



mineral resources

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Reference:
Date:

EC30/5/1/3/3/2/1/0432EM
20 April 2010

South African Heritage Resources Agency
P.O. Box 758
GRAHAMSTOWN
6140

CaseID: 2340

ATTENTION: MR. T. LUNGILE

Sir

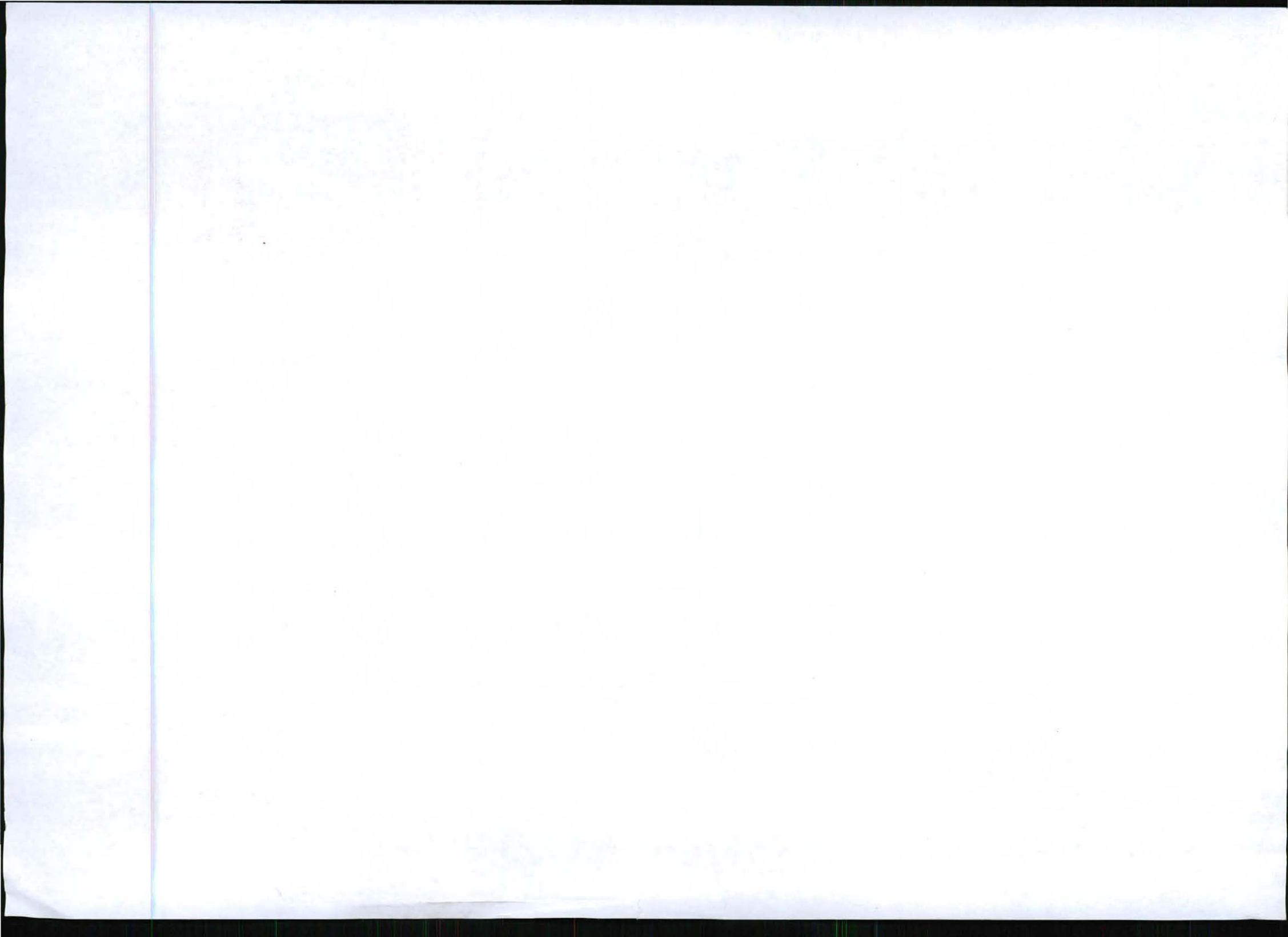
CONSULTATION IN TERMS OF SECTION 40 OF THE MPRDA OF 2002: BORROW PITS FOR UPGRADE OF MR453 BETWEEN UITENHAGE AND WITTEKLIP, EASTERN CAPE

1. The above refers.
2. Attached, a copy of the EMP received from Department of Roads and Transport.
3. Any written comments or requirements your department may have in this regard can be forwarded to this office no later than **18 June 2010**. Failure to do so, will lead to the assumption that your department has no objection(s) or comments with regard to the said documents. Comments may be submitted at your earliest convenience e.g. 30 days from the date hereof in order to reduce the turn around time for the application process.
4. Consultation in this regard has also been initiated with other relevant State Departments.
5. Please use the reference numbers as indicated in all future correspondence.
6. Your co-operation is appreciated.

Yours faithfully

REGIONAL MANAGER

EASTERN CAPE





Eastern Cape Department of Roads and Transport

ENVIRONMENTAL MANAGEMENT PLAN FOR THE USE OF BORROW PITS FOR UPGRADE OF MR453 BETWEEN UITENHAGE AND WITTEKLIP.



Application received in terms of the Mineral and Petroleum
Resources Development Act, 2002 (Act 28 of 2002)
EASTERN CAPE REGION

16 APR 2010

Print Name: S. LUKWANE

Signature:

DEPARTMENT OF MINERALS AND ENERGY

D/2010/04/16/001

EC 30/5/1/3/2/0482MR

REGIONAL-MANAGER
MINERALS AND ENERGY
EASTERN CAPE REGION

PRIVATE BAG / PRIVAATSAK X8076

2010 -04- 16

PORT ELIZABETH 6000
STREEKBESTUURDER
MINERALE EN ENERGIË
OOS-KAAPSTREEK

Environmental Scoping Report

Project Number: J27088

Date: April 2010

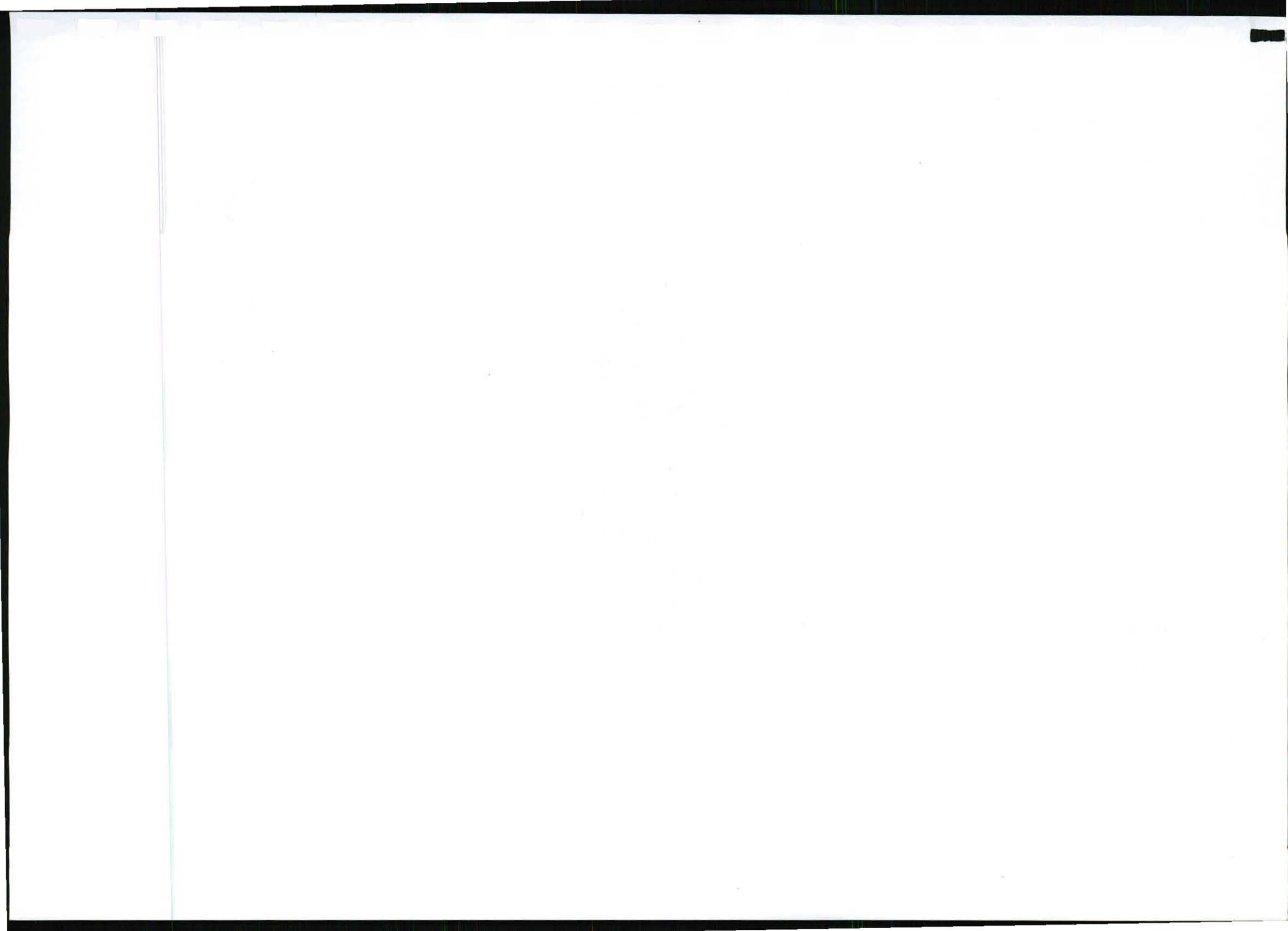


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EXECUTIVE SUMMARY

Background

Arcus GIBB (Pty) Ltd have been appointed by the Eastern Cape Department of Roads and Transport to undertake the design and construction monitoring for upgrading of the MR453 between Uitenhage and Witteklip.

The envisaged upgrading is fully comprehensive and includes reconstruction of the road with all relevant stormwater requirements including bridges, culverts and road furniture. The ruling design speed will be 100 km/h, with reductions to 80 and/or 60 km/h where appropriate.

The proposed project consists of civil engineering works, which requires materials to be sourced for the construction/upgrade of the road. This report represents an application for the mining of the required construction material as well as an Environmental Management Programme (EMP) which will be submitted to the Department of Minerals and Energy.

An Environmental Impact Assessment in the form of a Basic Assessment is being undertaken for the road construction activities. The resulting report will be submitted to the Port Elizabeth office of the Department of Economic Development and Environmental Affairs for their approval.

Approach

This Environmental Management Plan is undertaken in compliance with Section 52 of the Regulations pertaining to the Minerals and Petroleum Resources Development Act, Act 28 of 2002. A Mining Permit is required as each of the borrow pits measure less than 1.5 ha in extent.

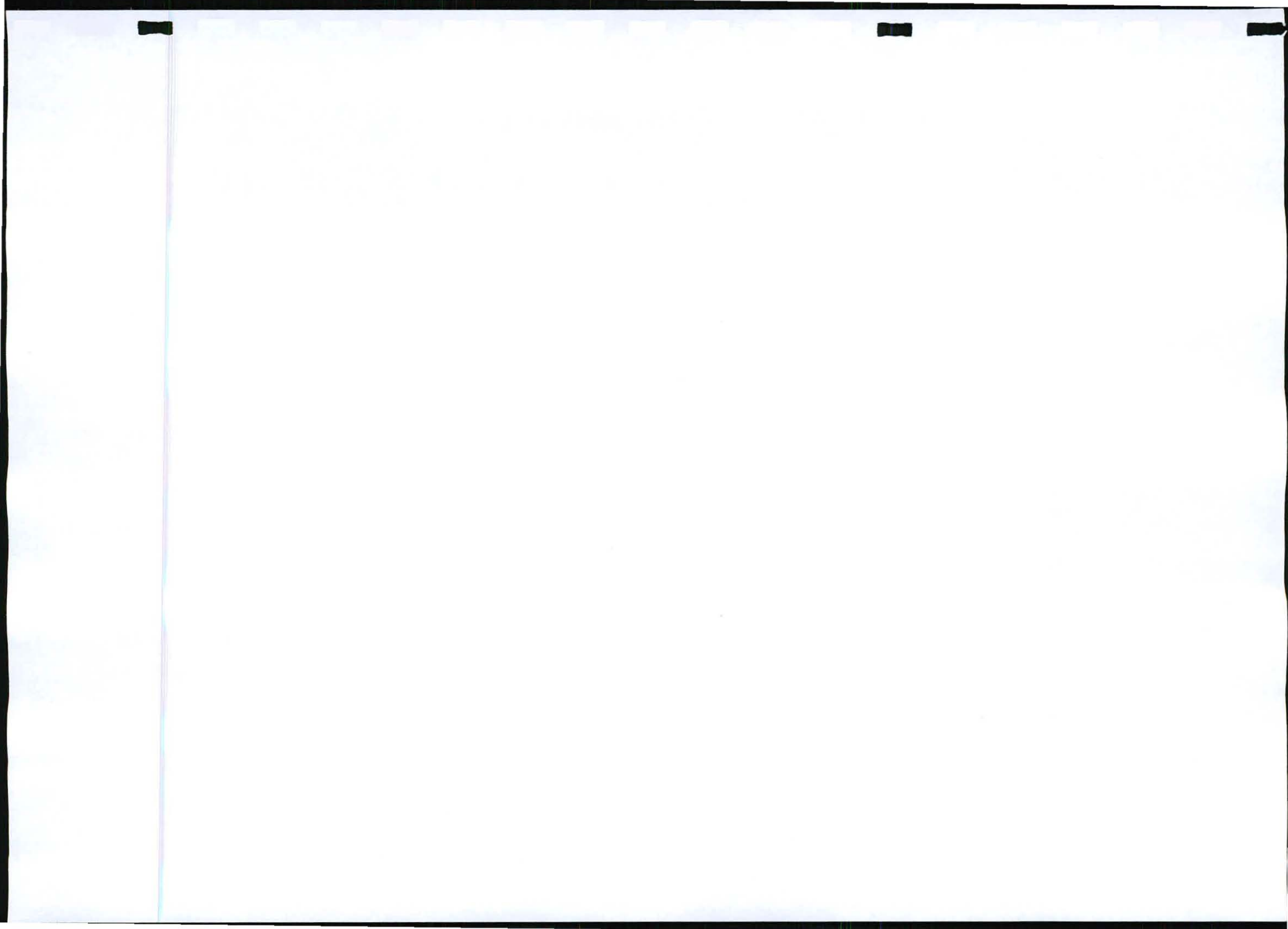
Description of Works

The project will involve the extraction of material from borrow pits identified and investigated. Material at the borrow pits will be extracted by means of mechanical equipment and no blasting will take place on site.

Provision will be made for stormwater control and the containment of dirty runoff within the sites. Topsoil will be stockpiled for use in rehabilitation and the borrow pits will be fenced for the duration of the contract and until DME issues a closure certificate. The mining areas will be sloped and/or benched on closure and revegetated.

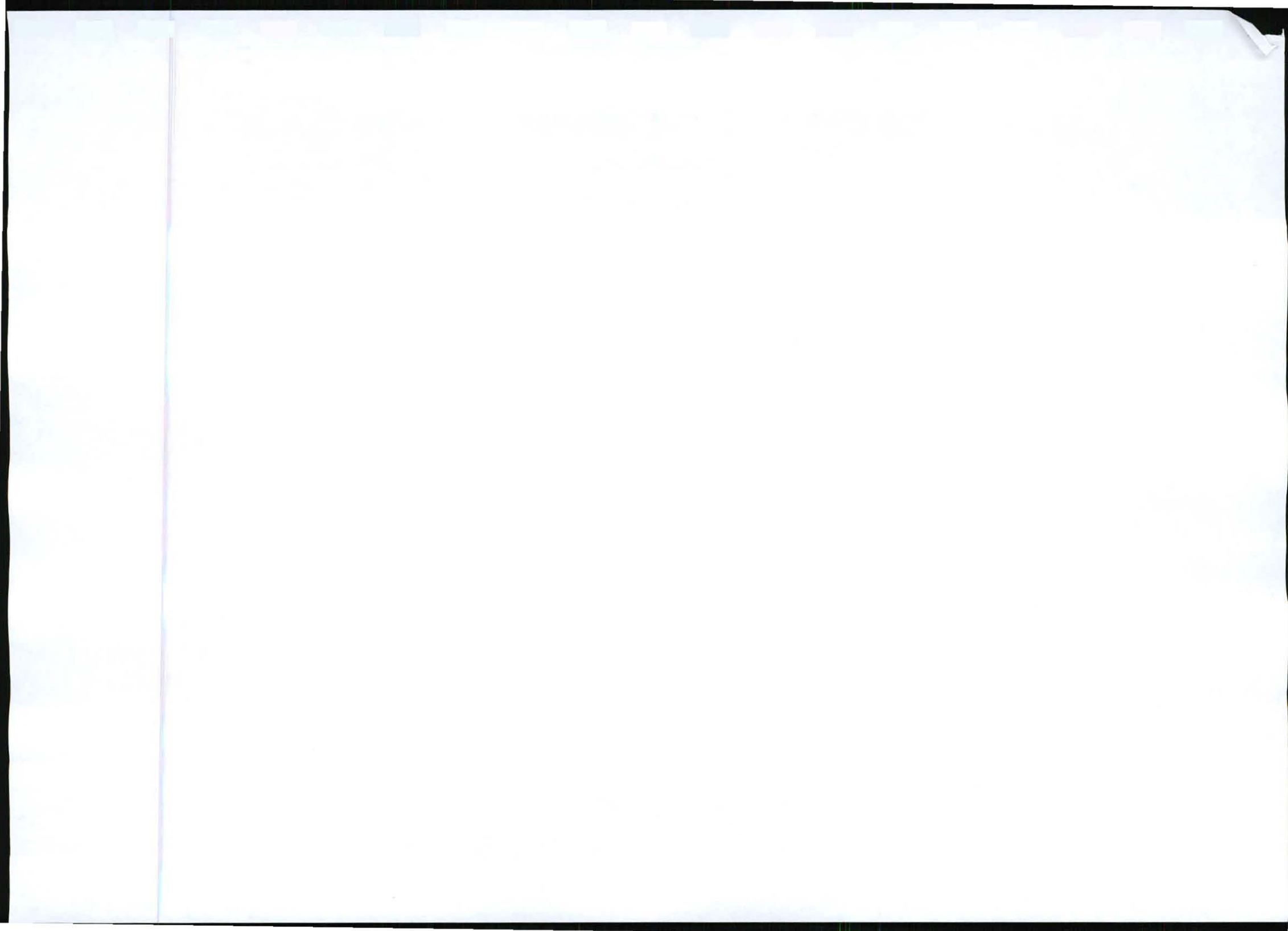
Affected Environment

The study area includes the area between Uitenhage and Witteklip, which is situated on the outskirts of Port Elizabeth. The borrow pit areas ranges from existing borrow pit areas to disturbed areas and areas that will require extensive bush clearing which will have a high impact on the natural vegetation.



