an inventory of all hazardous substances to be used and stored on the site, and must ensure that they know the effects of these substances on their staff and the environment. A copy of this inventory must be supplied to the RE and ECO.	RE/ECO	Before construction commences and as additional hazardous are required	Review of inventory	
Handling and Storage The Contractor must ensure that the quantities of chemicals stored on site are appropriate for his / her requirements, and must also ensure that they are appropriately stored and handled so as to minimise the risk of spills.	ECO	On-going	Site inspection	
All chemicals must be confined to specific and secured areas that have to be approved by the ECO.	ECO	During site establishment / On-going	Site inspection	
Chemicals must be stored in a bunded area with an impermeable base, which is capable of containing 110% of the bunded material. An impermeable surface could be created by i) placing a layer of clay beneath plastic sheeting ii) placing soil on top of plastic sheeting. When the impermeable surface is no longer required, the plastic sheet along with the contaminated soil must be disposed of off-site at a registered landfill.	ECO	On-going	Site inspection	

<p><u>Spills of Hazardous Substances</u></p> <p>The accidental or negligent spillage of any fuels or potentially hazardous substances must be cleaned up immediately using the most appropriate methodologies, equipment and materials.</p>	RE	When necessary	Site inspection	
<p>The Contractor must ensure that the necessary materials, equipment and chemicals are available on the site to deal with spills of any of the hazardous materials present (e.g. Drizit).</p>	RE/ECO	During site establishment	Site inspection	
<p>The Contractor must devise a procedure for dealing with accidental spills, which has to be approved by the ECO. The procedure must distinguish between those spills that can be cleaned up by the Contractor and those that will require specialist input. The name and contact numbers of various clean up companies must be posted and visible at the camp office. This procedure must also include a provision to notify the Resident Engineer and ECO of any spills.</p>	ECO	Prior to moving onto site	Review of procedures and poster	
<p>Any contaminated soil or water must be removed and stored in a skip until it can be disposed of at an appropriate disposal site.</p>	ECO	When necessary	Site inspection	
<p><u>Recording of Incidents</u></p> <p>The Contractor must provide an Environmental Incident Record Book on site to record the details of any environmental incidents (date, time, cause, action taken). This book will be regularly checked by the ECO who will also cross reference the entries with observations made during site visits.</p>	ECO	Prior to moving onto site / On-going	Review of Incident Record Book	
EQUIPMENT / MACHINERY	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
<p>The Contractor must store all equipment that may leak on an impermeable surface, with watertight drip trays to catch any pollutants.</p>	ECO	On-going	Site inspection	
<p>The drip trays must be cleaned regularly, and must not be allowed to overflow.</p>	RE/ECO	On-going	Site inspection	
<p>Substances collected in the drip trays must be collected and disposed of in an appropriate manner (MSDS).</p>	RE/ECO	On-going	Site inspection	
PERSONAL SAFETY	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
<p>The following personnel are required to wear hard hats:</p> <ul style="list-style-type: none"> • All persons within 10m of any situation where any form of lifting or hoisting is being undertaken; • Any personnel working in any other situation where possibility of head injury is present. 	RE/ECO	On-going	Review of PPE	

Protective gloves are to be worn by all persons engaging in the following: <ul style="list-style-type: none"> • Handling of heavy or sharp edged materials; • Welding or gas cutting activities; • Handling of corrosive chemicals. 	RE/ECO	On-going	Review of PPE	
All persons entering the active working area must wear approved safety boots.	RE/ECO	On-going	Review of PPE	
The following persons must wear safety goggles at all times: <ul style="list-style-type: none"> • Persons operating equipment under dusty conditions; • Persons engaged in cutting or welding activities; • Persons engaged in grinding activities; • Persons handling hazardous chemicals. 	RE/ECO	On-going	Review of PPE	
HERITAGE IMPACTS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Although the site is not likely to feature any heritage impacts, in the event that archaeological or heritage material being uncovered during construction, all construction must be immediately stopped and Mpumalanga Heritage Resource Authority must be contacted on 013 766 5196	C/ECO	On-going	Site inspection	
VISUAL IMPACTS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
The site is to be kept clean at all times to minimise the visual impacts of the site.	ECO	Weekly	Site inspection	
Lighting of the site should be pointed downwards and away from oncoming traffic and natural areas to minimise the visual intrusion.	ECO	During site establishment	Site inspection	
NOISE IMPACTS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Disturbance of the adjacent land neighbours in the vicinity of the construction areas will have to be taken into account during the construction period.	RE	On-going	-	
The siting of areas for delivery of equipment and materials must take into consideration the noise generated by vehicles as well as noise generated by off-loading equipment.	RE	During site establishment	Site inspection	
Jackhammers and their associated compressors exhibit continuous noise that could impact on nearby land owners. Acoustic treatment of the jackhammers must include silencers.	RE	Prior to moving onto site / On-going	Inspection of equipment	
All vehicles and equipment must be properly maintained to reduce unnecessary noise.	RE	On-going	Inspection of equipment servicing logs	

Noisy activities are to be restricted to the times given in the project specifications or general conditions of the contract.	RE/C	On-going	Site inspection	
STAFF CONDUCT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
The Contractor must monitor the performance of construction workers to ensure that the points relayed during their induction have been properly understood and are being followed. If necessary the ECO and / or a translator is to be called onto site to further explain aspects of environmental or social behaviour that are unclear.	RE/ECO	On-going	Liaison with C	
A general regard for the social and ecological well-being of the site and surrounding areas is expected of the site staff. Workers need to be made aware of the following rules: <ul style="list-style-type: none"> • No alcohol / drugs to be allowed on site; • No firearms allowed on site or in vehicles transporting staff to / from the site; • Prevent excessive noise; • Construction staff are to make use of the facilities provided for them, as opposed to ad hoc alternatives; • Trespassing on private properties adjoining the site is forbidden; and • Driving under the influence of alcohol is prohibited. 	ECO	On-going	Liaison with labour	
DAMAGE TO PROPERTY AND STRUCTURES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Damage to structures and fences on private property must be avoided as far as possible.	RE	On-going	Site inspection	
Should damage to the aforementioned occur, the Contractor will be responsible for repairing the damage caused or compensating the property owner accordingly.	RE	On-going	-	
Any fencing removed to enable construction to proceed must be replaced on completion of work in that area.	RE	On-going	Site inspection	
COMMUNICATION WITH INTERESTED & AFFECTED PARTIES (I&AP's)	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
The RE and Contractor are responsible for On-going communication with all I&AP's.	RE/ECO		Liaison with C & RE	
A complaints register is to be located at the site office. The Contractor must account for any missing pages. This register is to be tabled during regular site meetings.	ECO	Monthly	Review of Complaints Register	
Queries and complaints are to be handled by:	ECO	On-going		

<ul style="list-style-type: none"> • Documenting details of such communications; • Submitting these for inclusion into the complaints register; • Brining issues to the immediate attention of the RE; and • Taking remedial action as per the RE and / or ECO's instructions. 				
<p>Selected staff are to be made available for formal consultation with I&AP's to:</p> <ul style="list-style-type: none"> • Explain the construction process; and • To answer any questions. 	ECO	On-going	Liaison with C & RE	
Should the construction staff be approached by members of the public or other stakeholders, they are to assist them in locating the RE or Contractor.	RE	On-going	-	
The Contractor is to inform surrounding land owners of disruptive activities at least 24 hours in advance. This can either take place by way of leaflets placed in post boxes giving the RE and Contractors contact details or any other method approved by the RE.	RE/ECO	At least 24 hours before the activity is to take place	Liaison with Contractor, RE and neighbours	
FIRE PROTECTION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
All buildings must be equipped with adequate emergency fire extinguishers, in accordance with fire safety regulations and insurance requirements.	C/ECO	On-going	Site inspection	
As required by law (National Veld and Forest Fire Act, No 101 of 1998), firebreaks must be maintained on the property boundaries.	C/ECO	On-going	Site inspection	
A dedicated on-site water storage facility for emergency fire-fighting must be established.	C/ECO	On-going	Site inspection	
SPILL CONTINGECY PLAN	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
<p>The Department of Water Affairs and Mkhondo Local Municipality must be notified of any spill of hazardous substance. Should this occur the following steps must be taken:</p> <ul style="list-style-type: none"> • Stop / shut off the source of the overflow. • Contain the overflow i.e. prevent it from spreading. • Clean up the overflow as quickly as possible and dispose of the waste at an appropriate treatment facility. • Report the incident to the appropriate authorities and record it in the incident register. • Investigate the cause and repair any damage that has been caused to prevent future incidents. 	C/ECO	On-going	Site inspection	

7. POST-CONSTRUCTION AND REHABILITATION

Site rehabilitation is an essential component of this EMPr and must be carried out in conjunction with the ECO. The guideline is to be used as the basic structure for the site rehabilitation; the specific details must be decided by the RE and / or OM in conjunction with the ECO. This applies most specifically to the soil replacement and re-vegetation components.

The requirements for the control of soil, water, dust and noise pollution stipulated in this EMPr still applies during the site rehabilitation phase of the project. Similarly, the requirements for soil management, erosion control, alien vegetation removal and vegetation and fauna protection also apply.

INFRASTRUCTURE	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Disassemble all infrastructure units and remove components from the working and storage areas. This will include temporary office and storage structures and containers, water supply pipelines, water storage containers, waste storage containers, power supply, etc.	C/ECO	On completion of construction	Site inspection	
Drain all portable chemical toilets, with no spillage of the contents. Transfer the contents to an appropriate disposal site.	C	On completion of construction	Site inspection	
Disassemble all fencing around the camp and either sell, auction or donate the components to the local community or transfer the waste components to a disposal site or the Contractor's base.	C	On completion of construction	Site inspection	
POLLUTION CONTROL STRUCTURES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Excavate all areas of contaminated substrate, transfer the contaminated substrate to an appropriate disposal site and treat the affected areas with appropriate ameliorants.	RE	On completion of the project	Site inspection	
Remove all plastic linings used for pollution control and transfer to an appropriate disposal site.	RE	On completion of the project	Site inspection	
Break up all concrete structures that have been created (e.g. working and parking surfaces) and remove concrete waste to an appropriate disposal site.	RE	On completion of the project	Site inspection	
WASTE	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Remove all leftover construction materials from the storage area and construction site and either sell, auction, donate to the local community or transfer to the	RE	On completion of the project	Site inspection	

Contractor's base.				
Drain all collection sumps and dispose of the contaminated liquid and solids at an approved disposal site.	C/ECO	On completion of construction	Site inspection	
Remove all construction debris, litter and domestic waste from the construction site and transfer to an appropriate disposal site. Remove all waste receptacles and either donate to the local community, auction, or transfer to Contractor's base.	RE	On completion of the project	Site inspection	
Do not burn or bury any waste at the construction site – all waste is to be transferred to a permitted disposal site.	RE/ECO	On completion of the project	-	
ALIEN VEGETATION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
Existing and newly established alien vegetation must be removed from the property (both within the fenced area and the adjacent grassland areas) and replaced, where necessary, with suitable indigenous / endemic plant species. During this process, it is imperative that indigenous vegetation is not removed or disturbed. (See Section 8.1 for alien vegetation removal methods).	RE/ECO	On-going	Site inspection	
Only indigenous species should be used for landscaping. No exotic plants are to be introduced.	RE/ECO	On-going	Site inspection	
REVEGETATION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
All areas of bare soil must be re-vegetated and rehabilitated.	C/ECO	On completion of construction	Site inspection	
It is important that the re-vegetation activities be planned in advance to ensure that seed and plant stockists are able to supply the required volume when required.	RE	On completion of construction	Site inspection	
Only indigenous and preferably endemic plant species will be permitted on site. Unless otherwise authorised by the appropriate licence to re-plant commercial timber.	ECO	During rehabilitation phase.	Site inspection	
All re-vegetated areas will need to be watered to ensure plant growth and development.	C/ECO	On-going.	Site inspection	
SPILL CONTINGENCY PLAN	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✗
The Department of Water Affairs and Mkhondo Local Municipality must be notified of any spill of hazardous substance. Should this occur the following steps must be taken: <ul style="list-style-type: none"> • Stop / shut off the source of the overflow. 	C/ECO	On-going	Site inspection	

8. OPERATION

At the commencement of the operational phase, the ECO must audit the facility using this EMPr. It is usual for this auditing to take place once a month for the first six months, proceeding to once every three months, then once every six months. However, it is at the DEDET's discretion as to the frequency of these assessments. The following EMPr stipulations should be adhered to at all times during the operational phase.