Management Programme

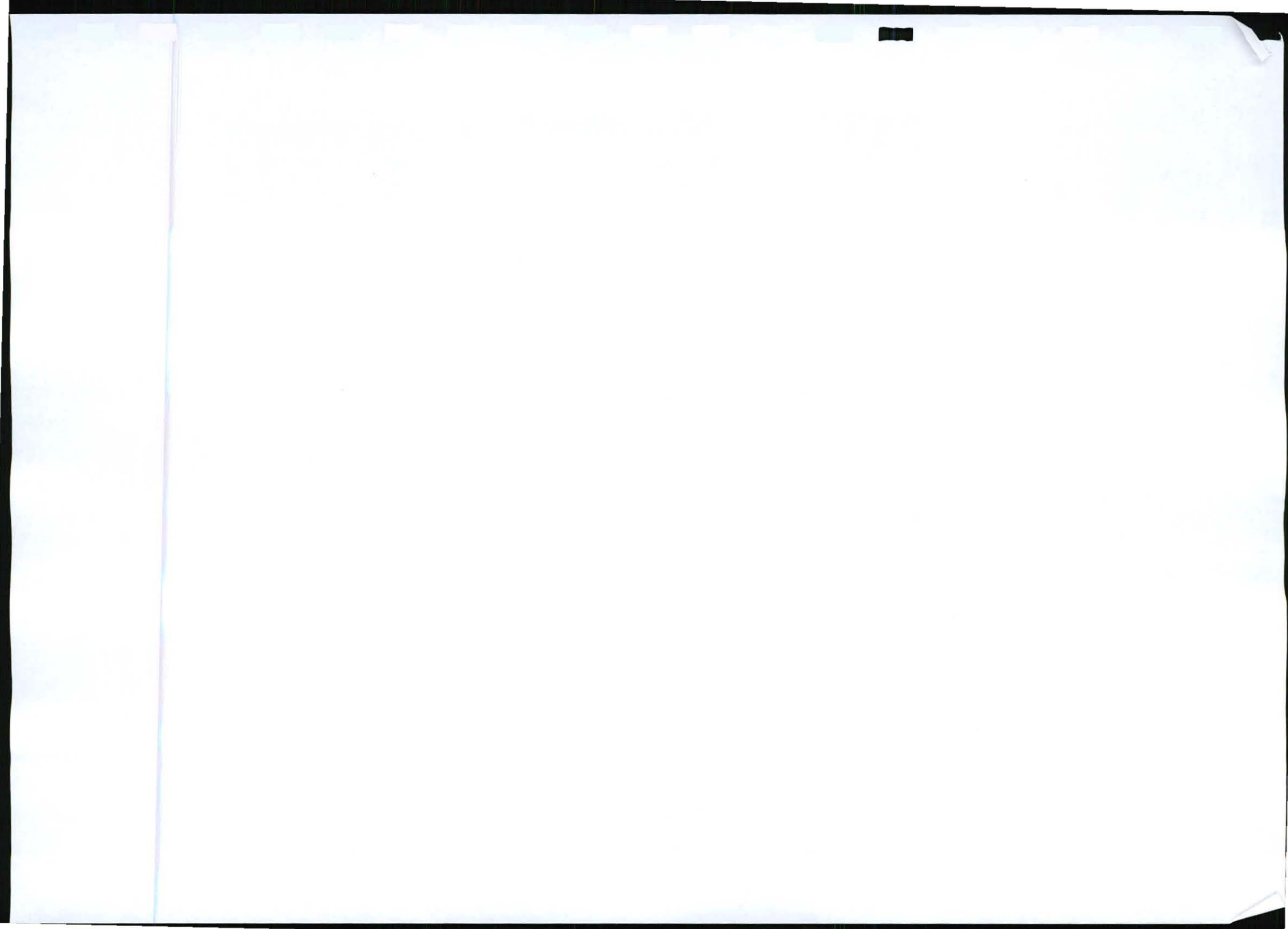
A detailed management plan has been developed for the borrow pits. Provided that these measures are fully implemented, potential impacts will be mitigated to within an acceptable level. Provision has been made in terms of the contract to retain sufficient funds for a period of one year post-construction to ensure that the necessary rehabilitation work is undertaken.



UPGRADE OF MR453 BETWEEN UITENHAGE AND WITTEKLIP EMP

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Figure 5 Location and image of BP 8

Figure 6 Sensitivity analysis of the proposed mining area

TABLES

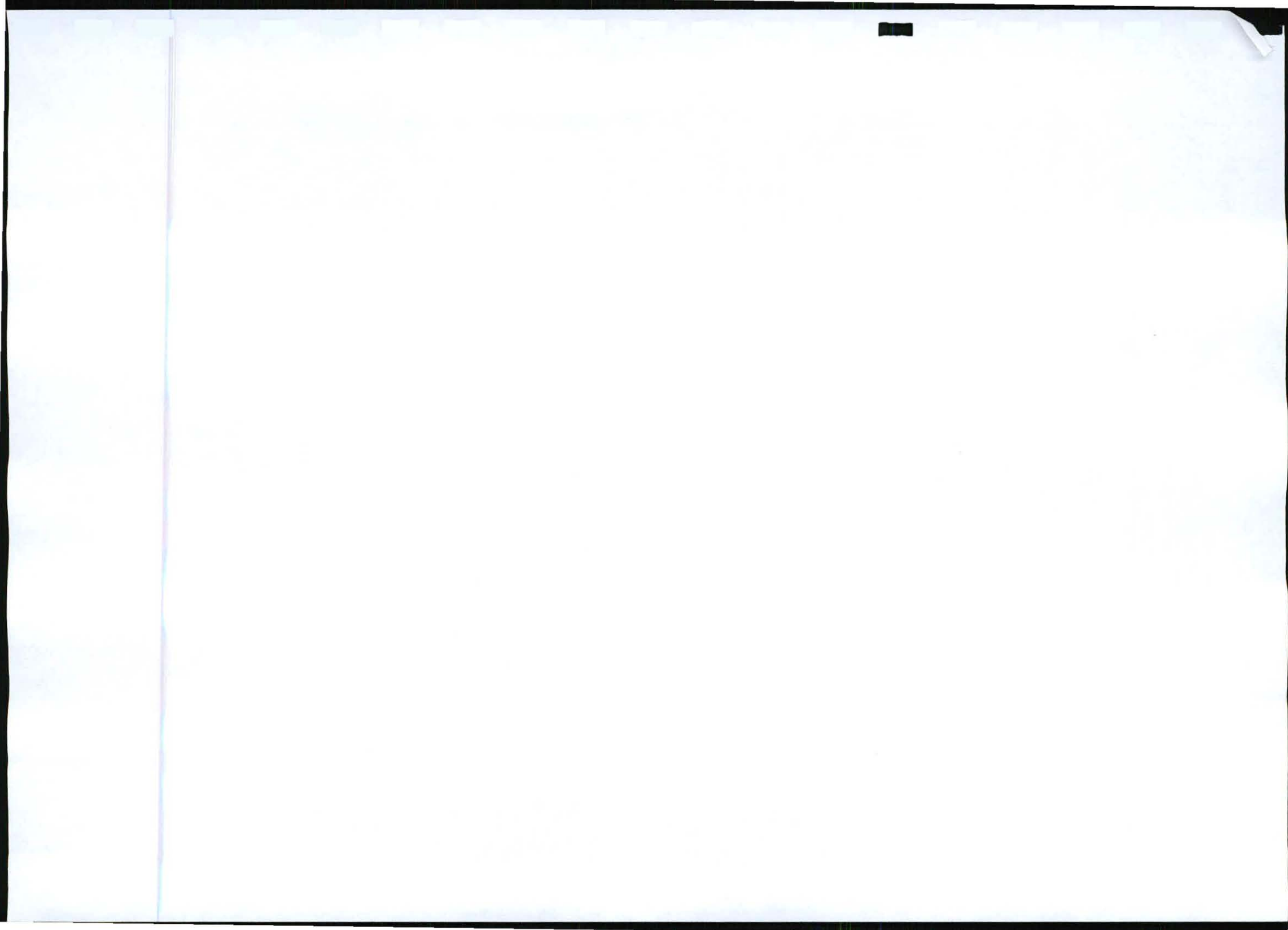
Table 1 Estimated borrow pit reserves

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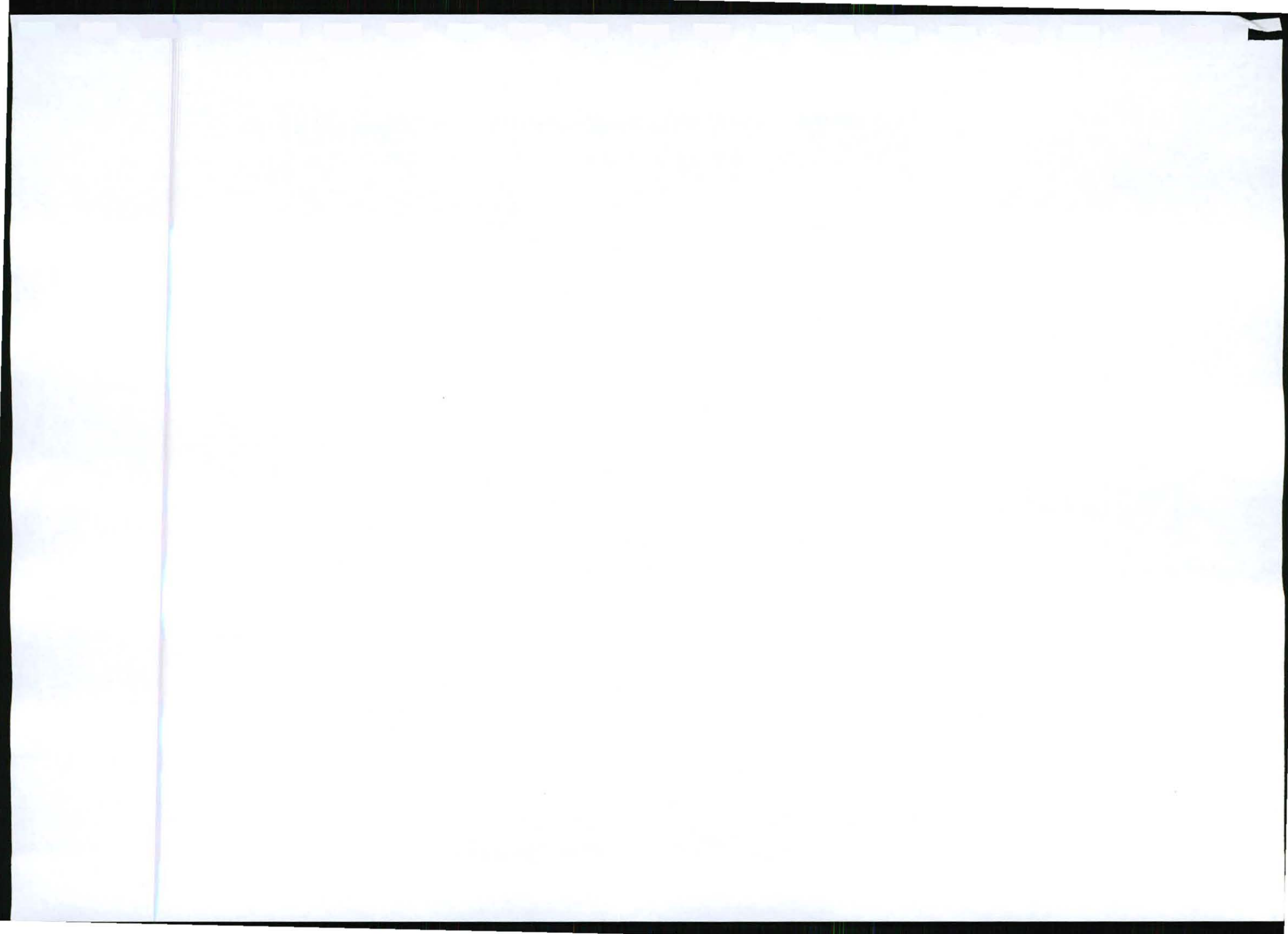


APPENDIX E

Site Photographs

APPENDIX F

Public Meeting Minutes



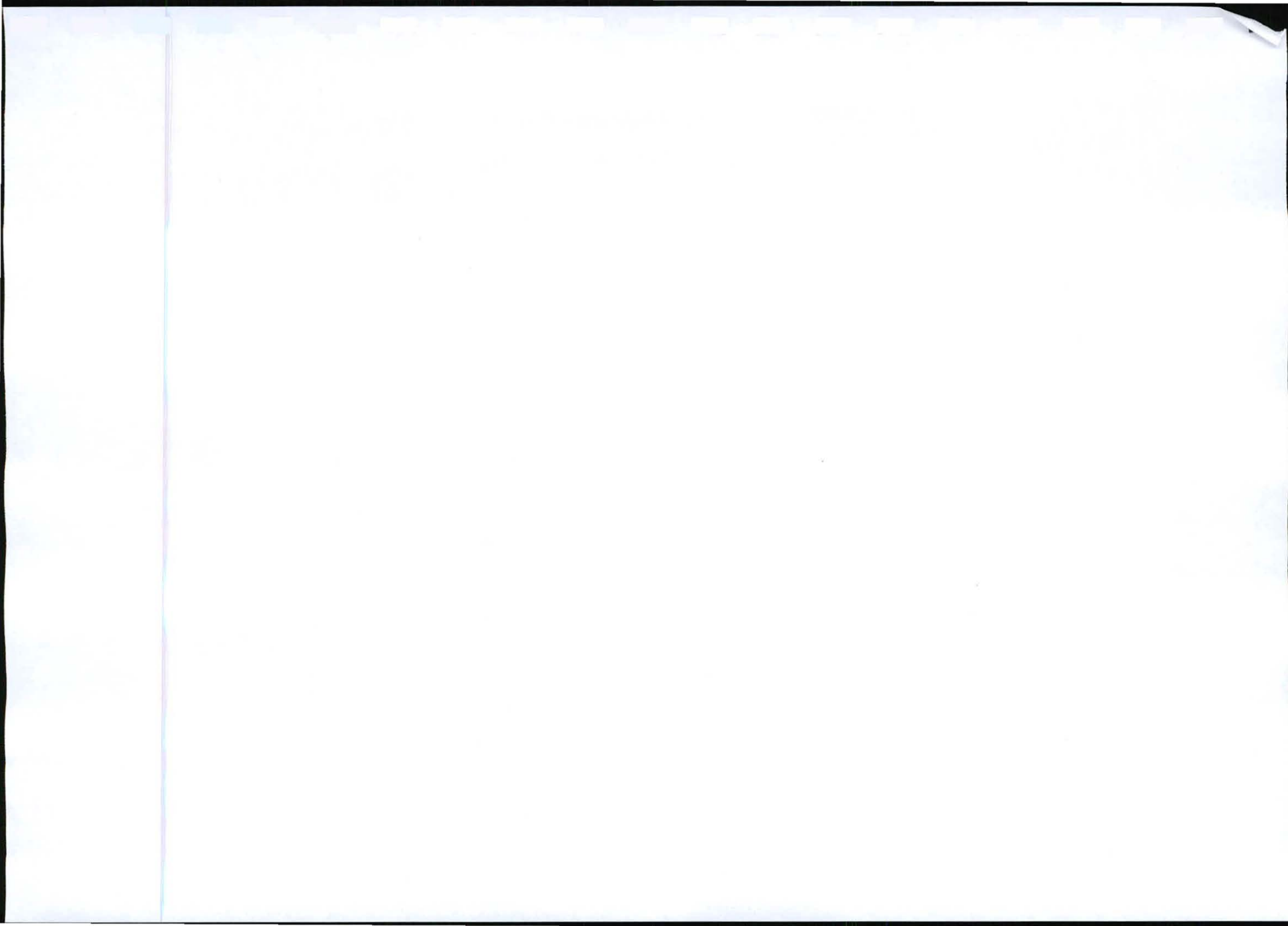
PREAMBLE

Arcus Gibb (Pty) Ltd. was appointed by the DRT to conduct the environmental investigations and produce an Environmental Management Plan (EMP) for the proposed materials sources. The EMP is submitted in support for the permit application required in terms of the Minerals and Petroleum Resources Development Act, Act No 28 of 2002.

The MR453 project commences at the southwestern abutment of the Bridge over the Swartkops River in Uitenhage. It ends at the northern reserve boundary of the Witteklip Interchange on the Cape Town – Port Elizabeth National Route N2. The total length is 24.5 km.

Construction material for the proposed project will be sourced from borrows pits identified in close proximity to and along the route. In order to do this, authorisation from DME is required for the extraction of material.

As per Government Gazette notice number 26501, re: Exemption of Organs of State from certain provisions of the Mineral and Petroleum resources Development Act (MPRDA), 2000: The Minister "exempt Provincial Governments from the provisions of section 16,20,22,27 of the said Act in respect of any activity to remove mineral for he construction and maintenance of dams, harbours, roads, railway lines and for purposes incidental thereto".



1 BRIEF PROJECT DESCRIPTION

1.1 Background

The Eastern Cape Department of Roads and Transport plan to undertake the design and construction monitoring for upgrading of the MR453 between Uitenhage and Witteklip. The MR453 project commences at the southwestern abutment of the Bridge over the Swartkops River in Uitenhage. It ends at the northern reserve boundary of the Witteklip Interchange on the Cape Town – Port Elizabeth National Route N2. The total length is 24.5 km.

Arcus Gibb have been appointed by the Department of Roads and Transport (DRT) to conduct the engineering services for the proposed project. Natural gravel material for the construction of the road, will have to be sourced from borrow pits, which have been identified along the proposed route. A total of five material sources have been identified.

This report will be submitted in support of the permit applications for the 5 borrow pits.

1.2 Locality and general site description

All the borrow pits fall within the Cacadu District municipality of the Eastern Cape and are accessible via existing tracks directly off the MR453.

Of the five borrow pits identified two sites will be divided in two mining areas. Farm Mimosa Dale will be divided in to Borrow pit 1A and 1B and borrow pits 7 and 8 are located on the farm Alkham.

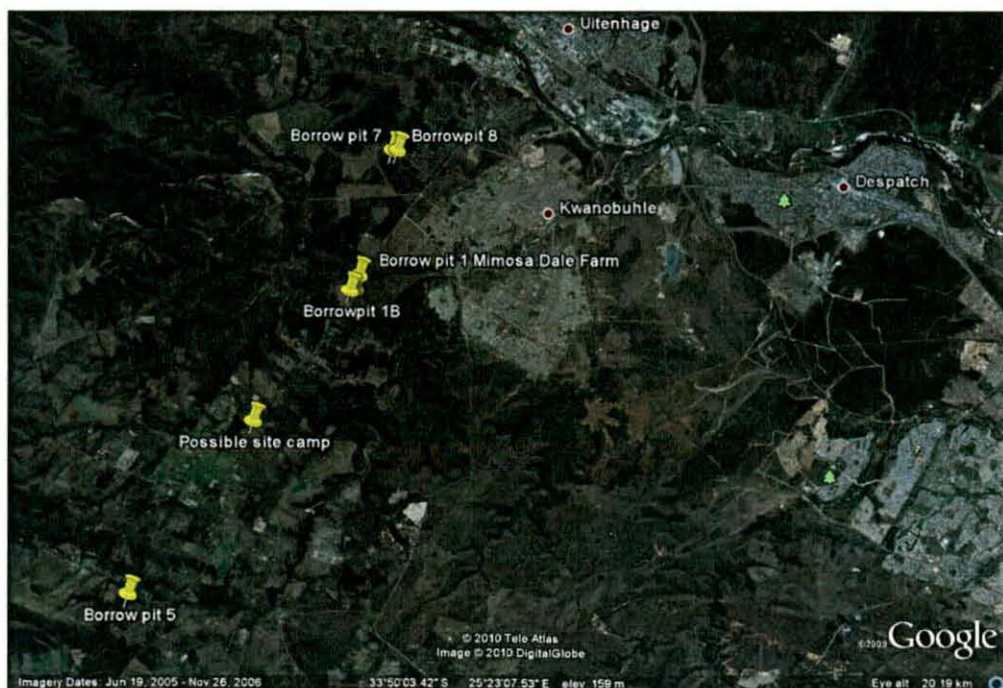
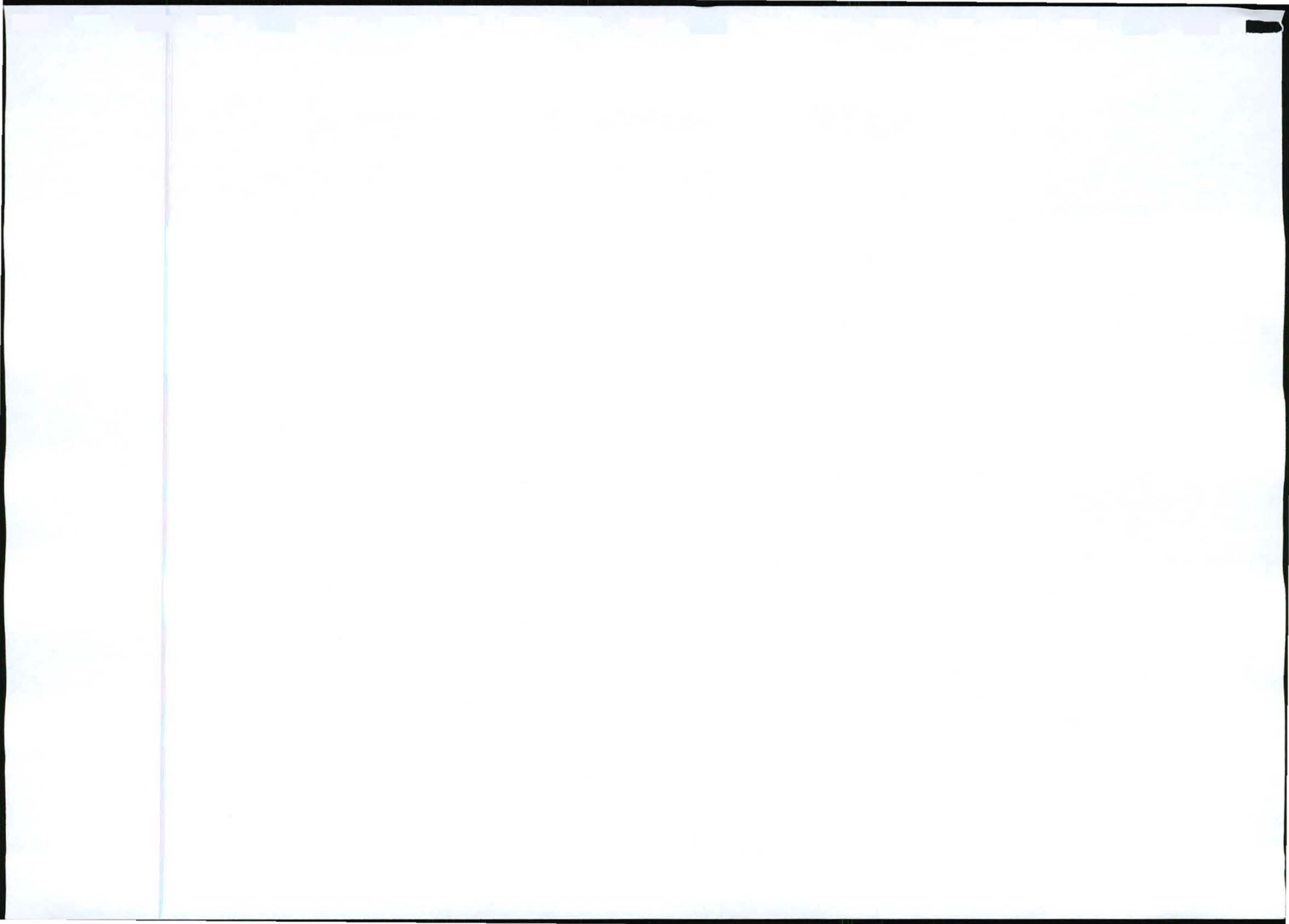


Figure 1 Location of borrow pits in a regional setting



1.2.1 Borrow pit 1A and B

The proposed borrow pits are situated on the remainder of Farm 327, Mimosadale (coordinates BP 1A- S 33°49'27.31" E 25° 20' 42.16' and BP 1B- S33°49'28.76" E 25° 20' 36.92'). At present the site is being used as an unlicensed quarry by the Local Municipality and the area is highly impacted as a result. The impact due to further sourcing of material is expected to be minimal.