SURFACE AND GROUNDWATER MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Drainage from the site must be controlled to ensure that runoff from the site will not culminate in off-site pollution.	OM/ECO	On-going	Site inspection	
To prevent the contamination of natural water resources, the following must be adhered to: <ul style="list-style-type: none"> Equipment, machinery and vehicles must be maintained in good order; Machinery and equipment maintenance must be undertaken in specially designated areas; Leaks and spillages must be promptly cleaned up and by suitably qualified personnel (Section 20 of the National Water Act). 	OM	On-going	Site inspection	
HAZARDOUS SUBSTANCES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
No fuel is to be stored on site.	OM/ECO	On-going	Site inspection	
ABLUTION FACILITIES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Ablution facilities are located at the staff quarters. These should be available for use by pilots and other staff at the airstrip.	OM/ECO	On-going	Site inspection	
WASTE MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
Where possible, recyclable waste (i.e. paper, cans, plastics, glass, scrap metal) must be recycled. There must be suitable designated containers for each type of recyclable waste on site.	OM/ECO	On-going	Site inspection	
<u>Domestic waste</u> is to be cleared on a regular basis and transferred to a permitted domestic disposal site. No domestic waste is to be buried or burned on site.	OM/ECO	On-going	Site inspection	
Domestic waste is to be stored in watertight, scavenger-proof and wind proof waste receptacles.	ECO	On-going	Site inspection	
STORAGE FACILITIES	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / ✕
General Storage Areas Storage facilities must be suitably located and kept tidy.	OM/ECO	On-going	Site inspection	

Equipment and any chemicals on site must be clearly marked and correctly stored.	OM/ECO	On-going	Site inspection	
Fire fighting equipment must be easily accessible in the storage areas.	OM/ECO	On-going	Site inspection	
FLORA AND FAUNA	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Only indigenous species are to be allowed to be planted on the site.	OM/ECO	On-going	Site inspection	
The trapping and killing of wild animals must be prohibited during operational phase of the development.	OM/ECO	On-going	Site inspection	
ALIEN VEGETATION	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
The establishment of invasive alien plant species during the operational phase of the development must be prevented (i.e. regular weeding and / or spraying). (See Section 10 for alien vegetation removal methods).	OM/ECO	On-going	Site inspection	
Only indigenous species should be used for landscaping. No exotic plants are to be introduced.	OM/ECO	On-going	Site inspection	
TRAFFIC AND ACCESS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Access areas must be maintained in good working condition (i.e. potholes must be repaired as soon as they develop).	OM/ECO	On-going	Site inspection	
Vehicles must be restricted to demarcated access areas, routes and turning areas.	OM/ECO	On-going	Site inspection	
The access road should be repaired where potholed, by improving surface drainage, the filling of potholes and the removal of small areas of subsidence.	OM/ECO	On-going	Site inspection	
EQUIPMENT AND MACHINERY	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
The OM must store all equipment that may leak on an impermeable surface, with watertight drip trays to catch any pollutants.	OM/ECO	On-going	Site inspection	
The drip trays must be cleaned regularly, and must not be allowed to overflow.	OM/ECO	On-going	Site inspection	
Chemicals collected in the drip trays must be collected and disposed of in an appropriate manner (MSDS).	OM/ECO	On-going	Site inspection	
NOISE IMPACTS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
The staff must be made aware of the need to keep noise to a minimum.	OM/ECO	On-going	Site inspection	
All equipment, vehicles and machinery must be properly maintained to minimise unnecessary noise.	OM/ECO	On-going	Site inspection	
VISUAL IMPACTS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x

The site is to be kept clean at all times to minimise the visual impacts of the site.	OM/ECO	On-going	Site inspection	
FIRE MANAGEMENT	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
All personnel must be familiar with the protocol in the event of a fire occurring on site. Personnel must know who to inform about a fire and where to group.	OM/ECO	On-going	Site inspection	
There must be appropriate and sufficient fire fighting equipment throughout the facility (Occupational Health and Safety Act (Act No 85 of 1993)). A suitably qualified person must regularly assess the fire fighting measures at the site.	OM/ECO	On-going	Site inspection	
As required by law (National Veld and Forest Fires Act (Act No. 101 of 1998)), firebreaks must be burnt on the property boundaries at the appropriate time (Autumn) to prevent the spread of fires. This must be done by a suitably qualified person.	OM/ECO	On-going	Site inspection	
HEALTH AND SAFETY	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
A First Aid Box must be present on site, and its contents must in compliance with the Occupational Health and Safety Act (Act No 85 of 1993).	OM/ECO	On-going	Site inspection	
All staff must receive basic environmental awareness training. If required, translators must be used. The following aspects must be addressed: <ul style="list-style-type: none"> • What the term "environment" covers; • Why the environment needs to be protected and conserved; • How operational activities can negatively affect the environment; • What action should be taken to mitigate against identified negative impacts; and • Awareness of emergency response procedures. 	OM/ECO	On-going	Site inspection	
If possible a fence should be erected around the perimeter to ensure people and animals do not wander on to the airstrip.	OM/ECO	On-going	Site inspection	
SOCIO-ECONOMIC	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
A Complaints Register (Appendix A) must be available at the site office. The pages must be numbered (any missing pages must be accounted for), and the book must have a carbon copy of each page.	OM/ECO	On-going	Register inspection	
I&APs must be made aware of the availability of the Complaints Register.	OM/ECO	On-going	Register inspection	
Complaints must be handled in the following manner:	OM/ECO	On-going	Register	

<ul style="list-style-type: none"> • All communication associated with a complaint must be documented; • The complaint must be brought to the immediate attention of OM; and • Immediate action must be taken as per the OM's instructions. 			inspection	
In the interests of local economic development, local businesses and labour etc. must be considered first, before employing services and workers from further afield.	OM/ECO	On-going	Liaison with Mondi Limited	
LOGGING OF INCIDENTS	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
Any incidents associated with the development must be recorded in The Environmental Incident Record Book (Appendix B).	OM/ECO	On-going.	Register inspection	
An Environmental Incident Record Book must be available on site to record the details of any environmental incidents (date, time, location, cause, nature of incident, action taken, people involved).	OM/ECO	On-going.	Register inspection	
All incidents must be recorded accurately, regardless of their extent	OM/ECO	On-going.	Register inspection	
The OM must frequently check the Incident Report Book, and any significant incidents must be reported to the relevant authority.	OM/ECO	On-going.	Register inspection	
Entries in the Environmental Incident Record Book must be regularly reviewed by the OM, in order to identify and thus address any recurring incidents or incident hotspots.	OM/ECO	On-going.	Register inspection	
SPILL CONTINGENCY PLAN	RESPONSIBILITY	OCCURRENCE	METHOD	✓ / x
<p>Emergency Spill Response Plan (Appendix C)</p> <p>The Department of Water Affairs and Mkhondo Municipality must be notified of any spill of hazardous substance. Should this occur the following steps must be taken:</p> <ul style="list-style-type: none"> • Stop / shut off the source of the overflow. • Contain the overflow i.e. prevent it from spreading. • Clean up the overflow as quickly as possible and dispose of the waste at an appropriate treatment facility. • Report the incident to the appropriate authorities and record it in the incident register. • Investigate the cause and repair any damage that has been caused to prevent future incidents. 	C/ECO	On-going	Site inspection	

9. ALIEN VEGETATION REMOVAL AND REHABILITATION PLAN

9.1. RELEVANT LEGISLATION

Amended Regulation 15 of the Conservation of Agricultural Resources Act (CARA - Act No 43 of 1983) stipulates that Category 1 plants (Declared Weeds) will no longer be tolerated in South Africa and must be removed. Bugweed (*Solanum mauritianum*) and Indian Shot (*Canna indica*) are both examples of Category 1 species in terms of the CARA. If these species are not controlled, they will multiply and become established over a greater area. This can lead to the displacement of indigenous plant species in the surrounding area. Gum trees (*Eucalyptus* sp.) are an example of a Category 2 species in terms of the CARA.

9.2. REMOVAL METHODS

In keeping with these requirements, the Department of Water Affairs and Forestry (DWAF), in their Working for Water programme recommends the following regarding alien invasive species:

Any control programme for alien vegetation must include the following 3 phases:

- Initial control: drastic reduction of existing population
- Follow-up control: control of seedlings, root suckers and coppice growth
- Maintenance control: sustain low alien plant numbers with annual control

The following is extracted from the Working for Water website (www.dwaf.gov.za/wfw/Control) and gives detail on species-specific methods to remove Bugweed, Chromalaena and Lantana:

PLANTS	METHOD	PRODUCT	RATE
BUGWEED (<i>Solanum mauritianum</i>)			
Big Trees	Cut down & spray coppice	STARANE 200 (Fluroxypyr 200g/l)	125ml/10 litres water (0.5 litres/Ha – spray when 500mm tall)
		MAMBA (Glyphosphate 360g/l) TOUCH DOWN (Glyphosphate Trimesium 480g/l)	150ml/10 litres water (3 litres/Ha) 2 litres/Ha (spray when 500mm tall)
	Cut stump	CHOPPER (Imazapyr 100g/l) TIMBREL 3A (Triclophyr Amine Salt 360g/l)	200ml/10 litres/Ha (1 litre/Ha – cut surface only) 300ml/10 litres water (2.25 litres/Ha – cut surface only)
Frill		CHOPPER (Imazapyr 100g/l) TIMBREL 3A (Triclophyr	200ml/10 litres/Ha (1 litre/Ha)

		Amine Salt 360g/l)	300ml/10 litres water (1.5 litres/Ha)
CHROMALAENA – TRIFFID WEED (<i>Chromalaena odorata</i>)			
Seedlings	Hand pull	None	
Seedlings and regrowth	Foliar spray	clopyralid / triclopyr (-amine salt) 90 / 270 g/L SL <i>Confront 360 SL (L7314)</i>	50ml / 10 Litres water and 0.5% Wetter & Dye
		fluroxypyr / picloram 80 / 80 g/L ME <i>Plenum 160 ME (L7702)</i>	75ml / 10 Litres water and 0.5% Wetter & Dye
LANTANA, TICKBERRY (<i>Lantana camara</i>)			
All	Foliar spray	fluroxypyr / picloram 80 / 80 g/L ME <i>Plenum 160 ME (L7702)</i>	150ml / 10 Litres water and 0.5% Wetter & Dye
		glyphosate (ammonium) 680 g/kg WG <i>Roundup Max 680 WG (L6790)</i>	160gr / 10 Litres water and 0.1% Dye
		glyphosate (isopropylamine) 240 g/L SL <i>Tumbleweed 240 SL (L4781)</i>	300ml / 10 Litres water and 0.1% Dye
		glyphosate (isopropylamine) 360 g/L SL <i>Glyph 360 SL (L4767), Mamba 360 SL (L4817), Roundup 360 SL (L407), Springbok 360 SL (L6719)</i>	300ml / 10 Litres water and 0.1% Wetter & Dye
		glyphosate (isopropylamine) 450 g/L SL <i>RoundUp Turbo 450 SL (L7166)</i>	240ml / 10 Litres water and 0.1% Dye

		glyphosate (isopropylamine) 480 g/L SL <i>Mamba Max 480 SL (L7714)</i>	220ml / 10 Litres water and 0.1% Dye
		glyphosate (potassium) 500 g/L SL <i>Touchdown Forte Hitech 500 SL adjuvant incl.(L7305)</i>	200ml / 10 Litres water and 0.1% Dye
		glyphosate (sodium) 500 g/kg WG <i>Kilo 500 WSG (L7431)</i>	220gr / 10 Litres water and 0.5% Wetter & Dye
		imazapyr 100 g/L SL <i>Chopper 100 SL (L3444), Hatchet 100 SL (L7409)</i>	200ml / 10 Litres Water
		picloram (potassium salt) 240 g/L SL <i>Access 240 SL (L4920), Browser 240 SL (L7357)</i>	100ml / 10 Litres Water and 0.5% Wetter & Dye
	Cut stump / Frill	fluroxypyr / picloram 80 / 80 g/L ME <i>Plenum 160 ME (L7702)</i>	150ml / 10 Litres water and 0.5% Wetter & Dye
		imazapyr 100 g/L SL <i>Chopper 100 SL (L3444), Hatchet 100 SL (L7409)</i>	200ml / 10 Litres Water
		picloram (potassium salt) 240 g/L SL <i>Access 240 SL (L4920), Browser 240 SL (L7357)</i>	100ml / 10 Litres Water and 0.5% Wetter & Dye

9.3.RE-VEGETATION

Re-vegetation of previously disturbed areas, i.e. areas cleared of alien species, should be undertaken using indigenous species. Sufficient time, irrigation, rest periods and organic fertilisers should be applied to rehabilitated areas to promote establishment of plants.