There are no major drainage courses, streams or surface water sources in the vicinity of the pits. The topography of the site is generally flat with no steep slopes of concern.

The quality of topsoil is expected to be very poor and topsoil may have to be brought on site from alternative sources. Nutrient enrichment is also likely to be required in order to effectively rehabilitate the site. The area to be mined will constitute 1.5Ha for Borrow Pit 1A and 1B respectively.

Materials to be mined at BP1A and B include: Weathered Shale to be used in selected layers and fill and wearing courses.

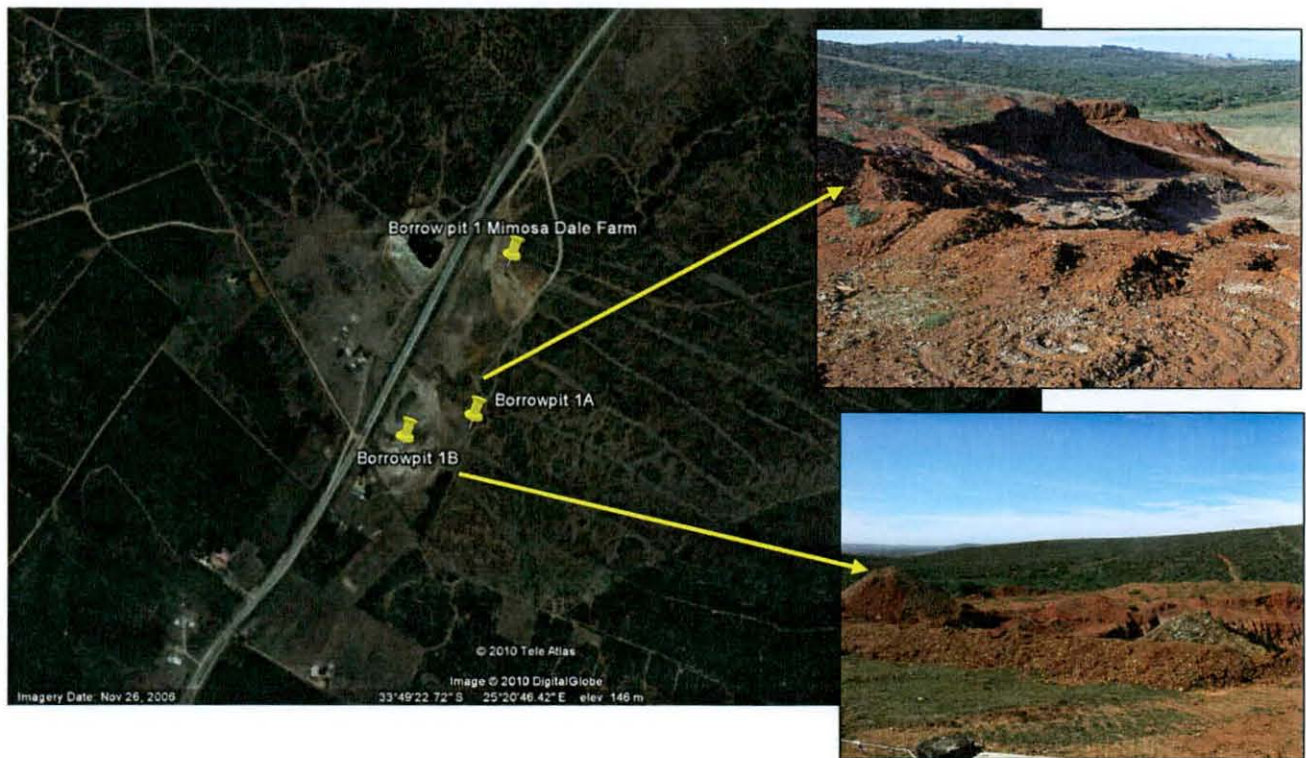
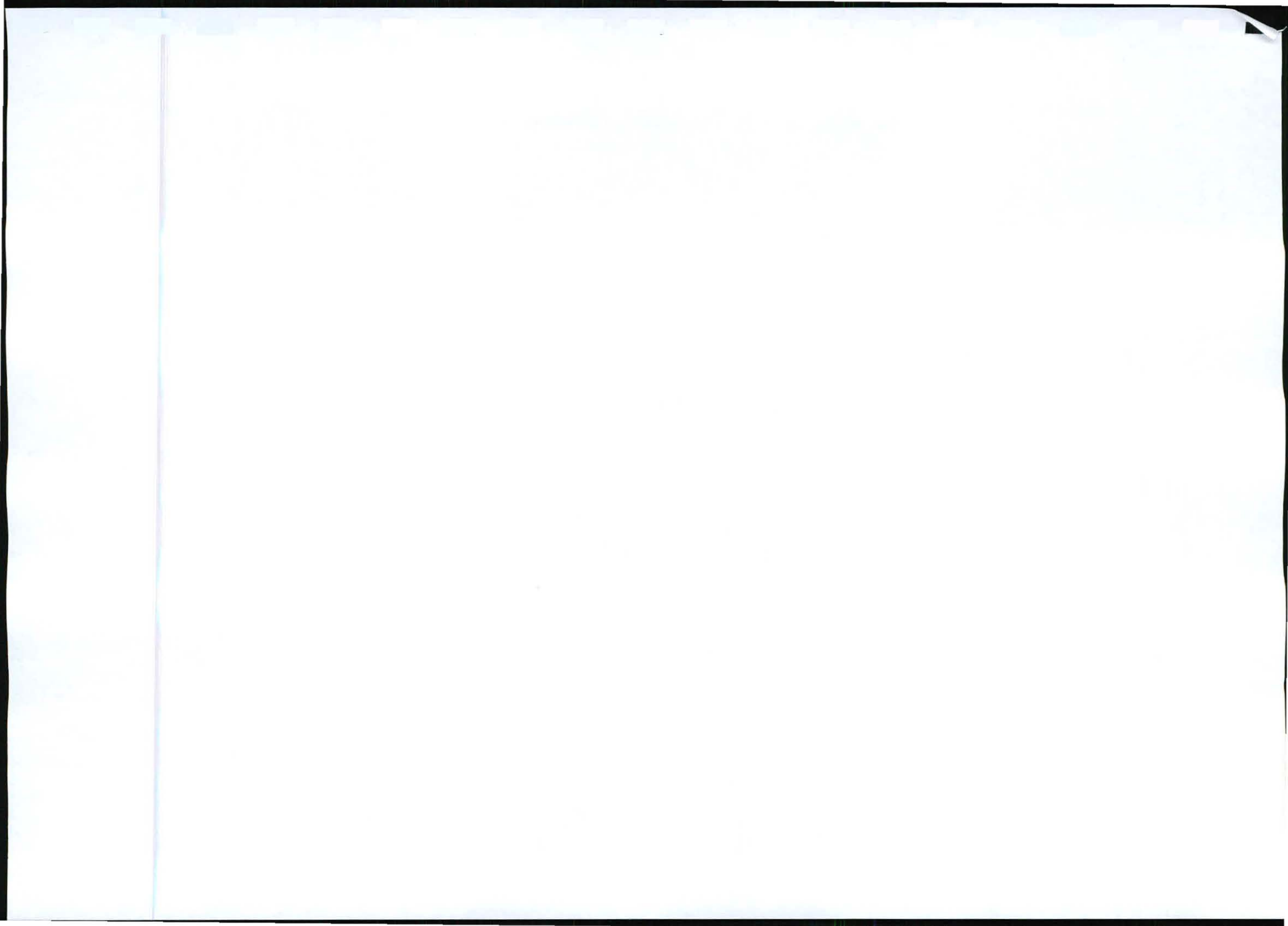


Figure 2 Borrow pits 1A and 1B



1.2.2 Borrow pit 5

The site for the proposed borrow pit 5 is located on Farm 129 portion 419 (co-ordinates S 33°53'15.81" E 25° 17' 21.48). The site was used as quarry in the past and is infested by Bluegum and Black Wattle. The quality of topsoil is expected to be very poor due to an extended period of exposure and topsoil may have to be brought on site from alternative sources. Nutrient enrichment is also likely to be required in order to effectively rehabilitate the site.

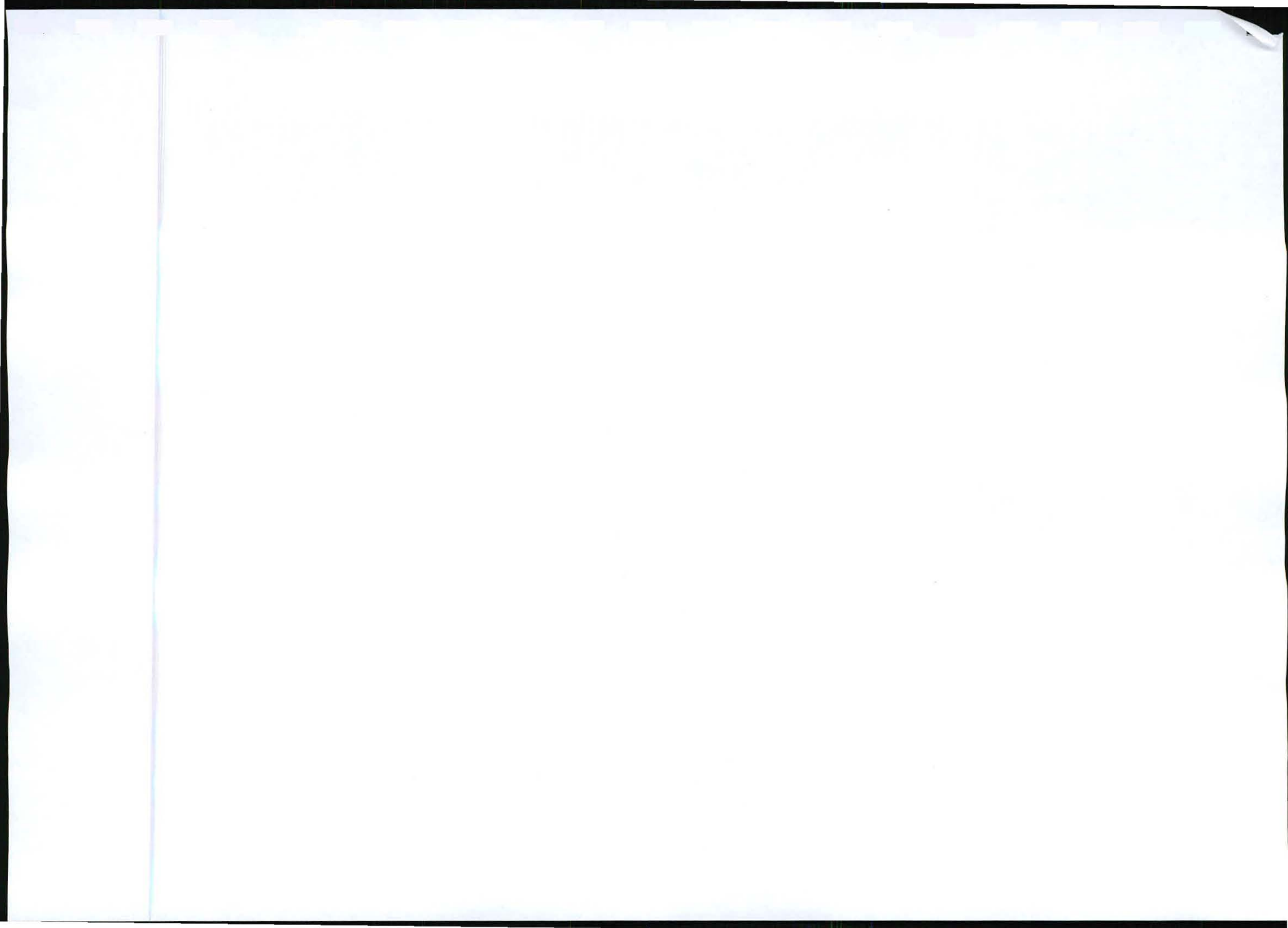
The extent of the proposed borrow pit will be 1.17 Ha. Due to historical use of this site, the impact due to further sourcing of material is expected to be minimal.

There are no major drainage courses, streams or surface water sources in the vicinity of the borrow pit. Erosion is present on site, but this is mainly due to a lack of vegetation. The topography of the site is generally flat with no steep slopes of concern.

Materials to be mined at BP5 include: Quartzitic Sandstone to be used for the subbase.



Figure 3 Location and image of BP 5



1.2.3 Borrow pit 7

The site for the proposed borrow pit 7 is located on Farm 132 portion 5 (co-ordinates S 33°47'40.93" E 25° 21' 20.25'). The site is impacted due to past use as a quarry. There is limited vegetation present and fast growing invasive species are dominant on the site. The extent of the proposed borrow pit will be 1.48 Ha. The quality of topsoil is expected to be relatively poor and topsoil may have to be brought on site from alternative sources.

The topography of the site is fairly sloped and increased volumes and velocity of stormwater is expected below the site. There is a settlement located in a North Easterly direction from the proposed borrow pit and impacts as a result of noise and dust must be considered. Mitigation measures provided in this EMP must be employed to limit all potential negative impacts resulting from the proposed mining.

Materials to be mined at BP7 include: Quartzitic Sandstone to be used in the subbase.

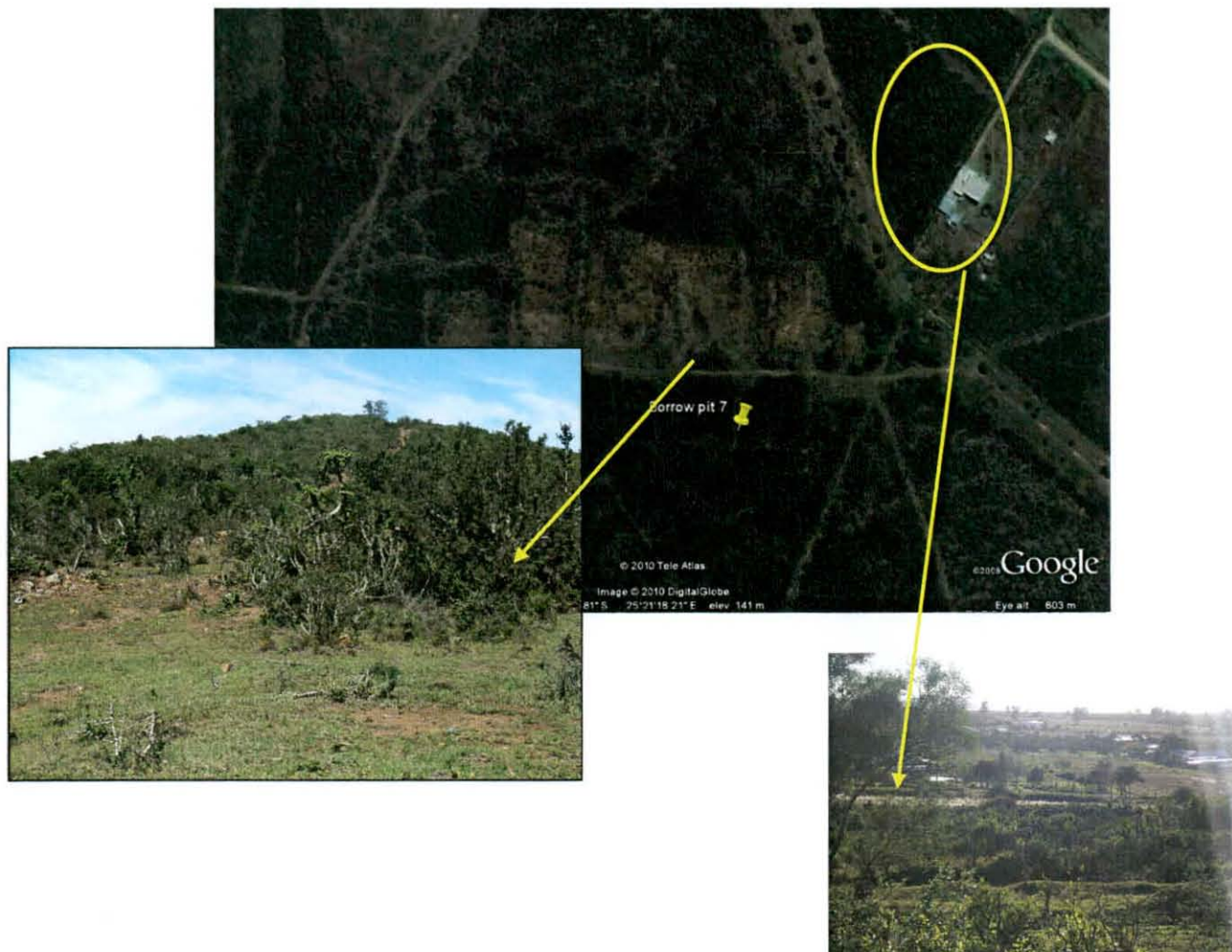
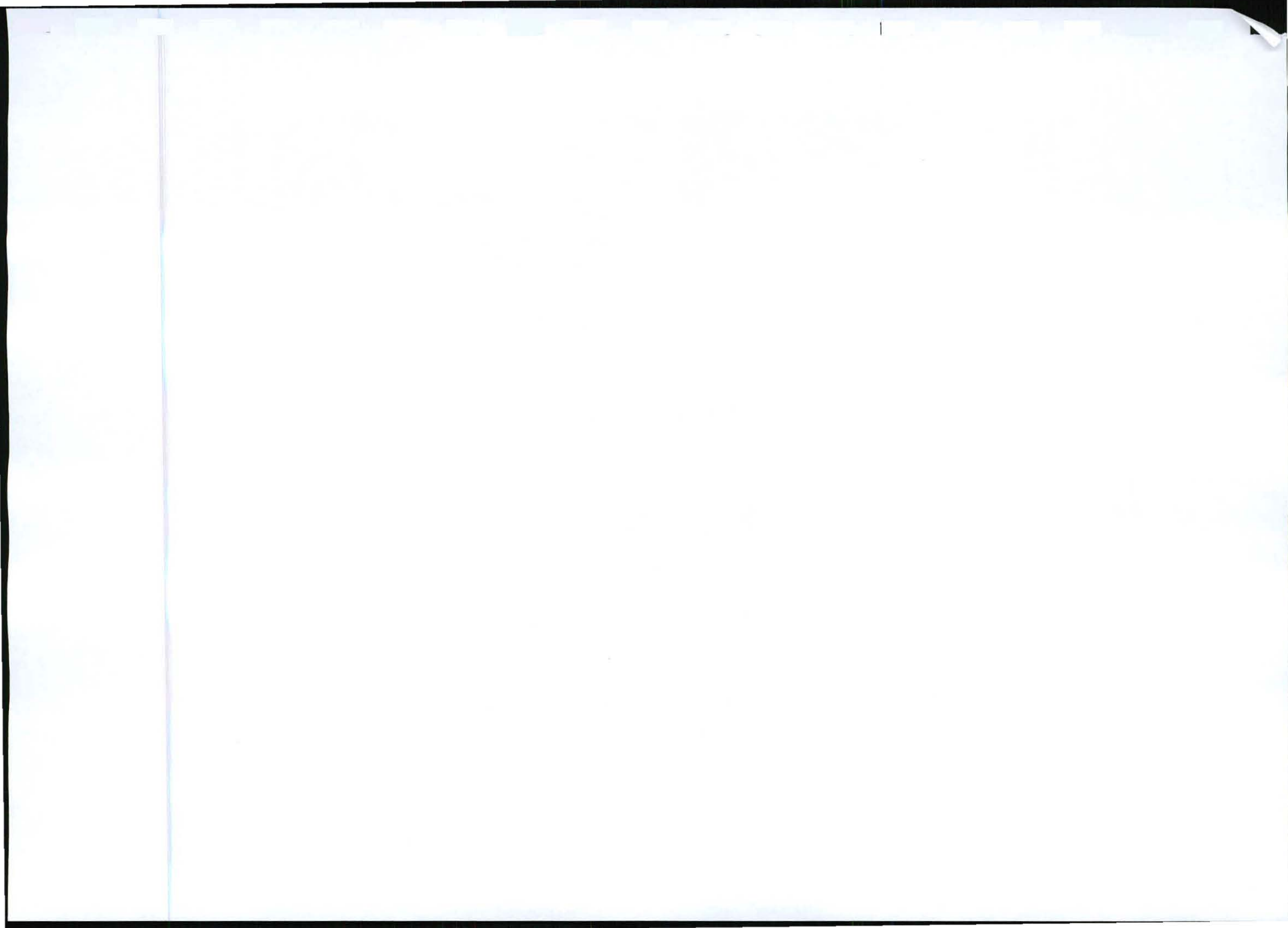