9.4.ON-GOING MANAGEMENT

The following activity must be undertaken to ensure the on-going removal of alien vegetation from the site:

- Performance Indicators: Introduction of 'new' invasive species must be prohibited and the spread of existing weeds must be minimised. Indigenous plant species must be assessed for their successful establishment.
- Monitoring and Reporting: Visual site assessment. This is to be done initially by the ECO during the construction phase, then by the Operations Manager during operation.
- Corrective Action: Education of construction and operational personnel with regard to spread and maintenance of alien plants. On-going implementation of alien plant removal methods is to be done, as described above followed up with re-vegetation using indigenous species.

10. CONCLUSION

In terms of NEMA, everyone is required to take reasonable measures to ensure that they do not pollute the environment. Reasonable measures include informing and educating employees about the environmental risks of their work and training them to operate in an environmentally responsible manner. Furthermore, in terms of NEMA, the cost to repair any environmental damage shall be borne by the person responsible for the damage.

If the above-mentioned management recommendations are adopted it is anticipated that most of the negative environmental impacts associated with the pre-construction, construction, post-construction and rehabilitation, and operational phases of the development can be mitigated. An appointed ECO will need to regularly monitor the site to ensure that the required environmental controls are in place and working effectively.

APPENDIX C: MONDI AIRSTRIP SPILL CONTINGENCY PLAN

Farm Name	
Physical Address	
Farm Phone	
EMERGENCY PHONE NUMBERS	
Farm Owner	
Farm Manager	
DWA	
DEDET	
Department of Health and Safety	
Department of Transport	
Mkhondo Municipality	
Contact list of neighbouring farms	

Who to notify in the event of a spill:

The Sewerage Treatment Plant will be situated at the lowest point of the site, as indicated on the attached layout. In order to limit the risks of spills, the inlet and outlet launders will include 24 hour storage, and a standby generator will be provided.

Should this or any other spill of hazardous substance occur, the following steps must be taken:

- Stop / shut off the source of the overflow.
- Contain the overflow i.e. prevent it from spreading.
- Clean up the overflow as quickly as possible and dispose of the waste at an appropriate treatment facility.
- Report the incident to the appropriate authorities and record it in the incident register.
- Investigate the cause and repair any damage that has been caused to prevent future incidents.

APPENDIX D: ORIGINAL COMMENTS RECEIVED

Garth Glaum

From: Vaino Prinsloo [vaino@vodamail.co.za]
Sent: 06 October 2011 08:08
To: garth.jec@edelnet.co.za
Cc: Joyce Botha
Subject: RE: Proposed Construction of an Airstrip - Background Information Document (Ref No. 4724)
Attachments: Mondi Airstrip.pdf; _Certification_.htm

Mr. Garth Glaum

The Mpumalanga Tourism and Parks Agency have no objection to the proposed construction of an Airstrip, as there are no Natural Habitat on the farms. See attached map from the Mpumalanga Biodiversity Conservation Plan (C-plan).

Regards

Vaino



Vaino Prinsloo
Zoologist Scientific Services Terrestrial
Mpumalanga Tourism and Parks Agency

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-----Original Message-----

From: Johan Eksteen [<mailto:johan@mtpa.co.za>]
Sent: 28 September 2011 02:58 PM
To: Joyce Botha; Vaino Prinsloo
Subject: FW: Proposed Construction of an Airstrip - Background Information Document

From: Riaan de Lange
Sent: Wednesday, September 28, 2011 2:54 PM
To: Marisa Coetzee; Johan Eksteen
Subject: FW: Proposed Construction of an Airstrip - Background Information Document

FYI

[\[cid:image002.jpg@01CC7DEE.7A041C80\]](#)

Riaan de Lange

Garth Glaum

From: Dave Lucas [LucasDD@eskom.co.za]
Sent: 09 November 2011 06:44
To: Garth Glaum
Cc: Archibold Mogokonyane; Annah Mosima; Louise Human; Annelien Pretorius
Subject: Proposed Construction of an Airstrip - Background Information Document
Attachments: Jec1.doc; Jec.doc; Jec2.doc; _Certification_.htm

Hi Garth

Your background information on the proposed airstrip application dated September 2011 refers.

We regret to inform you that Eskom is not in favour of the proposed position of the airstrip due to the following reasons:

1. The airstrip, as indicated on your application sketch, will be surrounded by the nearby the existing Eskom Distribution Panbult 22kV powerline which will create hazardous conditions and therefore the landing strip is not according to the Eskom specifications.
2. Eskom requires detailed information on the distances between the existing power lines, landing end and approach surface of the airstrip.
3. Eskom must receive a letter from the Department of Civil Aviation as part of your application.

We thank you and hope you will find the above in order. Should you have technical queries on the Eskom standards and specifications please feel free to phone our Network Services Department for that area, Chief Engineer, Mr Kris Rozmiarek at Tel: 013 693 3144 or email RozmiaK@eskom.co.za

Regards

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Please consider the environment before you print this e-mail.
"If you're not using it, switch it off"

NB: This email and its contents are subject to the Eskom Holdings Limited EMAIL LEGAL NOTICE which can be viewed at http://www.eskom.co.za/email_legalnotice

From: Garth Glaum [mailto:garth.jec@edelnet.co.za]
Sent: 08 November 2011 03:54 PM
To: Dave Lucas

Garth Glaum

From: Kris Rozmiarek [Kris.Rozmiarek@eskom.co.za]
Sent: 11 January 2012 15:24
To: Garth Glaum
Cc: Anton Kotze; Louise Human; Annelien Pretorius
Subject: Re: FW: Proposed Construction of an Airstrip - Background Information Document
Attachments: DST_34-2052 aviation - pow lines.pdf; Obstacle Surface Identification.pps; _Certification_.txt

Dear Garth,

I have no records in my archive of any email received from you. Seeing that your query is floating in Eskom for some time already, I would like to provide you with the information and my interpretation of the requirements although procedurally, in my opinion, it should be handled by our Land & Rights Section.

Attached please find two documents. One is an Eskom Standard dealing with aviation requirements with regards to power lines & another Eskom properties and the second is a graphical presentation of the requirements of the civil aviation authorities with regards to aerodrome design and operations.

Eskom Standard describes what Eskom should do to meet civil aviation authority*s requirements with respect to existing aerodromes. By applying Eskom Standard in reverse, the previous correspondence states that position of proposed landing strip in relation to existing power lines violets requirements.

The option to resolve the problem is to move the position of the landing strip and apply to Eskom for confirmation or to apply to Eskom for line deviations on the customer expense. In both cases you will have to provide position of the runway and its final ground elevation levels.

Any further correspondence with this regards should be directed to Land & Rights section of the Land Development Department, Mrs Annelien Pretorius and Mrs Louise Human respectively.

Regards
Kris

Kris Rozmiarek (Pr. Eng)
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+27 86 665 4813 (Fax to e-mail)
+27 82 890 1871 (Cell)
e-mail: Kris.Rozmiarek@Eskom.co.za

>>> "Garth Glaum" <garth.jec@edelnet.co.za> 11/01/2012 08:48 >>>
Dear Kris

My email of 9 November 2011 included below has reference. I have not to date received any response from your office with regards to my query.
Could

Garth Glaum

From: Leon van den Heever [VandenHeeverL@caa.co.za]
Sent: 13 January 2012 10:48
To: garth.jec@edelnet.co.za
Subject: Airfield design standards
Attachments: Airport Information licensing and J93.pdf; _Certification_.htm

Dear Sir,

Our telephonic conversation, regarding the above, refers.

Attached please find the information as promised.

Disregard the pages on aerodrome licensing.

Regards,

Leon van den Heever 083 447 2527

Confidentiality and Disclaimer Notice: This email contains the South African Civil Aviation Authority (“SACAA”) confidential information intended only for the person to whom it is addressed and access to this e-mail by anyone else is unauthorized. Any recipient who is not a named addressee is not entitled to read the rest of the email or disclose its contents to any person or take copies. An incorrect addressee is requested to notify SACAA immediately by return email. Whilst all reasonable steps are taken to ensure the accuracy and integrity of information and data transmitted electronically and to preserve the confidentiality thereof, no liability or responsibility whatsoever is accepted if information or data is, for whatever reason, corrupted or does not reach its intended destination. In the event that this e mail is of a personal nature and not business related, the recipient must note that this e-mail is not authorised by, or sent on behalf of the senders employer.

Garth Glaum

From: Lizelle Stroh [StrohL@caa.co.za]
Sent: 20 January 2012 13:21
To: garth.jec@edelnet.co.za
Cc: Hugh Radebe; Gary Newman
Subject: FW: Proposed Construction of an Airstrip - Background Information Document
Attachments: CATS 139.01.33.pdf; Obstacle Surface Identification.pps; Obstacle Application Form 20110223.pdf; Property boundarie co-ordinates.xls; _Certification_.htm

Good day Garth, Please could you apply this obstacle surface to your drawings and apply the markings as specified in our Technical Standards.

If you need approval of proposal, please supply us with an Obstacle application and complete the excel sheet with the proposed line co-ordinates in it. Sorry for replying now as we were processing the solar projects towards Eskom, first bit that was due for the 4th November 2011.

Thanks

Kind regards

Lizell Stroh

Obstacle Specialist

Procedure design and Cartography

For SA Civil Aviation Authority

Tel: 011 545 1232 | **Fax:** 011 5451451 | **Cell:** 083 461 6660 | **Email:** strohl@caa.co.za | www.caa.co.za

From: Hugh Radebe
Sent: 28 November 2011 05:36 PM
To: Lizelle Stroh
Cc: garth.jec@edelnet.co.za
Subject: FW: Proposed Construction of an Airstrip - Background Information Document

Good day, Lizell

Can you please respond to the applicant. I did send this some time back to your office for comments.

Please respond to Garth Gluam.

Regards,

Hugh M. Radebe

Manager: Aerodrome Infrastructure Safety

Aerodrome and Safety

Tel: 011 545 1194 | **Fax:** 011 545 1451/086 641 2733 | **Cell:** 083 451 2627 | **Email:** radebeh@caa.co.za | www.caa.co.za

Garth Glaum

From: Benjamin Moduka [BModuka@mpg.gov.za]
Sent: 29 February 2012 09:39
To: Glaum, Garth
Subject: Re: Proposed Construction of an Airstrip - Background Information Document

Dear Garth

Kindly note that the Mpumalanga Heritage Resources Authority (MHRA) received your background information document for the proposed Airstrip construction in Piet Retief. The information provided in the document and the subsequent telephonic conversation with you suggests that at this stage, there may not be resources of heritage significance on or near the proposed site as the area has already been significantly disturbed due to forest plantation and agriculture. We will appreciate to make comments on your draft basic assesment report. We do not believe that at this stage a Heritage Impact Assesment is necessary.

Kind regards,
Benjamin Moduka
Cultural Heritage Officer: MHRA
Tel: 013 766 5196
Fax: 013 766 8256
bmoduka@mpg.gov.za

>>> "Garth Glaum" <garth.jec@edelnet.co.za> 2012/02/13 12:49 PM >>>
Dear Benjamin

The Proposed Construction of an Airstrip at The Bends, near Iswepe, north-west of Piet Retief, Mpumalanga Province

Please find attached the Background Information Document (BID) for the abovementioned project.

Please note that should you have any queries and/or comments regarding the attached, please may you mark them for the attention of:

Mr. Garth Glaum
JEC Environmental Services
Tel: (033) 001 7540 / Email: garth.jec@edelnet.co.za

Best regards
Garth

Garth Glaum
Environmental Assessment Practitioner
B.Sc. Geography; IAIA



JANET EDMONDS CONSULTING cc.

APPENDIX E: BACKGROUND INFORMATION DOCUMENT

BACKGROUND INFORMATION DOCUMENT

The Proposed Construction of an Airstrip at The Bends, near Iswepe, north-west of Piet Retief, Mpumalanga Province

September 2011



WHAT IS THE PURPOSE OF THIS DOCUMENT?

The purpose of this document is to:

- ◆ Inform Interested & Affected Parties (I&APs) about the proposed project and request their participation;
- ◆ Provide a brief background on the proposed project; and
- ◆ Explain the aims and objectives of the Basic Assessment Process.



WHAT IS PROPOSED?

Mondi Limited (Mondi) wishes to establish an airstrip on their property known as The Bends, near Iswepe, north-west of Piet Retief, in the Mkhondo Local Municipality, Mpumalanga Province. The purpose of the airstrip is to allow for fire bomber planes to land, fill up with water and be dispatched for fire-fighting purposes. This may include the use of the airstrip by the larger "802" Bomber aircraft.

The proposed airstrip will be approx 1.39km in length and 30m wide. Additional areas will be cleared for safety purposes around the airstrip, i.e. a distance of 200m at either ends of the airstrip and a width of 15m on either side of the airstrip.