Figure 4 Location and image of Bp 7. The insert image below the locality indicates the residence close to the borrow pit



1.2.4 Borrow pit 8

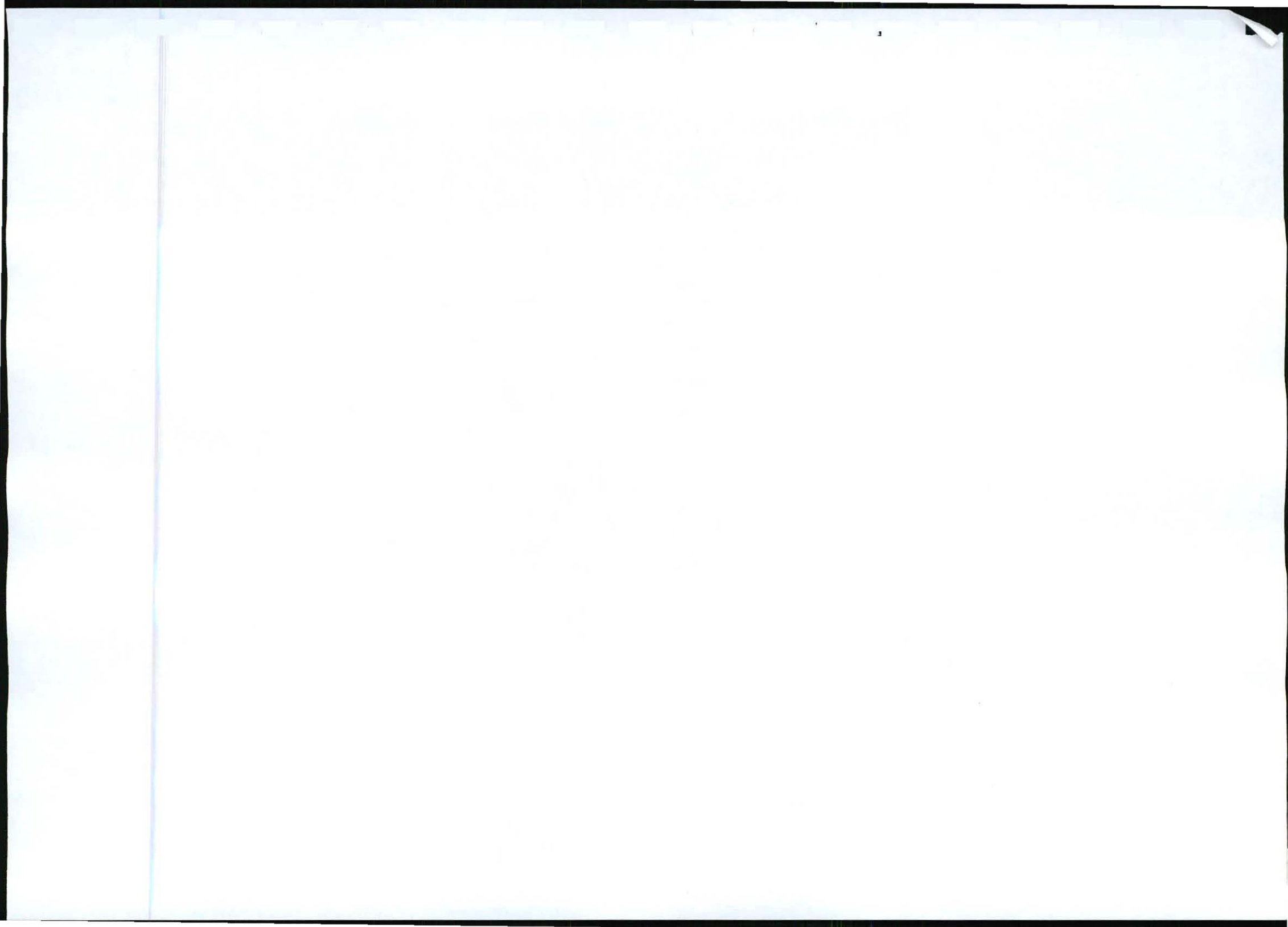
The proposed borrow pit is situated on portion 4 of Farm 191 (co-ordinates S 33°47'41.28" E 25° 21' 15.49'). The site was historically used as a quarry and the area is transformed as a result. There is limited indigenous vegetation on site and the impact on vegetation is expected to be minimal.

The quality of topsoil is expected to be relatively poor and topsoil may have to be brought on site from alternative sources. The topography of the site is fairly sloped and increased volumes and velocity of stormwater is expected below the site. There is a settlement located in a North Easterly direction from the proposed borrow pit and impacts as a result of noise and dust must be considered. Mitigation measures provided in this EMP must be employed to limit all potential negative impacts resulting from the proposed mining.

The area to be mined will constitute 1.5Ha. Materials to be mined at BP7 include: Quartzitic Sandstone to be used in the subbase.



Figure 5 Location and image of BP 8



1.3 Proposed overview

The quantities of material that will be excavated at each borrow pit is indicated in Table 1.3. The mining area at each borrow pit will not exceed 1.5 hectare in extent.

The overburden material will be moved to the side of the mining area and stockpiled until mining activities are complete and will be used as backfill and for sloping the area.

Excavation of material will then commence by means of bulldozer and excavators. Oversize material will be put through the mobile crusher that will be on site and material will be crushed to the desired size.

1.3.1 Estimated reserves

Table 1 Estimated borrow pit reserves

Borrow pit/borrow pit number	Reserves (m³)	Area (ha)
1A	68324.32	1.5
1B	38869.36	1.5
5	14177.73	1.17
7	39666.53	1.48
8	58923.44	1.5

1.3.2 Site establishment phase

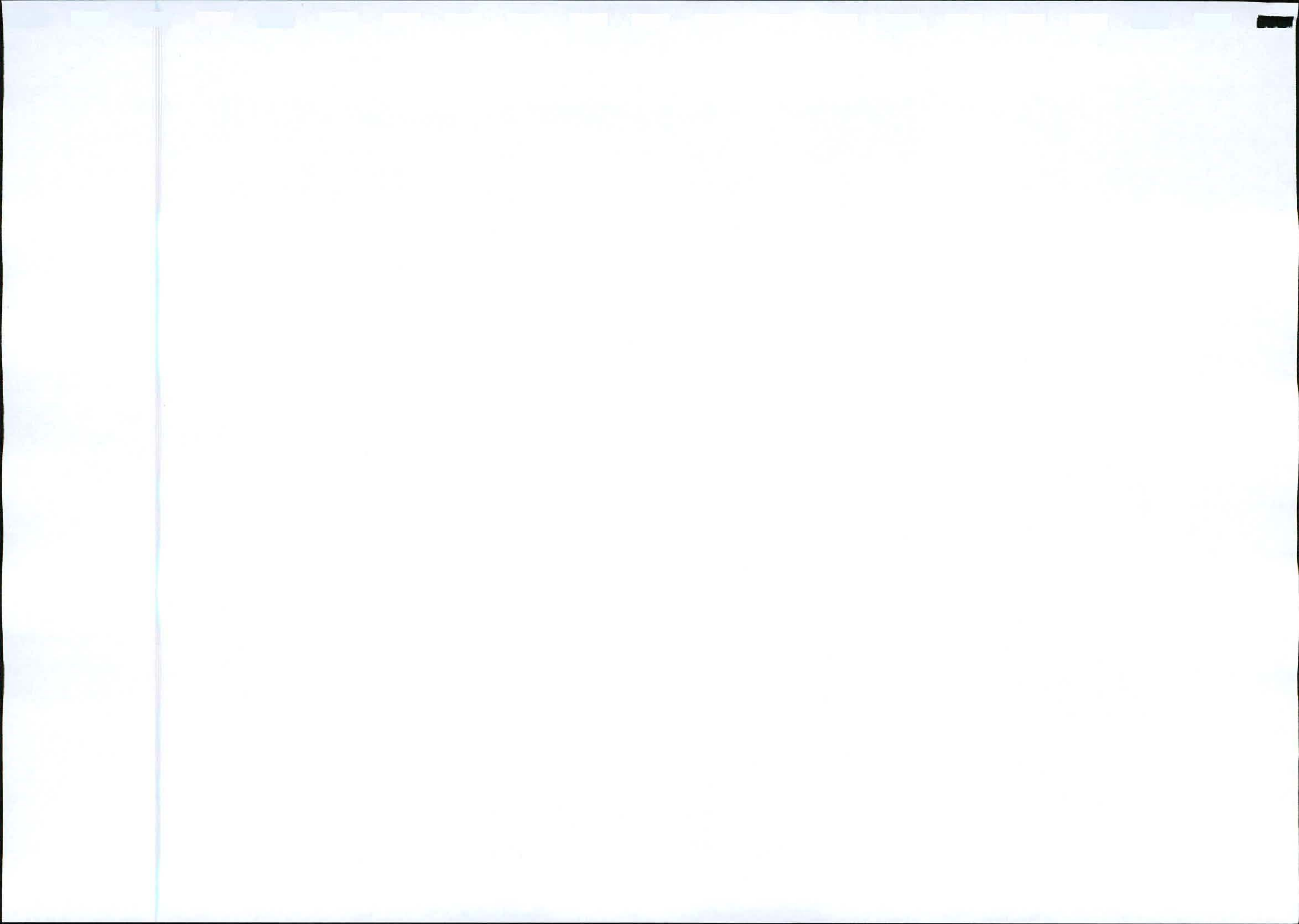
Before mining activities can commence on site, it will require the establishment of infrastructure such as a temporary site office and preparing the site by means of removing topsoil and vegetation present and stockpiling it on site. Establishing of the infrastructure should be done in accordance with the specifications set out in this document.

A haul road from the existing gravel access road into the site will need to be constructed before mining activities take commence. This new haul road will be used for transporting material on and off-site during operation. After site clearance has taken place the temporary office block and ablution facilities will be put up on site.

The entire active mining area, stockpile areas, haul roads, processing plant and offices will be fenced. A standard stock fence will be erected around the mining area.

Topsoil will be cleared by means of a bulldozer and stockpiled in specified areas. Topsoil stockpiles will be no more than 1.5m in height and will be protected from water and wind erosion. Topsoil stockpiles will be positioned from the overburden stockpiles. Topsoil will be cleared by means of a bulldozer and stockpiled in the specified areas. Topsoil stockpiles will be positioned from the overburden stockpiles.

Stormwater control measures will be put in place. These will consist of diversion berms above the quarry to divert clean water run-off away from the site. The existing overburden on site will be pushed to sides and serve as cut-off berms.



Areas where the mobile crusher and ablution facilities will be established should be demarcated on site. Also on site will be a demarcated area for fuel storage for vehicles onsite, a designated area where emergency repairs may take place according to the specifications set out in this document.

After the mining has taken place and the mining area has been rehabilitated, the haul road will be rehabilitated.

1.3.3 Operation Phase

After the site has been prepared and topsoil have been removed and stockpiled, operations will commence.

The total area to be mined varies from 1.1 hectare to 1.5Ha in extent and will not be mined in phases. A mobile crusher will be present on site to crush oversize mined material to the required size.

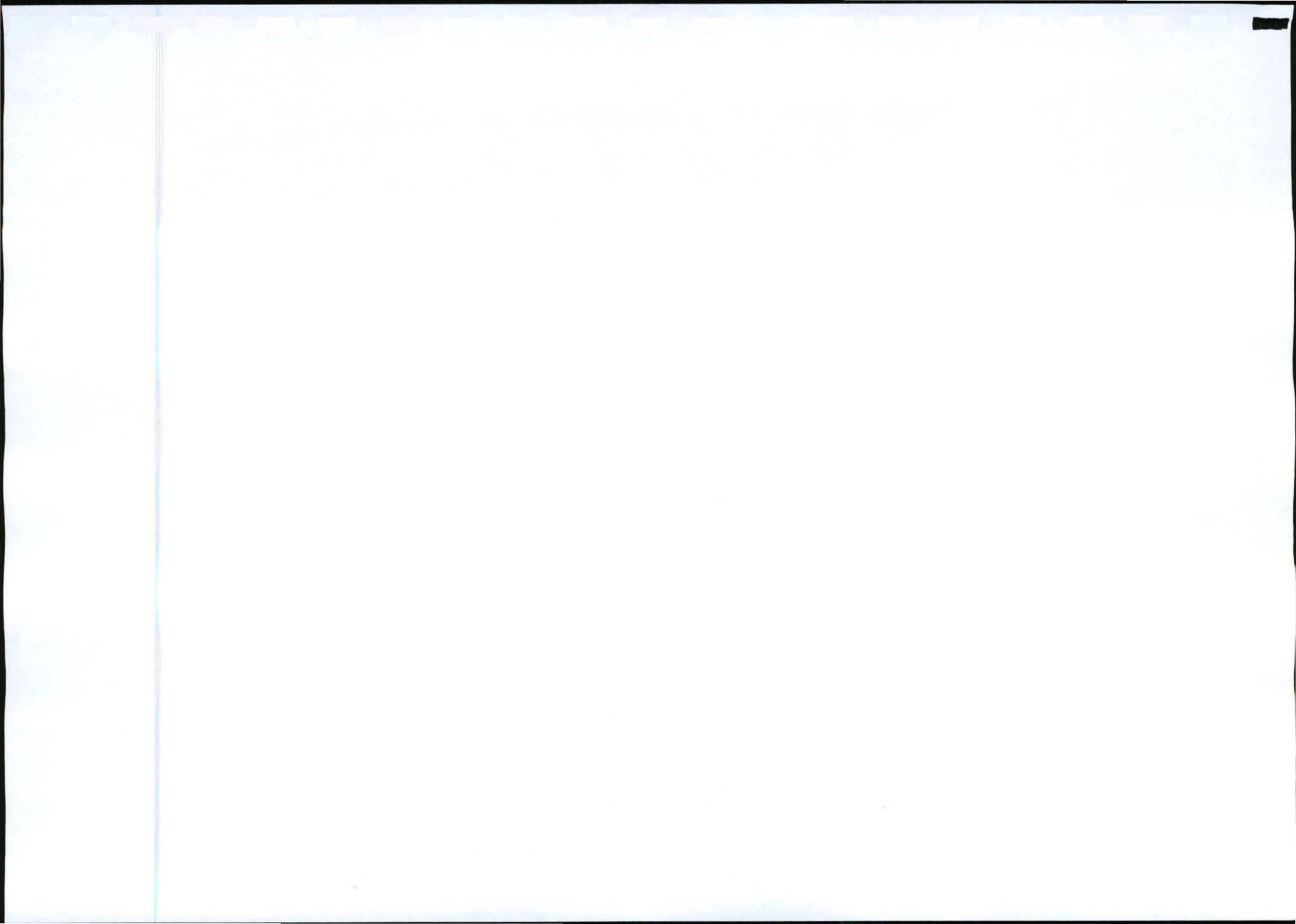
The material required for the road formation as well as the layerworks will be imported from borrow pits and geometric improvements along the route.

1.3.4 Decommissioning/ rehabilitation phase

After mining has taken place and the area has been sloped to a 1:3 gradient, the stockpiled topsoil will be returned to the disturbed area and reinstated as indicated on the mining plan. The contractor will be responsible for removing all structures, temporary or permanent, off site and rehabilitate those areas as well. All contaminated areas should be rehabilitated to a state as near natural as possible.

1.3.5 Proposed mining method

All borrow pits will be mined mechanically. Mechanical excavators will be brought on site and material will be loaded on haul vehicles and transported to the proposed point of use.



2 LEGAL FRAMEWORK

This section provides a brief overview of the relevant legislation, which will govern the establishment, and mining of the hard rock quarry.

2.1 Constitution of South Africa

The Constitution of South Africa provides for an Environmental Right (contained in the Bill of Rights, Chapter 2). In terms of Section 7, the State is obliged to respect, promote and fulfil the rights in the Bill of Rights.

2.2 Compliance with DME Regulations

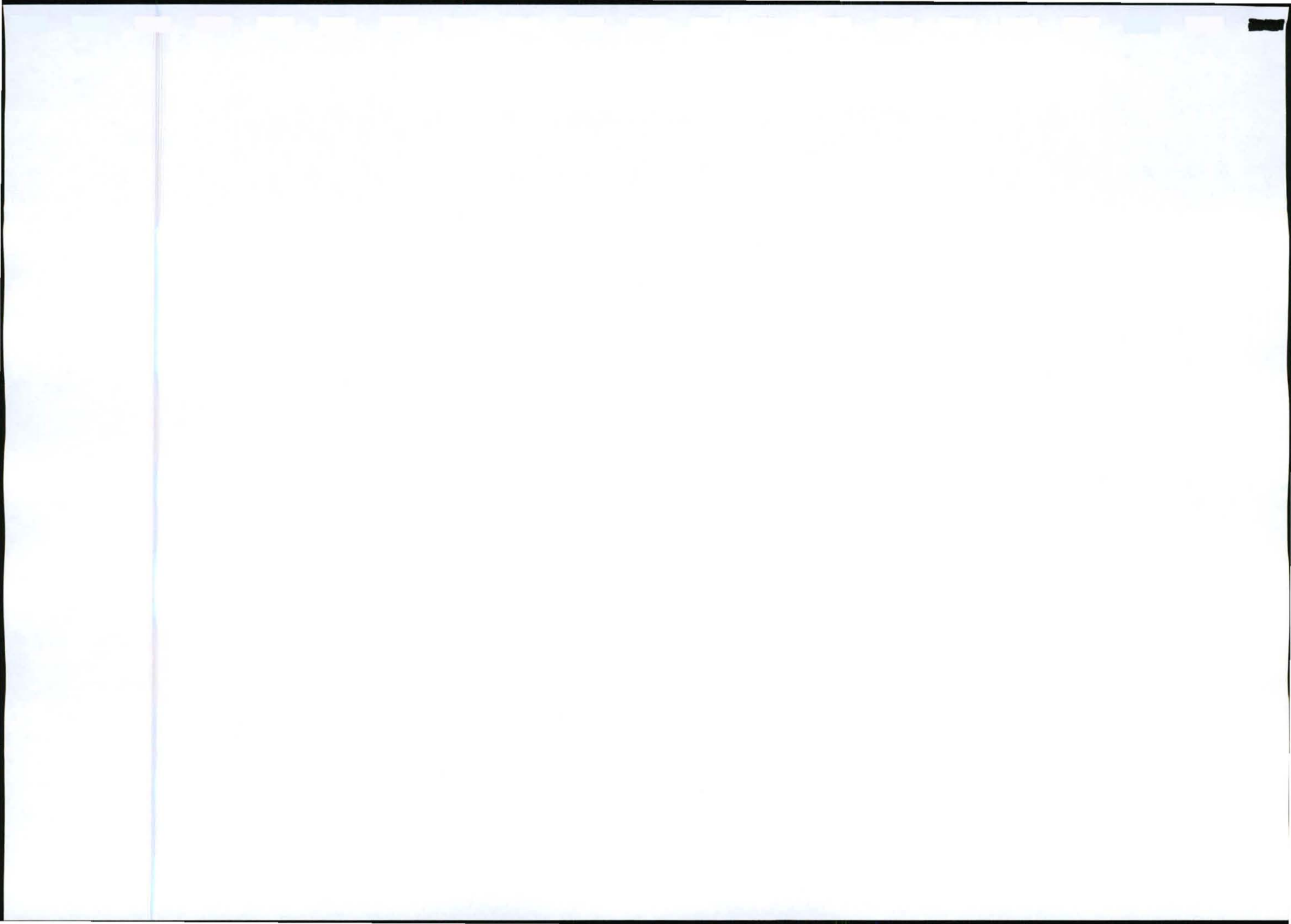
The Environmental Impact Assessment (EIA) and the Environmental management Programme (EMP) have been compiled in accordance with Regulations 50 and 51 of the Minerals and Petroleum Resources Development Regulations (Government Notice No. R527) published under Section 107(1) of the Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

Regulation 50 outlines the contents of the Environmental Impacts Assessment Report as follows:

- An Assessment of the Environment likely to be affected by the proposed mining operation, including cumulative impacts.
- An assessment of the environment likely to be affected by the identified alternative land use or developments, including cumulative environmental impacts;
- an assessment of the nature, extent, duration, probability and the significance of the identified potential environmental, social and cultural impacts;
- determine the appropriate mitigatory measures for each significant impact of the proposed mining operation;
- details of the engagement process of interested and affected persons followed during the course of the assessment and an indication of how the issues raised by the interested and affected persons have been addressed;
- identify knowledge gaps and report on the adequacy of predictive methods, underlying assumptions and uncertainties encountered in compiling the required information;
- description of the arrangements for monitoring and management of environmental impacts; and
- inclusion of technical and supportive information as appendices, if any.