The airstrip will initially be grassed, but it is likely that it will eventually be hard surfaced. A concrete area of 9m x 400m may later be established to assist the "802" Bomber aircraft with take-off. Water reservoirs with a total capacity of 350 000 litres (350m³) will be established at the airstrip. No aircraft fuel will be stored on-site.



WHAT IS THE APPLICABLE ENVIRONMENTAL LEGISLATION?

Due to the site's close proximity to the Morgenstond Dam Nature Reserve, and to wetland habitat, the applicable Listed Activities in terms of the Amended EIA Regulations (2010) under Section 24(5) of the National Environmental Management Act (Act No 107 of 1998) published in Government Notice No R. 546 are as follows:

- ◆ *Activity 2: The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres, and specific to Mpumalanga: (iii) Outside urban areas, in: (ff) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; and*
- ◆ *Activity 8: The construction of aircraft landing strips and runways shorter than 1,4 km, and specific to Mpumalanga: (ii) Outside urban areas, in: (hh) Areas within 10 km from national parks or world heritage sites or 5 km from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; (jj) Areas on the watercourse side of the development setback line or within 100 metres from the edge of a watercourse / wetland where no such setback line has been determined.*

Thus a Basic Assessment Process is required. Furthermore, under Government Notice No R. 543 of 2010, the Applicant is required to appoint an independent Environmental Assessment Practitioner (EAP) to conduct the environmental authorisation process. Janet Edmonds Consulting cc. (JEC) has been appointed by Mondi to conduct the Basic Assessment Process for the proposed airstrip.



WHERE IS THE PROPOSED SITE?

The proposed site for the airstrip is located on property owned by Mondi and it traverses three properties, namely Portion 7 Erf Morgenstond 418IT, Portion Erf Panbult 430 IT and Portion Erf The Bends 417 IT. The location is shown on the topographic map in Figure 1 below.

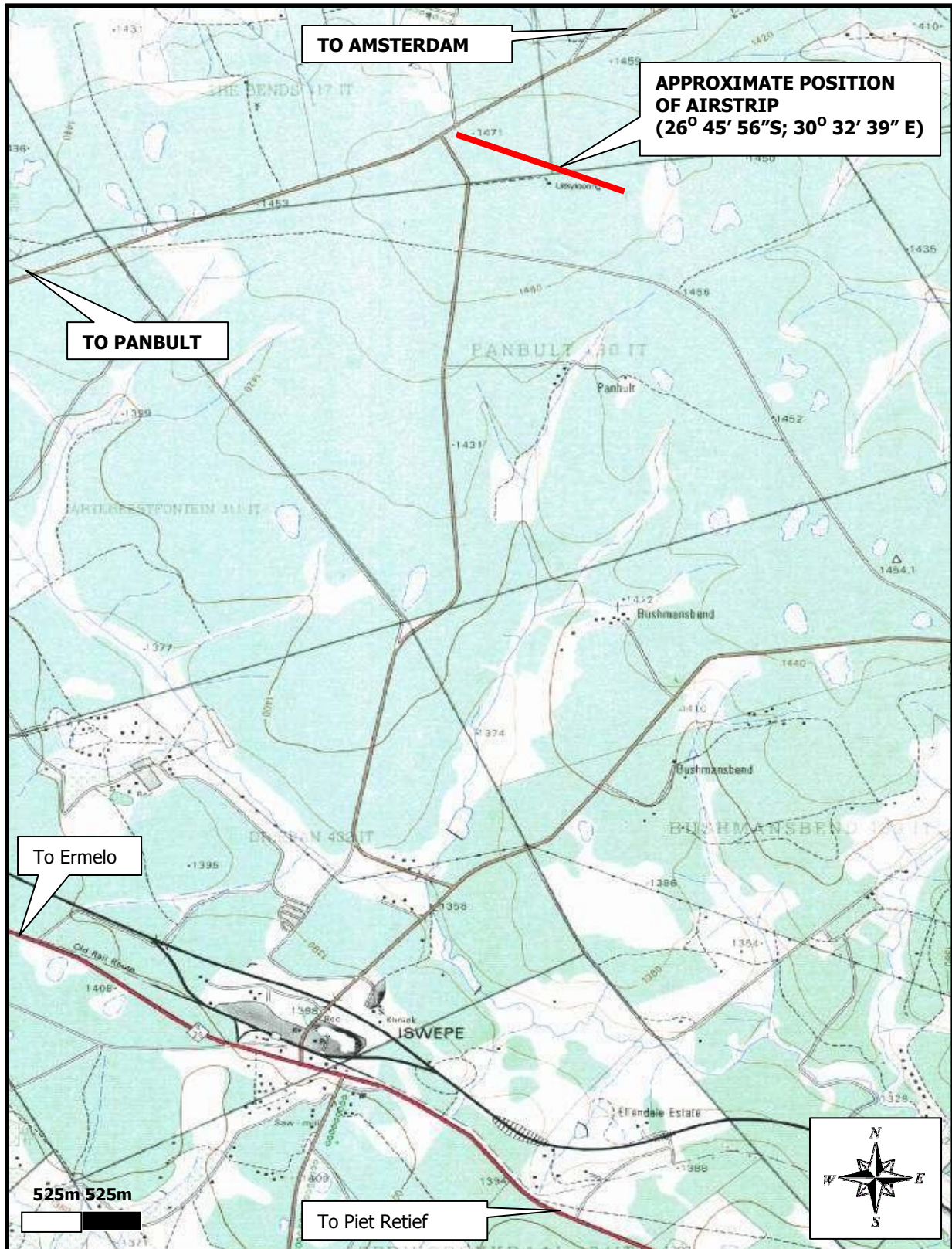


Figure 1. Topographic Map showing the location of the proposed airstrip near Iswepe, north-west of Piet Retief, Mpumalanga (Source: Topographic Series 2630 DC).

The land on which the airstrip is proposed to be constructed is currently under commercial forestry plantations (see Figure 2). A patch of Eastern Highveld Grassland is located at the south-east end of the airstrip - this will not be developed upon.