Regulation 52 provides details of what should be included in the Environmental Management Plan for the application for a mining permit. It must contain:

- (a) a description of the environment likely to be affected by the proposed prospecting or mining operations;



- (b) an assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio-economic conditions and cultural heritage if any;
- (c) a summary of the assessment of the significance of the potential impacts, and the proposed mitigation and management measures to minimise adverse impacts and benefits.
- (d) financial provision which must include-
 - (i) the determination of the quantum of the financial provision contemplated in regulation 54; and
 - (ii) details of the method providing for the financial provision contemplated in regulated 53;
- (e) planned monitoring and performance assessment of the environmental management plan;
- (f) closure and environmental objectives;
- (g) a record of the public participation undertaken and the result thereof; and
- (h) an undertaking by the applicant regarding the execution of the environmental management plan.

2.3 DEAT Guidelines

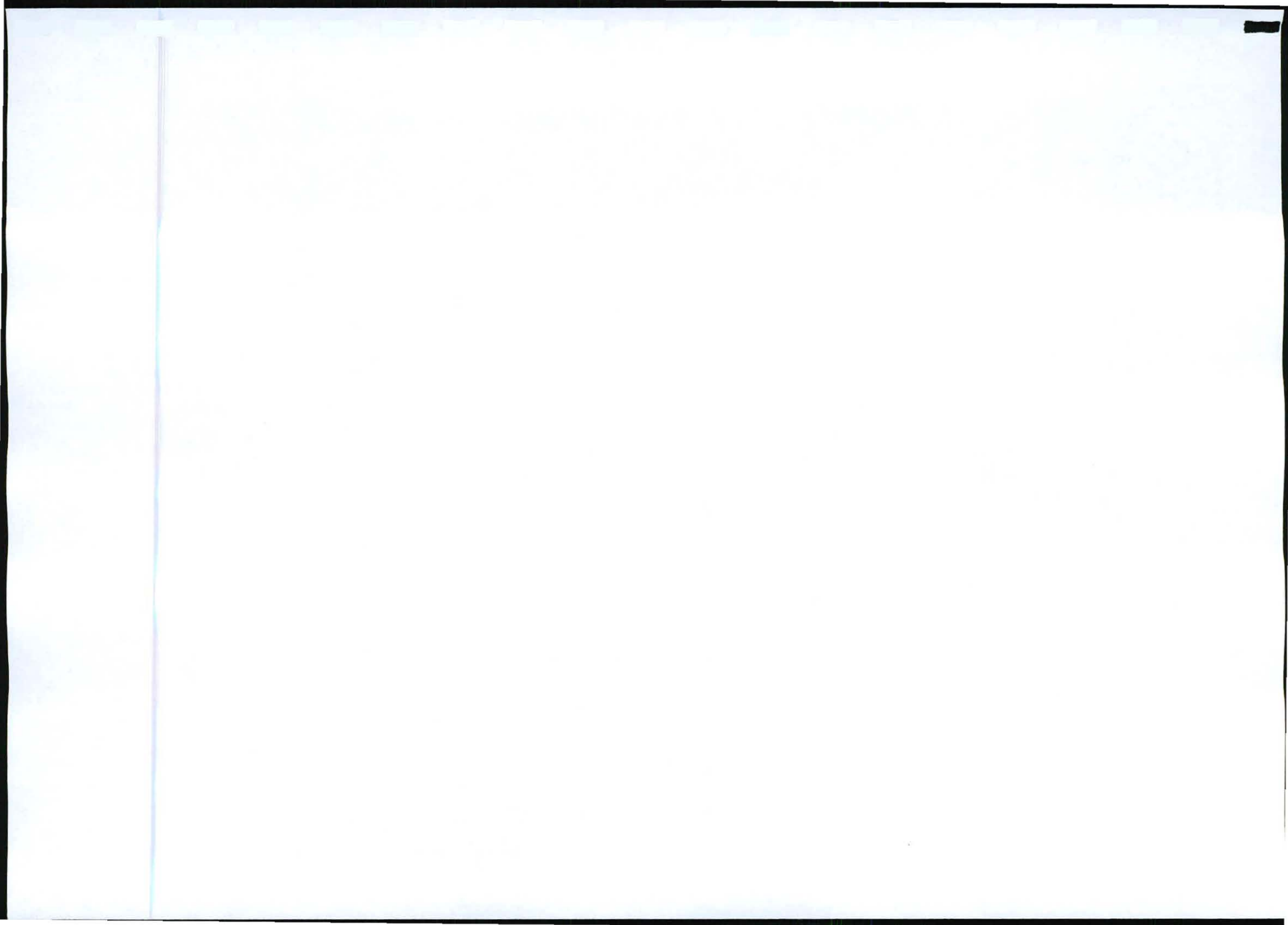
The Environmental Impact Assessment, contained in Section 7 has been conducted in accordance with the Department of Environmental Affairs and Tourism (DEAT) guideline document for the assessment of alternatives and impacts.

2.4 NEMA Principles

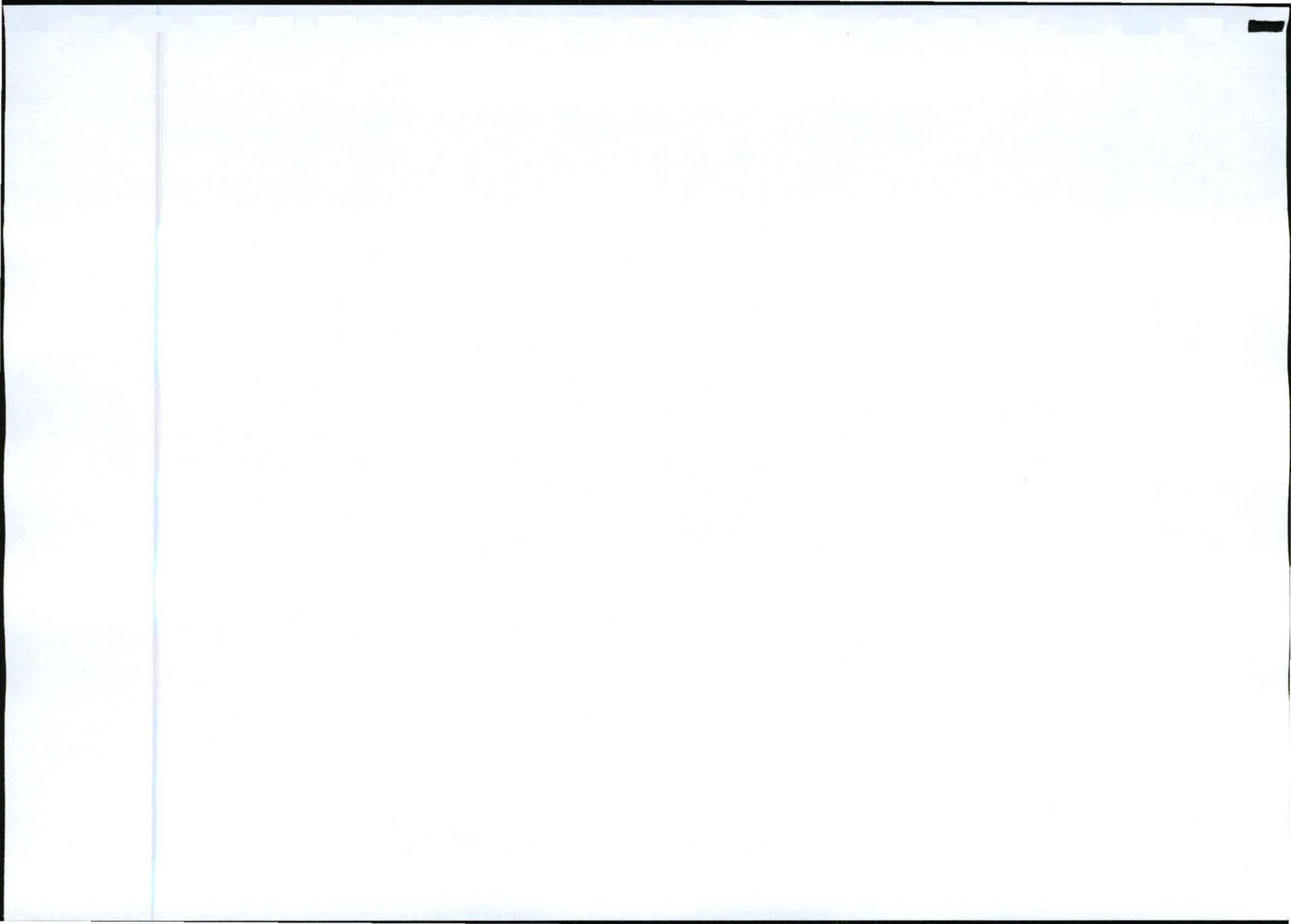
The National Environmental Management Principles as set out in Section 2 of the National Environmental Management Act, 1998 (Act No 107 of 1998) have been considered when undertaking the evaluation of the mining operation and in determining the relevant mitigation action.

2.5 Summary of all relevant legislation

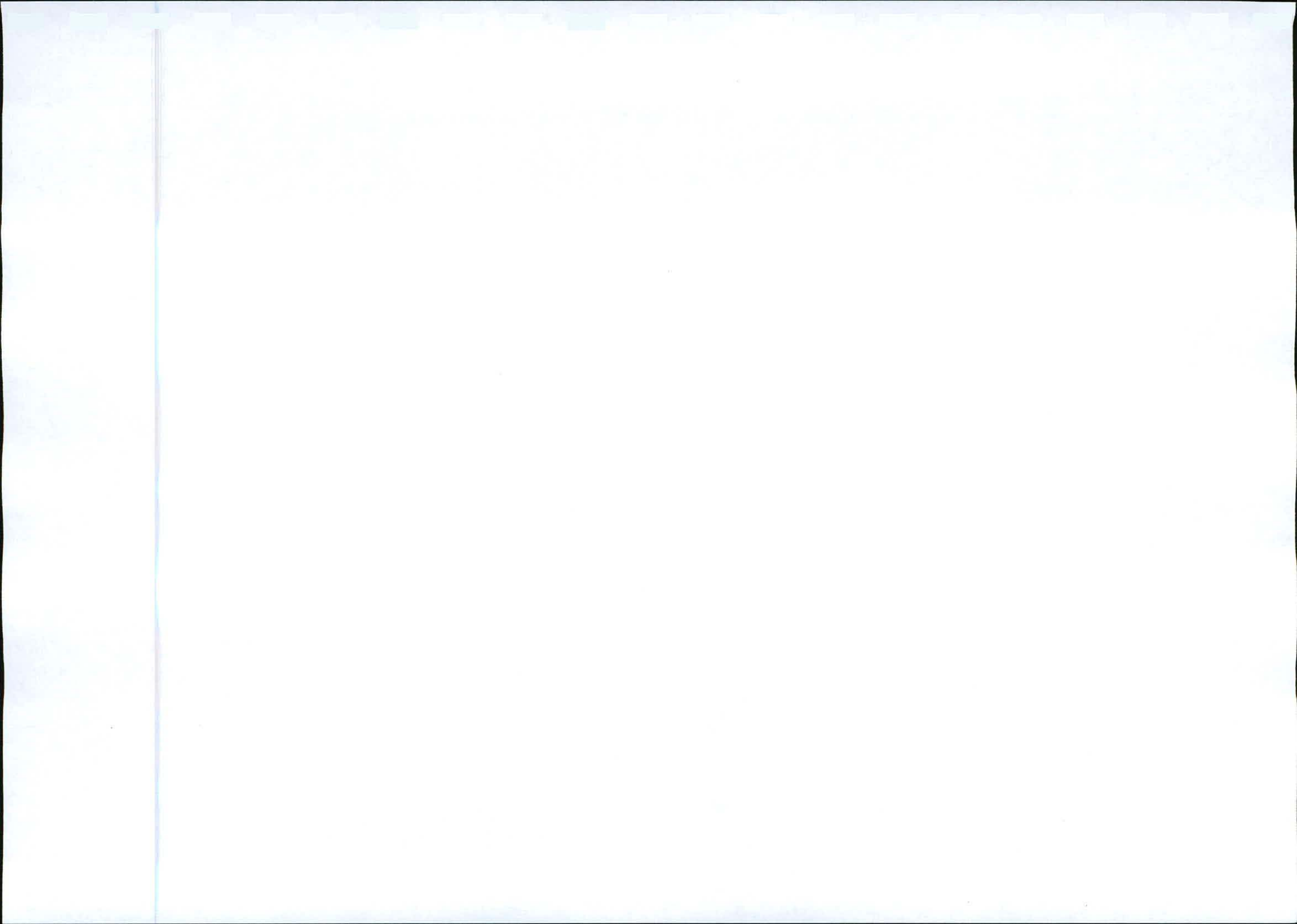
Act	Summary	Relevance to activity
Constitution (Act 108 Of 1996)	Everyone has the right to a un-harmful environment which must protect for the benefit of future generations. This is achieved through measures such as; preventing pollution and degradation, promoting conservation, promoting sustainable activity and	Ensure conservation principals are promoted, that the proposed activity is sustainable and will not result in pollution/ ecological degradation/ infringement on people's rights.



	sustainable use of natural resources	
National Environment Management Act (No 107 of 1998)	NEMA creates the legal framework for integrated environmental management in South Africa. The core principal relates to promoting sustainable activities. The duty of care concept extends to prevent, control and rehabilitate pollution and degradation. Failure to perform these duties may lead to criminal prosecution. NEMA also introduces the EIA Regulations (2006)	The proposed activity should be in accordance with the NEMA principals, where this is not possible, reasons for deviation must be strongly motivated
National Water Act (No. 36 of 1998) and pollution prevention	The purpose of this Act is to ensure that the nation's water resources are protected, managed and controlled in an environmentally sustainable way. Also relevant to the proposed activity is Section 19 of the Act which deals with Pollution prevention	Any water use must be investigated, specified, registered and licensed. Proponents are responsible for taking measures to prevent pollution of water resources, undertaking necessary clean up procedures and controlling waste
National Forests Act (No 84 of 1998)	In terms of the act no one without a license can damage a protected tree or any forest product derived from a protected tree	Any activity mentioned in the Act would require a licence
Cape Nature and Environmental Conservation Ordinance (No. 19 of 1974)	A permit is needed to remove or destroy any plants listed in the Ordinance	Contact DEDEA to obtain a permit
Conservation of Agricultural Resources Act (Act 43 of 1983) (CARA) & CARA Regulations (1984)	CARA aims to conserve the natural agricultural resources by combating and preventing erosion, weeds and invader plants. No land user must affect the natural flow pattern of run-off water	The proponent will be responsible for weed and invader control and storm water control must also be implemented
National Heritage Resources Act (No 25 of 1999)	The protection of archaeological and palaeontological sites and material is the responsibility of a provincial heritage resources authority and all archaeological objects, These are the property of the state.	Any artefacts uncovered during the mining phase must be reported to SAHRA
Minerals and Petroleum Resources	The proposed mining requires a mining permit in terms of thresholds provided in the Act	All recommendations and instructions contained in the Act must be adhered to and



Activity Act (No 28 of 2002)		enforced
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3 DESCRIPTION OF PRE-MINING ENVIRONMENT

The physical environment in the form of the prevailing climatic conditions, air quality, geology, geohydrology, soils and topography is described in this section. The biological environment of the site is described in terms of existing plants, birds and mammals that occur or are likely to occur.

3.1 Geology and soils

The central and south-western part of the study area (the general area where the borrow pits are located) is underlain at depth by quartzitic sandstone and sandstone (various formations) of the Table Mountain Group of the Cape Supergroup. These rocks were originally deposited during Ordovician times into a shallow basin in a beach environment. Subsequent pressure and temperature have resulted in reworking of the original sandstone lithologies to produce the low grade metamorphic quartzitic sandstone that currently occurs along the entire southern Cape coastline of South Africa.

The topography along the route of MR453 is fairly flat and is typical of the coastal plain around Port Elizabeth.

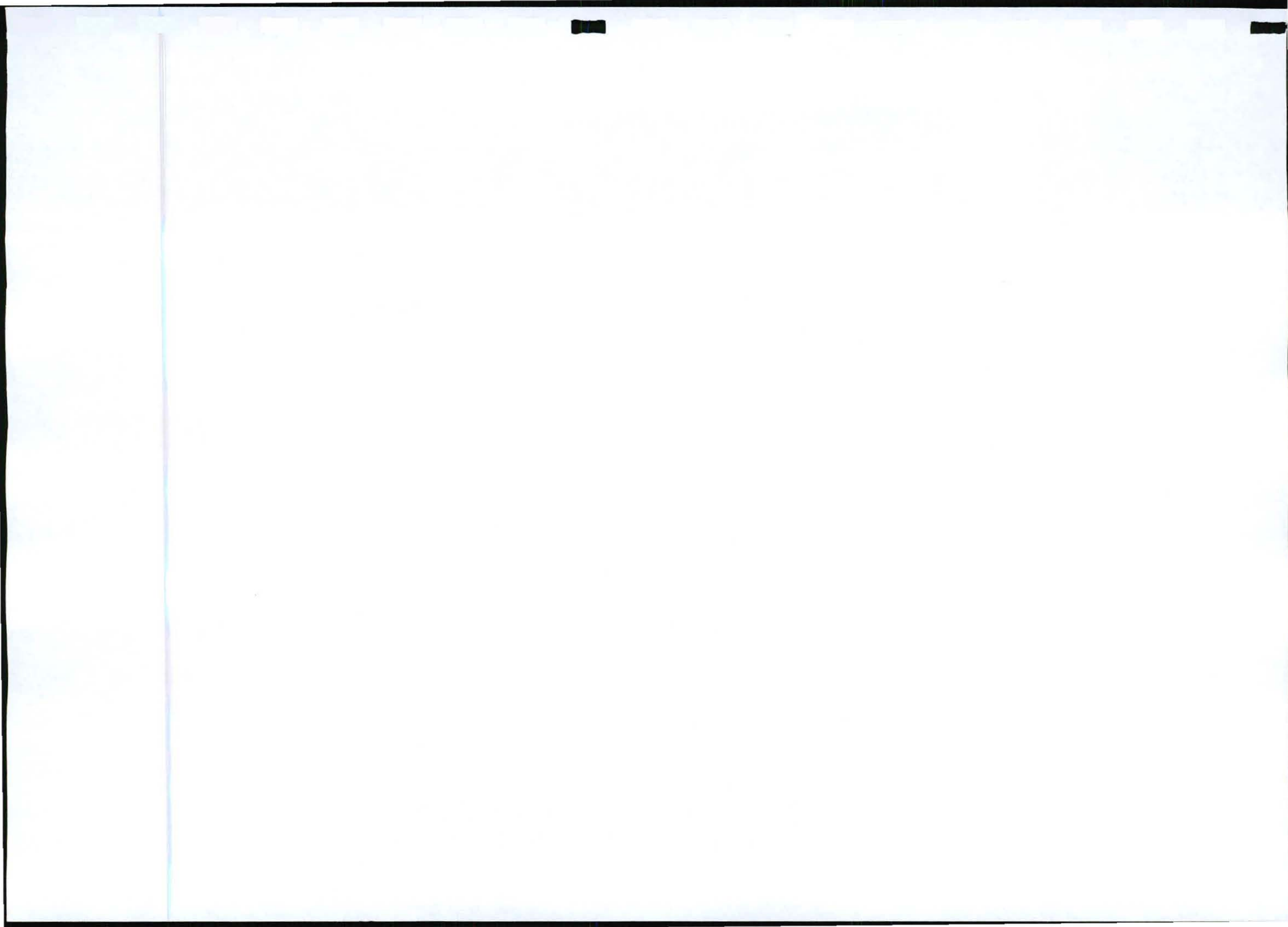
Typical of the marine terrace is that bedrock of quartzitic sandstone and shale are encountered which were tested as borrow sources for use in the sub base and lower layerworks of MR 453. Also typical of this geological area is that areas of ponding and poor drainage occur. The better types of gravel tested at borrow pits 7 and 8, are typical of the competent quartzitic sandstone bedrock of the Peninsula Formation.