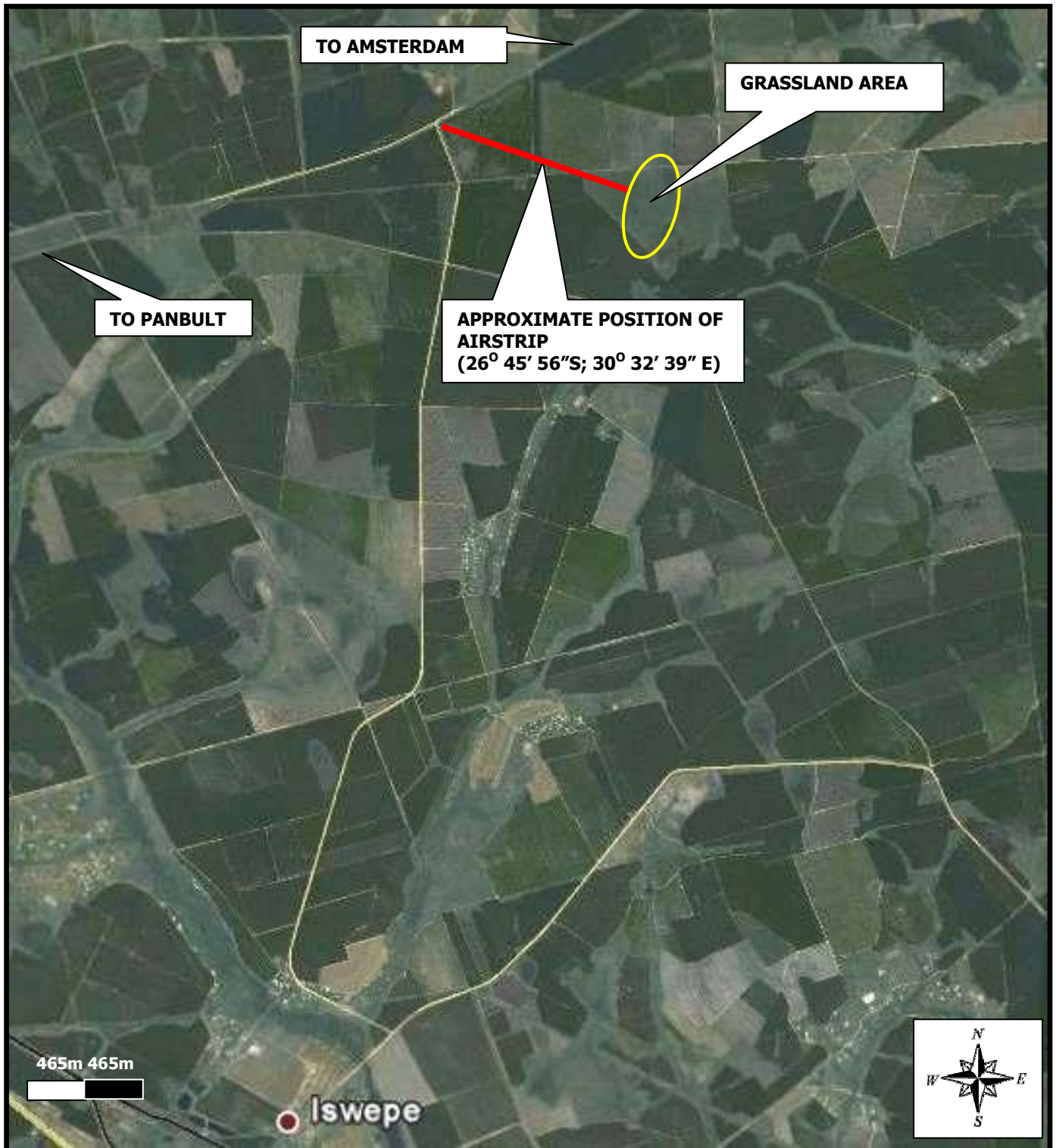


Figure 2. Aerial photograph showing the location of the proposed airstrip, and the surrounding land-uses (Source: Google Earth).



WHAT IS THE AIM OF A BASIC ASSESSMENT PROCESS?

The Basic Assessment Process aims to:

- ◆ Inform and involve all potential I&APs of the proposed development;
- ◆ Identify the potential impacts (positive and negative) that the proposed development may have on the ecological and socio-economic environment;
- ◆ Provide recommendations based on the identified impacts and conduct any necessary specialist studies; and
- ◆ Provide the Department of Economic Development, Environment and Tourism: Mpumalanga (DEDET) with enough information to make an informed decision regarding the proposed development.



WHAT IS INVOLVED IN THE BASIC ASSESSMENT PROCESS?

The Basic Assessment Process can be described as follows:

1. Submission of Application Form:

The EAP will complete the official Application Form and submit it to the relevant DEDET office. This Application Form will include relevant maps and declarations from the EAP and Applicant.

2. Public Participation:

The public and relevant Authorities will be notified of the proposed development through adverts, site posters and direct consultation.

3. Identification of Impacts and Alternatives

Environmental issues, concerns, development constraints and possible development alternatives will be identified using professional judgement, project information, experience of similar projects, a review of available literature, site visits, and consultation with the Applicant, authorities and the public.

4. Impact Evaluation

The significance of environmental issues will be evaluated in terms of their expected extent, intensity, duration and probability of occurrence.

5. Mitigation and Management Measures

Measures to manage and minimise impacts to within acceptable levels, as well as measures to maximise the socio-economic benefits associated with the development, will be identified and recorded in the Basic Assessment Report.

6. Environmental Reporting

The Draft Basic Assessment Report will be made available for review and comment by all I&APs and relevant Authorities. A Final Basic Assessment Report will be compiled including all comments received on the Draft Basic Assessment Report and submitted to the Competent Authority (DEDET) for consideration.

7. Authority Decision

The Final Basic Assessment Report will be used as the basis for the decision, by DEDET on whether the project should be approved or not. The DEDET can refuse permission, grant unconditional permission, or grant permission with conditions.



WHAT ENVIRONMENTAL IMPACTS HAVE INITIALLY BEEN IDENTIFIED?

The following issues have been identified as potentially problematic and will, amongst other issues, be investigated during the Basic Assessment Process:

- ◆ The adjacent indigenous grassland must not be impacted upon;
- ◆ Potential noise pollution to the surrounding areas when aircraft are using the airstrip; and
- ◆ Nearby powerlines must not be impacted upon.

APPENDIX F: PHOTOGRAPHS

APPENDIX F: PHOTOGRAPHS



FIRE LOOKOUT TOWER AND EXISTING RESERVOIR



EXISTING FILLING STATION FOR GROUND TENDERS

**WETLAND AND
GRASSLAND AREA TO
SOUTH OF
PREFERRED SITE**