The geological profile changes significantly from Uitenhage in the north-east to Witteklip in the south west along the route of MR453.

Borrow Pit BPI is typical of the shales and sandstone of the Ceres Sub group. Borrow 5 is underlain by the Table Mountain group of the Cape Super group as well as quartzitic sandstone of the Peninsula Formation.

3.2 Climate

Climatic data obtained from the South African Weather Bureau (Weather SA) were used to describe the prevailing climate in the Port Elizabeth area. In terms of the Köppen classification scheme both the Port Elizabeth and Uitenhage areas could be regarded as Subtropical with no distinct dry season. Winter months are dominated by south-westerly and westerly winds associated with passing low pressure (cold front) systems. These frontal weather systems produce average wind speeds of between approximately 20 and 25 km per hour. During the summer months, high pressure systems result in easterly and south-easterly dominated wind storms.



3.2.1 Rainfall

Table 2 Average Monthly Rainfall – Witteklip Estate

MONTH	RAINFALL (MM)
January	42.4
February	50.6
March	60.8
April	55.3
May	48.4
June	45.4
July	50.4
August	67.6
September	55.9
October	80.3
November	68.6
December	58.0
ANNUAL AVERAGE	683.7

3.2.2 Temperature

Table 3 Monthly Average; Minimum and Maximum Temperatures

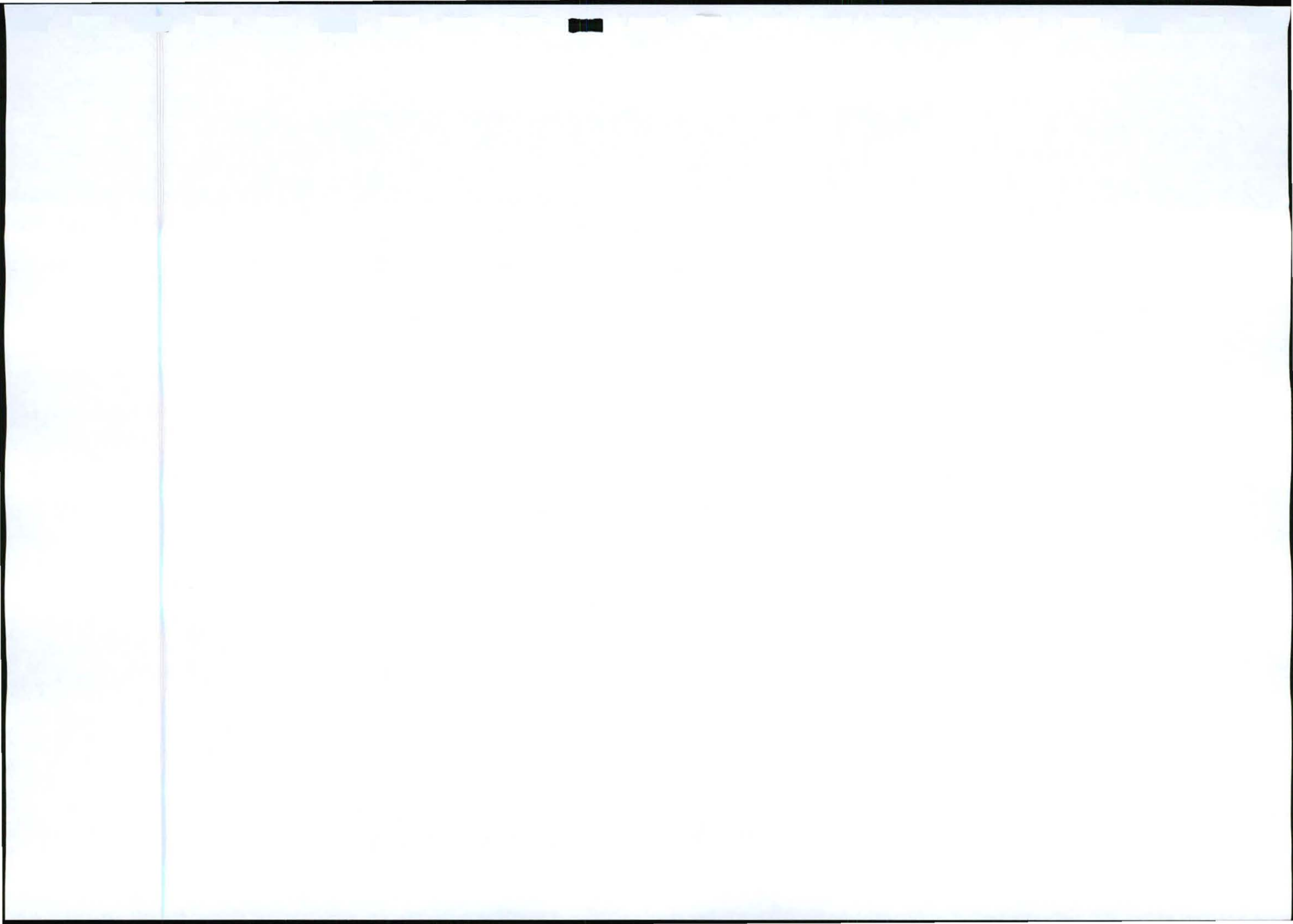
Month	Average Temp (° C)	Minimum Temp (° C)	Maximum Temp (° C)
January	21.5	18	25
February	21.5	18	25
March	21.0	17	25
April	18.5	14	23
May	17	12	22
June	14.5	9	20
July	14.5	9	20
August	15	10	20
September	15.5	11	20
October	17	13	21
November	18.5	15	22
December	20	16	24
Average	18	14	22

3.3 Natural vegetation

3.3.1 Dominant Species

The study area traverses various types of vegetation. It includes the following vegetation types as described by Mucina & Rutherford:

- Sundays Thicket
- Kouga Grassy Sandstone Fynbos
- Albany Alluvial Vegetation
- Algoa Sandstone Fynbos
- Humansdorp Shale Renosterveld



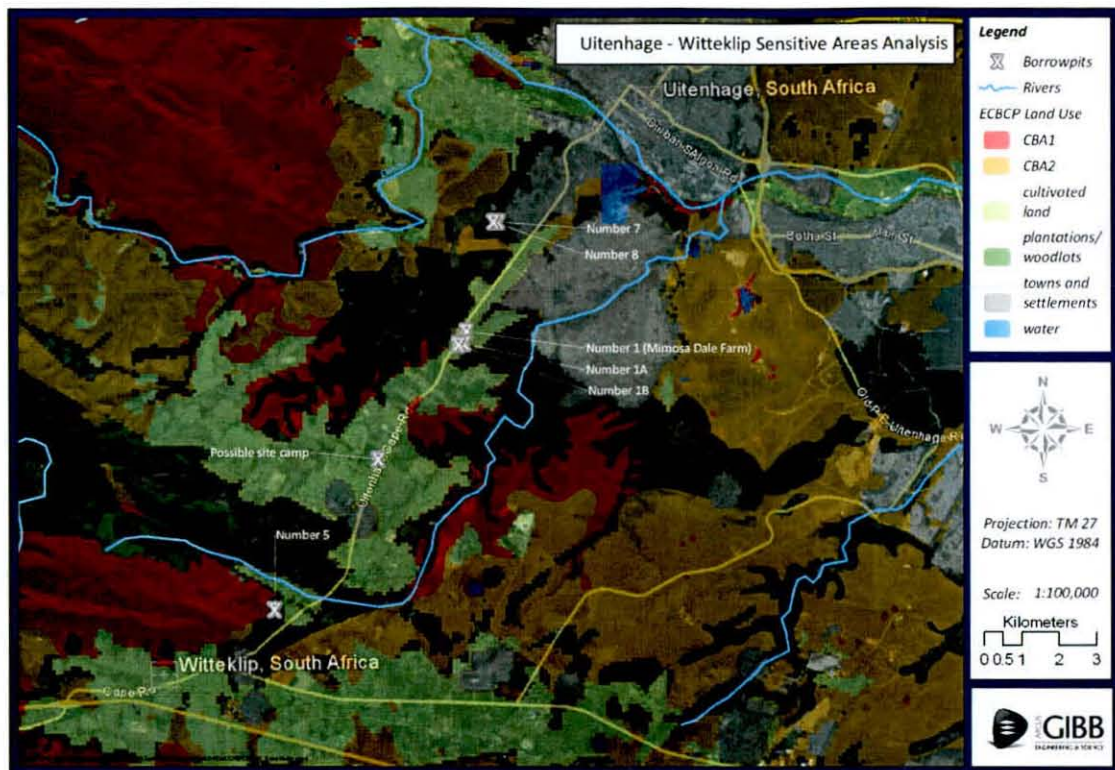


Figure 6 Sensitivity analysis of the proposed mining area

3.3.2 Endangered or Rare species

No endangered or rare species were found within the proposed mining area during the fieldwork undertaken.

3.4 Topography

3.4.1 General Topographical setting

The topography of the area is characteristic of the southern Cape coastal plain in the vicinity of Port Elizabeth. The landforms become more undulating in closer proximity to the coastal mountain ranges as detailed in the geological description of the area traversed by MR453.

Moderate to small catchment areas are located on the western side and cross-drainage is from right to left.

3.4.2 Borrow pit Topographical Settings

Borrow pit 1A and 1B is located on the remaining extent of farm 328 (Mimosa Dale), Nelson Mandela Bay Metropolitan Municipality. The area is characterised by a flat area underlain with quartzitic sandstone. The area was a natural water catchment area but has since dried out.



Borrow pit 5 is located on Farm 129 portion 419. The area comprises flat terrain with small catchment areas on the northern side of the road. Cross-drainage is extremely flat in this area and careful attention must be given to avoidance of ponding.

Borrow pit 7 and 8 is located on Farm 132 portion 5. The site is located on a gradient of approximately 7%. The terrain is gently undulating and moderate to small catchment areas are present in the area.

3.5 Land use and adjacent owners

All the borrow pits have historically been used as quarries. Surrounding land use consists primarily of agriculture and small informal settlements.

3.6 Air quality – Existing source of air quality

The only source of air pollution at the site at present is airborne dust resulting from past mining that may be generated during high velocity winds. The closest additional source of air pollution is dust and vehicle emissions from traffic moving along the MR453.

Borrow pit 7 and 8 are located in close proximity to a residence and consequently presents a potential impact with regards to nuisance caused by dust.

3.7 Noise –existing sources and levels

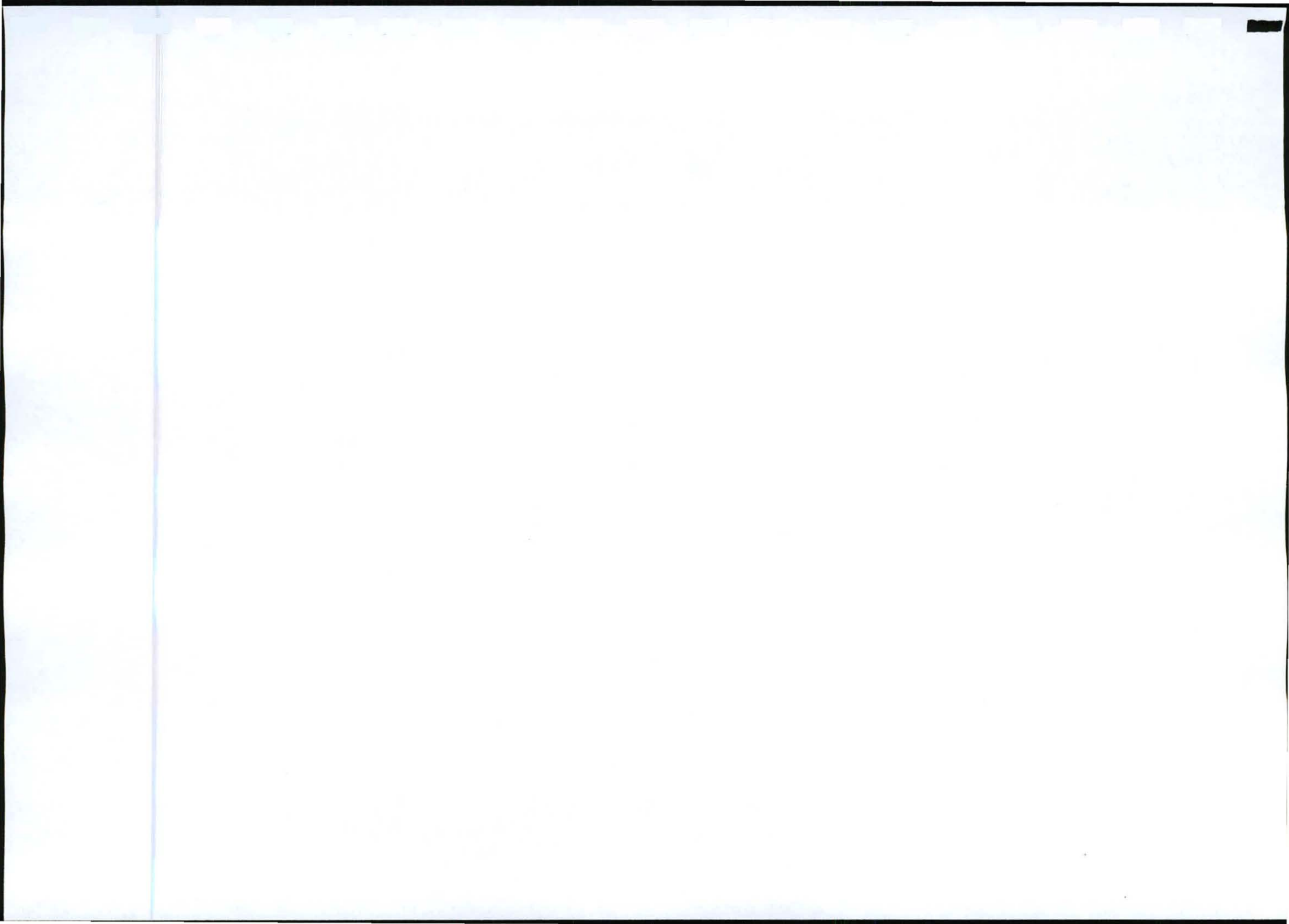
Existing sources of noise are limited to traffic on the gravel roads. Noise levels at the borrow pit sites are low due to the distance from both the road and the residences at Borrow pits 7 and 8.

3.8 Site of archaeological and cultural interest

There are no known sites of archaeological and cultural interest within the boundaries of the properties of any of proposed mining sites.

3.9 Interested and Affected Parties

The closest residence to any of the borrow pits is located approximately 200 metres from the proposed site of borrow pit 7 and 8.

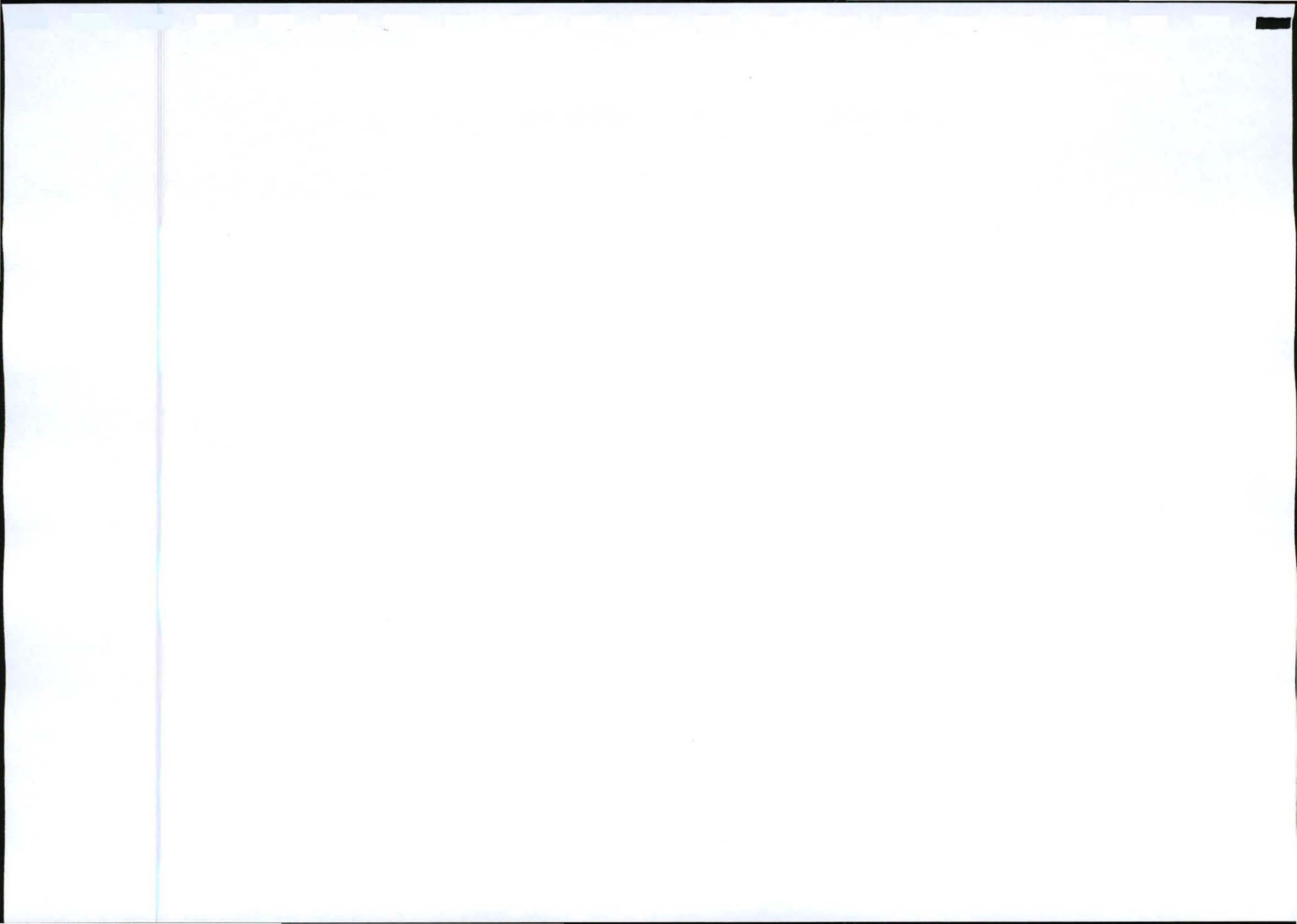


The impact of the proposed mining will have minimal impact on surroundings because of its location.

No comments were received from Interested and affected parties or Stakeholders. I&APs who registered did not have any objections against the proposed mining activities. Please see comments register/ minutes of the public participation meetings attached.

An advertisement was placed in the local newspaper and a public participation meeting was subsequently held on 20 August 2009. The turn out at the meeting, unfortunately was very poor. (See Appendix F)

The main concern raised by I&AP's was regarding compensation for allowing DRT to mine on their property.



4 DETAILED DESCRIPTION OF PROJECT

This section provides a detailed description of the proposed construction, operation, decommissioning and closure of the borrow pits.

4.1 Overview

Five borrow pits have been identified for the sourcing of materials for the upgrade of the MR453 between Uitenhage and Witteklip. All the borrow areas identified are located along the MR453 and access is directly off this road. This section provides a detailed description of the proposed construction, operation, decommissioning and closure of the borrow pits.

The total mining area for all the borrow pits including infrastructure and temporary storage areas, are less than 1.5ha in extent each.

The proposed mining areas have all been mined previously and no rehabilitation occurred. The impact on vegetation due to the proposed sourcing of material for the MR453 will therefore be minimal.

Surface material will be cleared using a front end loader, excavator and trucks.

Construction and drinking water will be brought on site by the contractor as there is no access to a water supply.

Occupational health and safety specialist have been employed to oversee all mining activities on site. Site offices, diesel storage tanks and material loading infrastructure will be constructed on site within the areas designated for such developments.

Solid Waste Management Facilities

4.2 Mining Activities

Mining of all borrow pits will be by means of mechanical excavations and no blasting will take place on site. The borrow pits will be mined in its totality and will be rehabilitated afterwards to a state as close as possible to the natural state.

4.2.1 At all Borrow pits

Overburden material will be pushed to the sides of the proposed mining area and serve as a stormwater berm. After the area has been cleared mining will commence and material will be transferred into a mobile crusher that will be on site.

Topsoil will be removed and stockpiled by means of bull dozers and should be protected as far as possible because of the limited amount of topsoil available. After all vegetation has been removed mining will commence in the form of benches to allow for creating a gradual slope.

4.5.3. Water Pollution

Water pollution is the contamination of water bodies (oceans, rivers, lakes, streams, groundwater, etc.) by substances that have a harmful effect on the water quality. Water pollution is a major environmental problem that affects the health of humans and animals, and the environment.

4.5.4. Water Quality

Water quality is the degree to which water meets the requirements for a particular use. Water quality is determined by a number of factors, including the amount of pollution, the type of pollution, and the location of the water body. Water quality is a key indicator of environmental health and is essential for the survival of humans and animals.

4.5.5. Water Treatment

Water treatment is the process of removing contaminants from water to make it safe for use. Water treatment is a complex process that involves a number of steps, including filtration, sedimentation, and disinfection. Water treatment is essential for protecting public health and the environment.

4.5.6. Water Conservation

Water conservation is the practice of using water efficiently to reduce the amount of water that is wasted. Water conservation is an important part of sustainable development and is essential for protecting the environment and public health. Water conservation can be achieved through a number of measures, including fixing leaks, using water-saving devices, and changing habits.

4.5.7. Water Resources

Water resources are the sources of water that are available for use. Water resources include surface water (rivers, lakes, streams) and groundwater (aquifers). Water resources are essential for the survival of humans and animals, and are a key component of the environment.

4.5.8. Water Pollution Control

Water pollution control is the process of preventing and reducing water pollution. Water pollution control is a complex task that involves a number of measures, including regulating the discharge of pollutants, enforcing water quality standards, and promoting water conservation. Water pollution control is essential for protecting the environment and public health.

4.5.9. Water Quality Monitoring

Water quality monitoring is the process of measuring the quality of water in a water body. Water quality monitoring is essential for assessing the health of the environment and for identifying sources of pollution. Water quality monitoring can be done using a number of methods, including sampling and analysis.

4.5.10. Water Quality Standards

Water quality standards are the minimum levels of water quality that are required for a particular use. Water quality standards are established by government agencies and are used to assess the health of the environment and to identify sources of pollution. Water quality standards are essential for protecting the environment and public health.

4.5.11. Water Quality Assessment

Water quality assessment is the process of evaluating the quality of water in a water body. Water quality assessment is a complex task that involves a number of factors, including the amount of pollution, the type of pollution, and the location of the water body. Water quality assessment is essential for assessing the health of the environment and for identifying sources of pollution.

4.5.12. Water Quality Improvement

Water quality improvement is the process of reducing the amount of pollution in a water body and increasing the quality of the water. Water quality improvement is a complex task that involves a number of measures, including regulating the discharge of pollutants, enforcing water quality standards, and promoting water conservation. Water quality improvement is essential for protecting the environment and public health.

4.5.13. Water Quality Protection

Water quality protection is the process of preventing water pollution and maintaining the quality of water in a water body. Water quality protection is a complex task that involves a number of measures, including regulating the discharge of pollutants, enforcing water quality standards, and promoting water conservation. Water quality protection is essential for protecting the environment and public health.

4.3.4 Water Pollution Management Facilities

Sewage plant location

There will be **NO** sewage treatment plants on any of the borrow pit sites. Chemical toilets will be provided, which will be emptied at the nearest licensed sewage treatment works on a regular basis.

4.3.5 Potable water supply

Potable drinking water for will be brought onto site on a daily basis by the operator.

4.3.6 Process water supply

Process water will not be required at the borrow pits for any purpose other than dust suppression along the access roads. Contractor will be responsible for providing water for this purpose. No water will be sourced from river or water bodies without the required authorisations.

4.3.7 Mineral processing plant

The only mineral processing to take place on site of the borrow pits will be crushing of the material by a mobile crusher that will be brought on site by the contractor.

4.3.8 Workshop, administration and other buildings

A container will be utilised as office space on site by the contractor. This will be the only temporary infrastructure on site.

4.3.9 Housing

There will be **NO** housing on site of the borrow pits.

4.3.10 Transport

All processed material will be taken to its point of use by trucks.

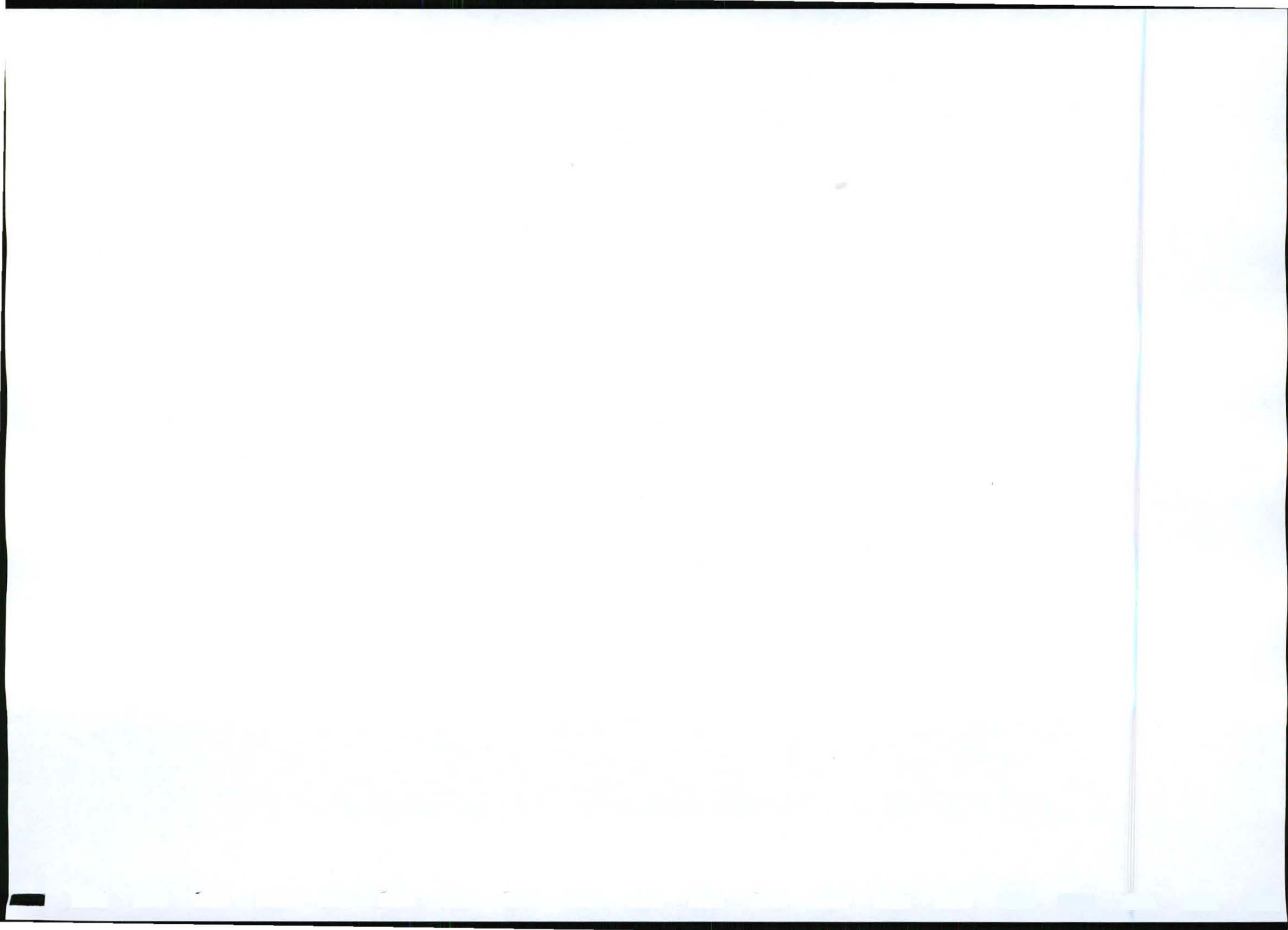
4.3.11 Disturbances of Water Courses

There are no watercourses in the vicinity of the proposed borrow pit areas.

4.4 Construction phase

The construction phase will consist of clearing the site of vegetation, topsoil and overburden in order to expose the underlying material to be utilised. Topsoil will be cleared by means of a bulldozer and stockpiled adjacent to the active mining area.

Stockpiles will be not more than 1.5 metres in height, according to the "COLTO" Specifications. Stockpiles will be positioned below the stormwater diversion berm, where necessary, in order to prevent erosion. Topsoil stockpiles will be positioned separately from the overburden stockpiles and will not be compacted.



Cut-off drains will be established as indicated in the borrow pit plans in APPENDIX A. Energy dissipaters will be constructed to prevent erosion down slope of these drains.

4.5 Decommissioning phase

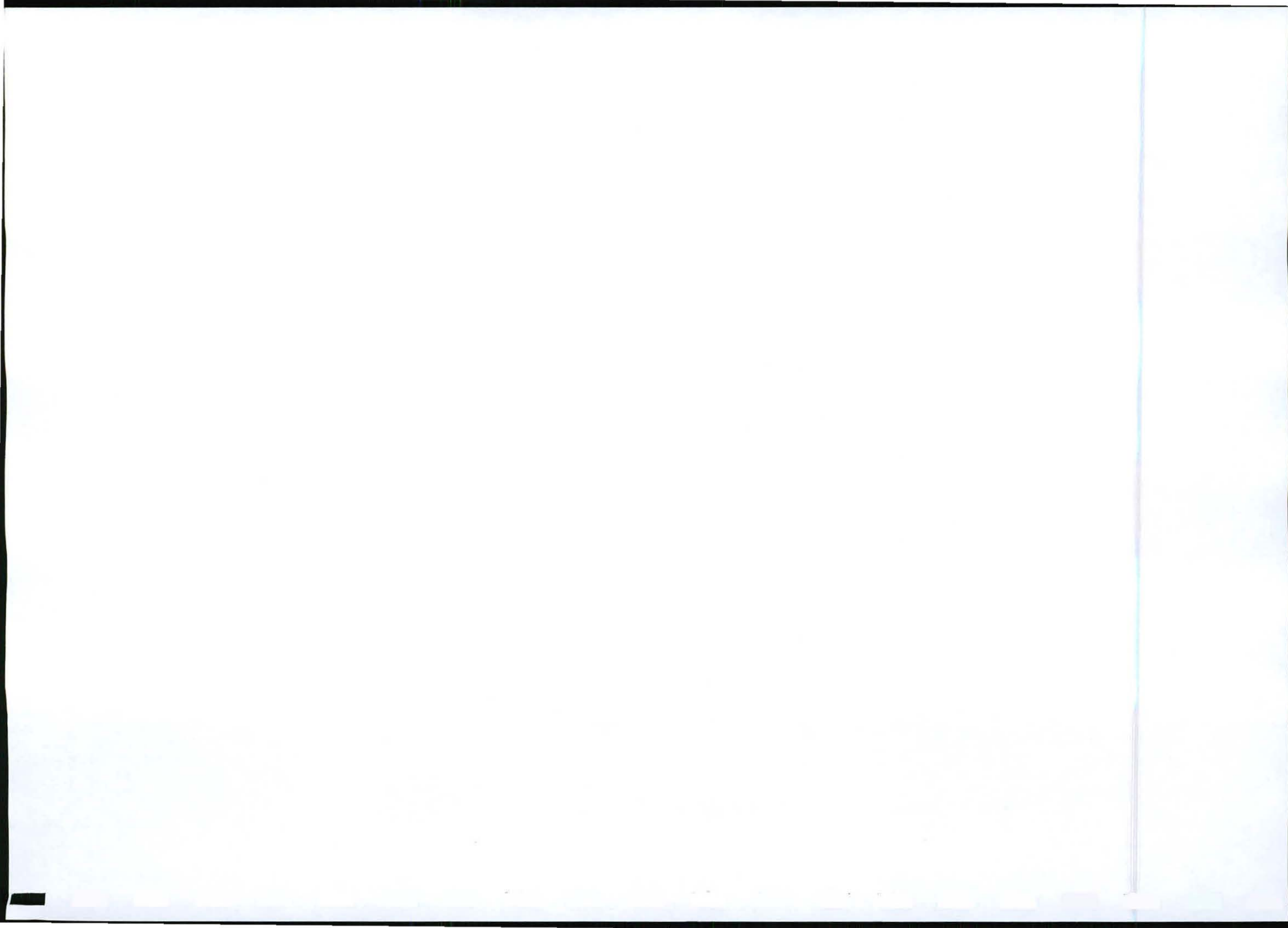
The decommissioning phase will entail rehabilitation of all borrow pit sites.

All equipment and structures will be removed from the site. The site will be cleared of all litter and scrap, which may have accumulated. Bulldozers will be used to profile the borrow pit sidewalls to a 1:3 slope with 3m wide benches where indicated, and to slope the floor of the borrow pits to facilitate free draining. Spoil material from the construction areas will be used to profile the borrow pit areas and assist in the rehabilitation process of the borrow pits.

Topsoil will be returned to the site, and reseeded according to the management plan provided in Section 7.

Access roads will be scarified to facilitate revegetation. Soil fertility analyses will be conducted on the topsoil prior to final rehabilitation. If required, the soil will be augmented with fertilizer and/or compost (manure) on the recommendation of a soil fertility laboratory.

Fences and stormwater control structures (Cut-off drains and energy dissipaters) will only be removed once closure of the mining areas has been granted by the DME.



5 ENVIRONMENTAL IMPACT ASSESSMENT

The most important component, and in fact the underlying purpose, of an EIA is the identification, analysis and evaluation of the significance of potential environmental consequences associated with a proposed action. From this process appropriate environmental management plans are developed in order to avoid, minimize, rectify or compensate for negative impacts, or in the case of positive impacts, to enhance these. The purpose of this chapter is to describe the impact assessment methodology and to make an assessment of the environmental consequences of the proposed actions.

The definition of environment for the purposes of EIA includes:

- effects on human health, well-being, environmental media, ecosystems and agriculture;
- effects on climate and the atmosphere;
- use of natural resources (regenerative and mineral);
- utilization and disposal of residues and wastes; and
- Resettlement, archaeological sites, landscape, monuments and social consequences as well as upstream, downstream and trans-boundary effects.

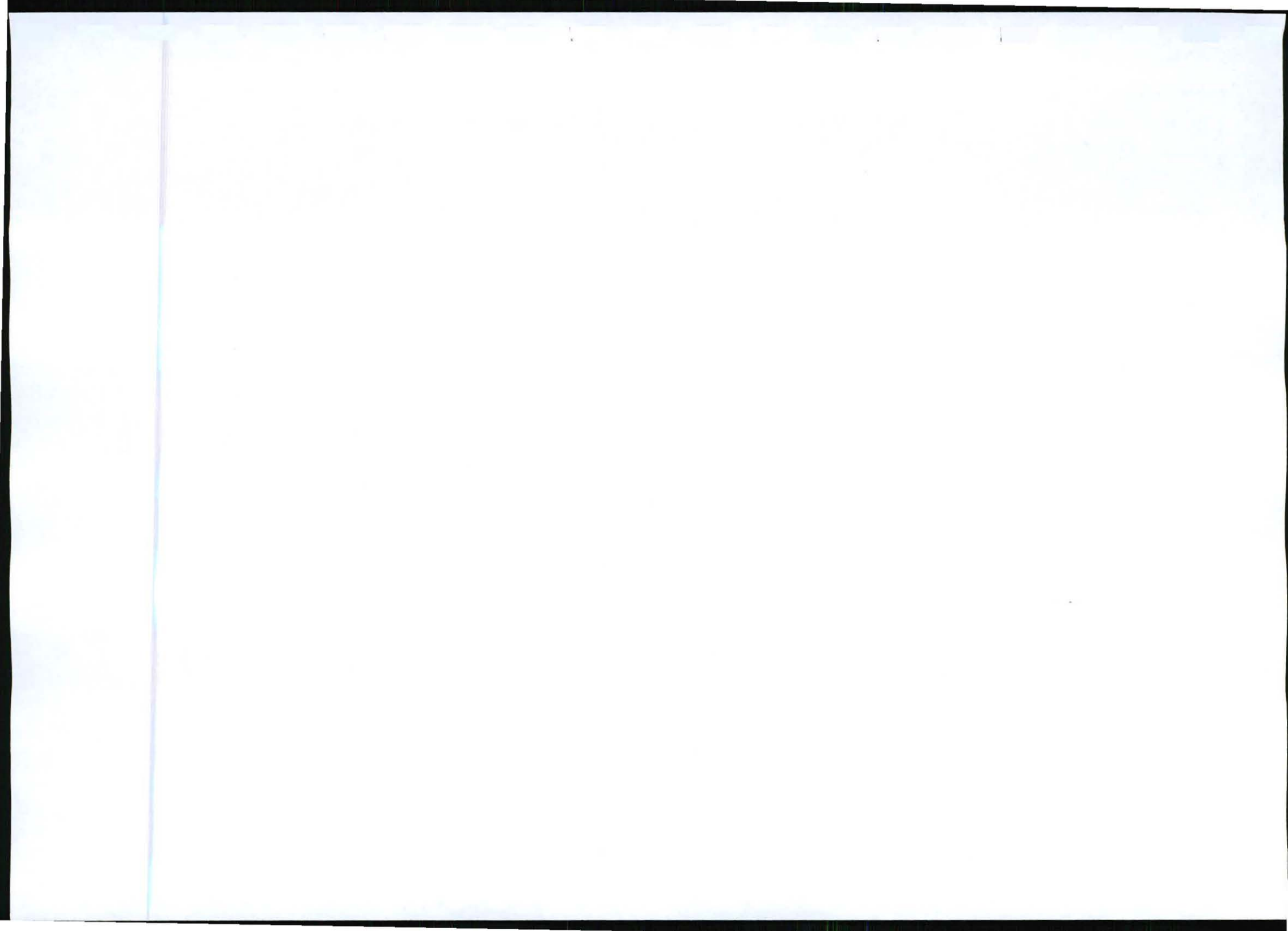
The purpose of this assessment is then to isolate those elements of the environment that may be affected in this specific case, and to rate the extent and magnitude of any anticipated effect or change.

This section presents the findings of the impact assessment of the proposed activities to be carried out under the construction and operation phases of the project. Residual impacts – i.e. those which remain after closure are identified and assessed.

The borrow pits have been assessed according to the following criteria:

Criteria for Ranking Severity of Environmental Impacts

	LOW	MEDIUM	HIGH	DEFINITE
Intensity	Ecological functions may continue undisturbed, no rare or endangered species affected, no objection from I&APs	Ecological functioning temporary affected, no rare or endangered species affected, some concern from I&APs	Ecological functioning permanently altered, rare or endangered species impacted, major concern from I&APs	N/A
Spatial Scale	Immediate area of impact	Beyond site boundary; Local	Far beyond site boundary; Regional/National	N/A
Duration	Quickly reversible; Less than the project life; Short Time	Reversible over time; Life of the project; Medium term	Permanent; Beyond Closure; Long term	N/A
Probability	Unlikely	Possible	Likely	Highly Likely/ Definite



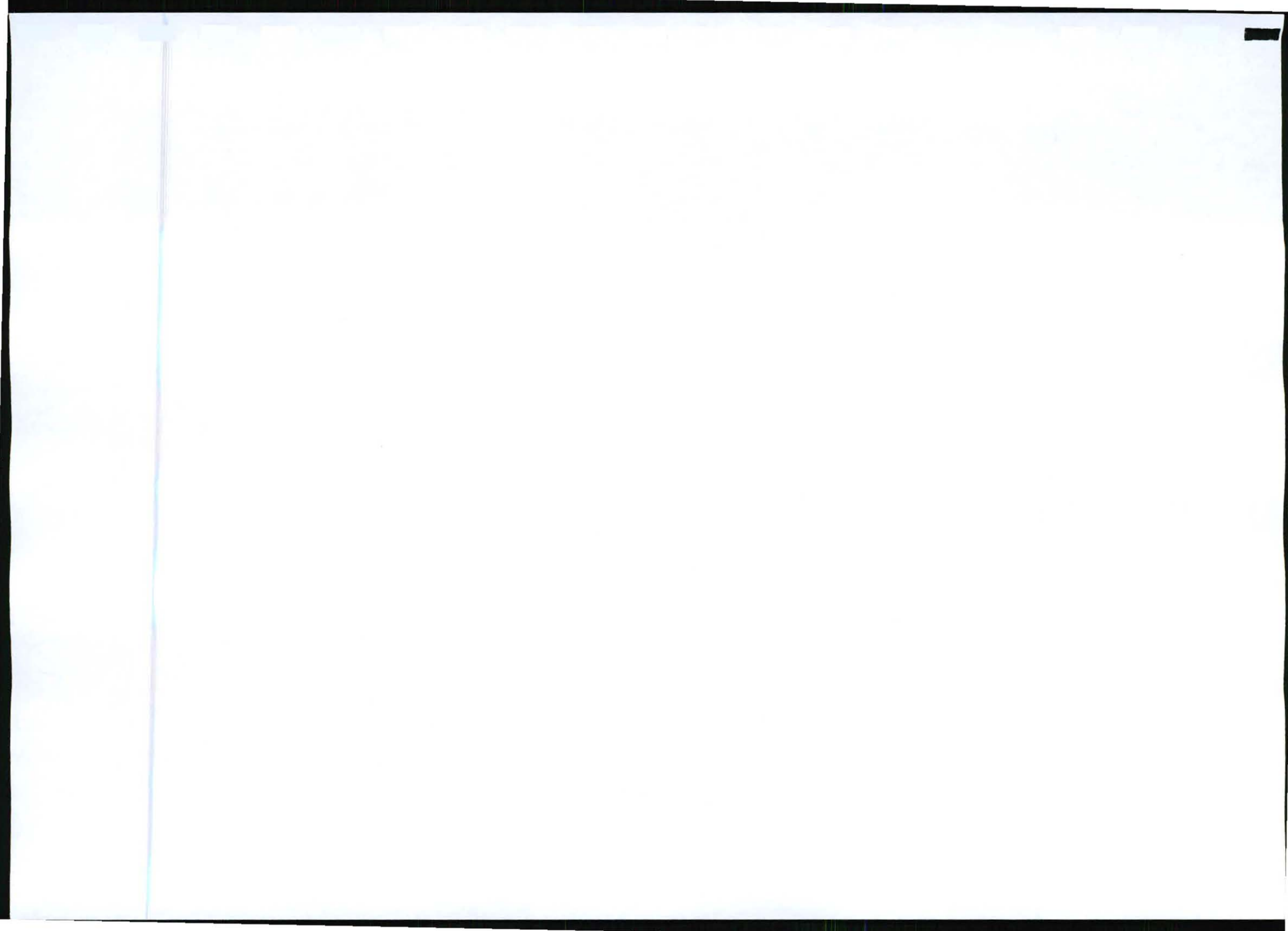
Environment	Description of Environmental Impact Borrow pit 1A	Criteria				Significance	
		Intensity	Spatial Scale	Duration	Probability	With Mitigation	Without Mitigation
Geology	Mining will have a permanent impact on the geology.	H	M	H	D	MEDIUM	HIGH
Topography	Permanent removal of rock will alter the topography, and consequently the visual impact and surface water drainage.	H	M	H	D	MEDIUM	HIGH
Soils and Erosion	Removal of topsoil and stockpiling during construction and operational phase may result in erosion and loss of viable topsoil.	H	M	M	D	MEDIUM	HIGH
Land capability	Impact of mining on future land capability.	M	M	M	H	LOW	MEDIUM
Natural vegetation.	Loss of vegetation due to clearing of site.	H	M	M	D	LOW	LOW
Animal Life	Bush clearing will result in habitat loss for indigenous fauna	M	M	M	H	LOW	LOW
Surface water	Contaminated water runoff from site may result in contamination of surface and ground water sources.	M	H	H	D	MEDIUM	HIGH
	There may be an increase in the amount of soil in the stormwater runoff, which may result in the siltation of drainage lines						
Groundwater	Contamination of groundwater sources from spillages and other forms of pollution	NO IMPACT ON GROUNDWATER					
Air Quality	Impact of mining activity on the air quality in the area.	M	M	M	L	LOW	MEDIUM
Noise impact	Mining equipment may produce noise	M	M	M	D	LOW	MEDIUM
Visual Impact	Area will be highly visible from the road.	H	M	H	D	MEDIUM	HIGH
Socio- Economic	Employment of local residents/communities.	L	M	M	D	MEDIUM +	LOW
I&AP's	Borrow pit is not situated close to a residential area.	M	M	M	H	LOW	MEDIUM

Coordinates: S 33°49'27.31" E 25° 20' 42.16'



Discussion:

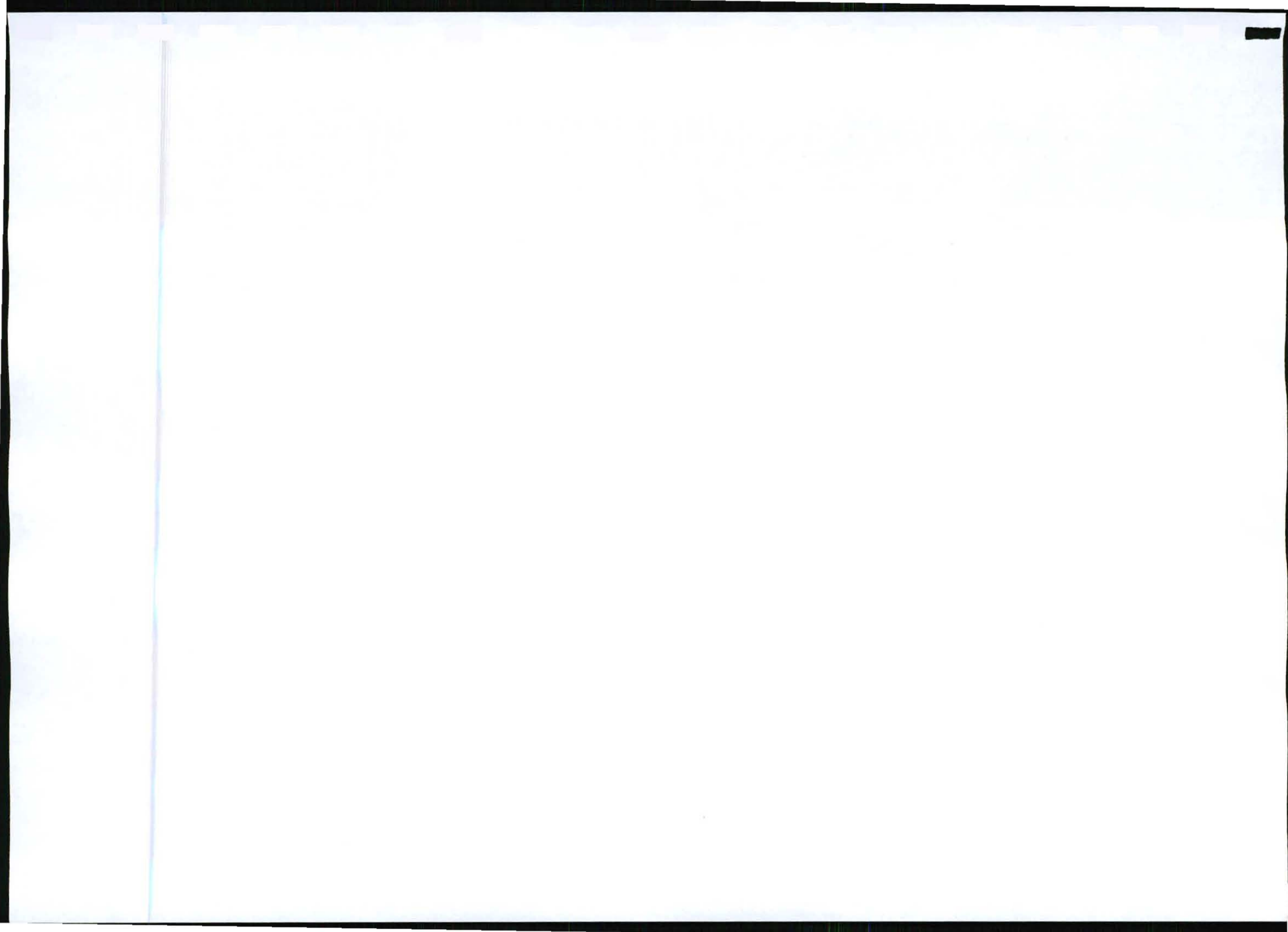
The proposed borrow pit is situated on the remainder of Farm 327, Mimoso Dale . At present the site is being used as an unlicensed quarry by the Local Municipality and the area is highly impacted as a result.



Environment	Description of Environmental Impact Borrow pit 1B	Criteria				Significance	
		Intensity	Spatial Scale	Duration	Probability	With Mitigation	Without Mitigation
Geology	Mining will have a permanent impact on the geology.	H	M	H	D	MEDIUM	HIGH
Topography	Permanent removal of rock will alter the topography, and consequently the visual impact and surface water drainage.	H	M	H	D	MEDIUM	HIGH
Soils and Erosion	Removal of topsoil and stockpiling during construction and operational phase may result in erosion and loss of viable topsoil.	H	M	M	D	MEDIUM	HIGH
Land capability	Impact of mining on future land capability.	M	M	M	H	LOW	MEDIUM
Natural vegetation.	Loss of vegetation due to clearing of site.	H	M	M	D	LOW	LOW
Animal Life	Bush clearing will result in habitat loss for indigenous fauna	M	M	M	H	LOW	LOW
Surface water	Contaminated water runoff from site may result in contamination of surface and ground water sources. There may be an increase in the amount of soil in the stormwater runoff, which may result in the siltation of drainage lines	M	H	H	D	MEDIUM	HIGH
Groundwater	Contamination of groundwater sources from spillages and other forms of pollution	NO IMPACT ON GROUNDWATER					
Air Quality	Impact of mining activity on the air quality in the area.	M	M	M	L	LOW	MEDIUM
Noise impact	Mining equipment may produce noise	M	M	M	D	LOW	MEDIUM
Visual Impact	Area will be highly visible from the road.	H	M	H	D	MEDIUM	HIGH
Socio- Economic	Employment of local residents/communities.	L	M	M	D	MEDIUM +	LOW
I&AP's	Borrow pit is not situated close to a residential area	M	M	M	H	LOW	MEDIUM

Coordinates: S33°49'28.76" E 25° 20' 36.92'

	<p>Discussion:</p> <p>The proposed borrow pit is situated on the remainder of Farm 327, Mimosadale . At present the site is being used as an unlicensed quarry by the Local Municipality and the area is highly impacted as a result.</p>
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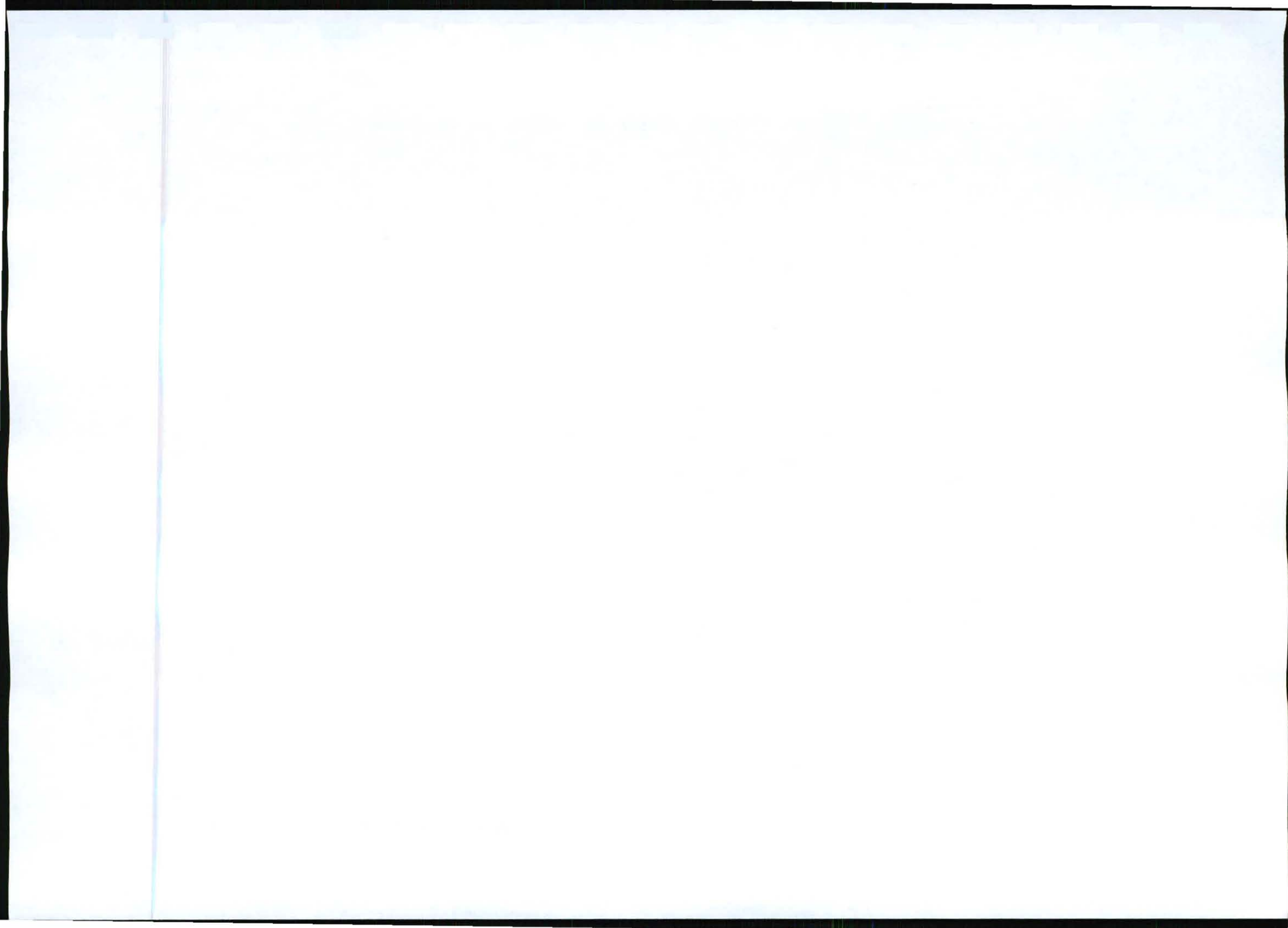


Environment	Description of Environmental Impact Borrow pit 5	Criteria				Significance	
		Intensity	Spatial Scale	Duration	Probability	With Mitigation	Without Mitigation
Geology	Mining will have a permanent impact on the geology.	H	M	H	D	MEDIUM	HIGH
Topography	Permanent removal of rock will alter the topography, and consequently the visual impact and surface water drainage.	H	M	H	D	LOW	HIGH
Soils and Erosion	Removal of topsoil and stockpiling during construction and operational phase.	H	M	M	D	MEDIUM	HIGH
Land capability	Impact of mining and topsoil removal on future land capability	M	M	M	H	LOW	MEDIUM
Natural vegetation.	Bush clearing taking place on site.	L	L	M	D	LOW	MEDIUM
Animal Life	Bush clearing will result in habitat loss for indigenous fauna	L	L	M	D	LOW	MEDIUM
Surface water	Contaminated water runoff from site, potential contamination of surface water sources.	L	L	M	M	LOW	MEDIUM
	There may be an increase in the amount of soil in the stormwater runoff, which could end up in surrounding rivers						
Groundwater	Contamination of groundwater sources from spillages and other forms of pollution	NO IMPACT ON GROUNDWATER					
Air Quality	Mechanical bush clearing may produce dust.	M	M	M	D	LOW	MEDIUM
Noise impact	Mechanical bush clearing and operations (excavation) may produce noise	M	M	M	D	LOW	MEDIUM
Visual Impact	Area will be highly visible from the road.	H	M	M	D	LOW	MEDIUM
Socio-Economic	Employment of local residents/communities.	L	M	M	M	LOW - POSITIVE	LOW - NEGATIVE
I&AP's	Borrow pit s not situated in close proximity to residential area	M	M	M	D	LOW - POSITIVE	LOW - NEGATIVE
Coordinates: S 33°53'15.81" E 25° 17' 21.48							



Discussion:

The site for the proposed borrow pit 5 is located on Farm 129 portion 419. The site was used as quarry in the past and is infested by Bluegum and Black Wattle. The quality of topsoil is expected to be very poor due to an extended period of exposure and topsoil may have to be brought on site from alternative sources. Nutrient enrichment is also likely to be required in order to effectively vegetate the site.

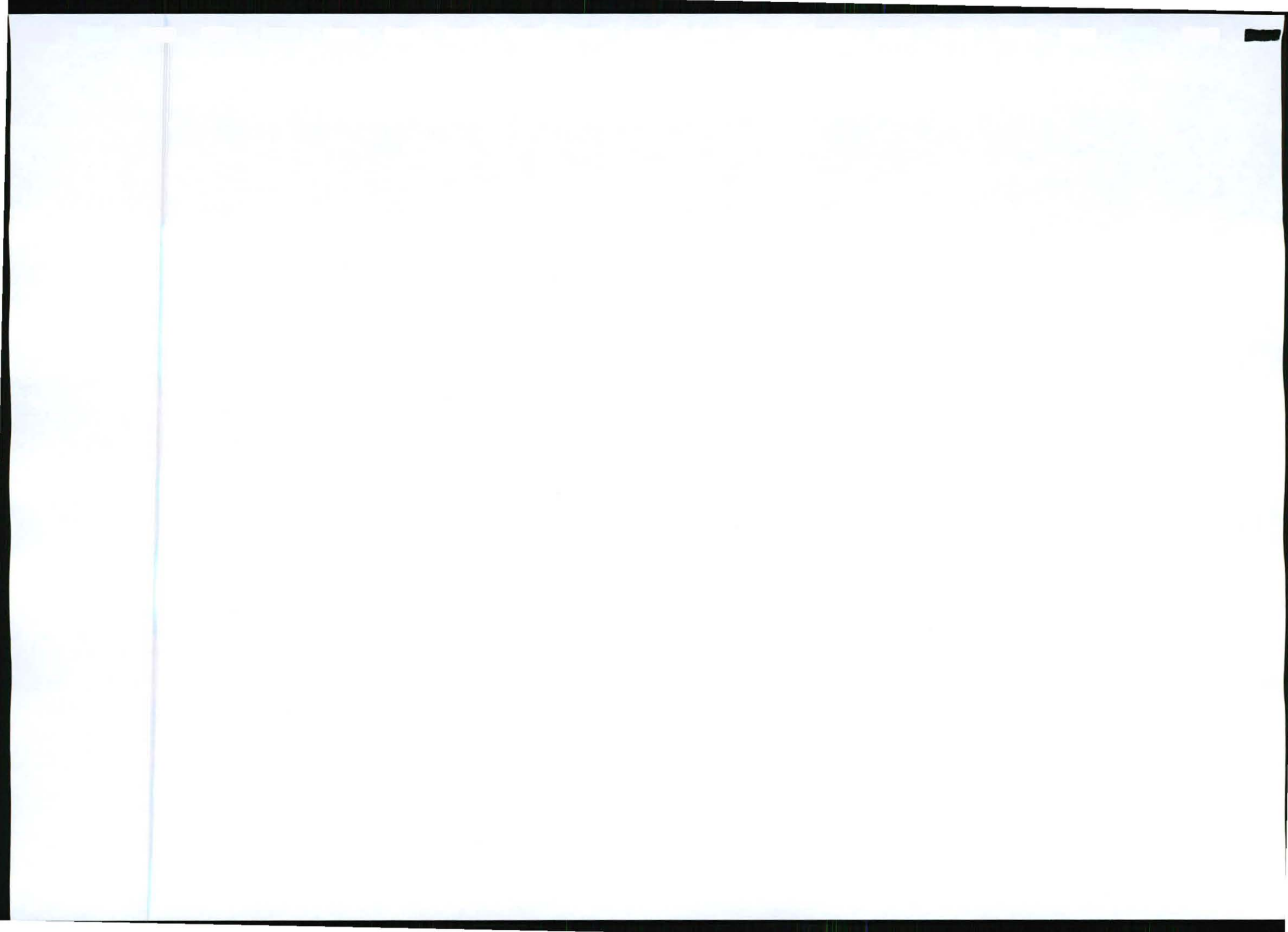



Environment	Description of Environmental Impact Borrow pit 7	Criteria				Significance	
		Intensity	Spatial Scale	Duration	Probability	With Mitigation	Without Mitigation
Geology	Mining will have a permanent impact on the geology.	H	M	H	D	MEDIUM	HIGH
Topography	Permanent removal of rock will alter the topography, and consequently the visual impact and surface water drainage.	H	M	H	D	LOW	HIGH
Soils and Erosion	Removal of topsoil and stockpiling during construction and operational phase.	H	M	M	D	MEDIUM	HIGH
Land capability	Impact of mining and topsoil removal on future land capability	M	M	M	H	LOW	MEDIUM
Natural vegetation.	Bush clearing taking place on site may result in a permanent loss of indigenous vegetation.	L	L	M	D	LOW	MEDIUM
Animal Life	Bush clearing will result in habitat loss for indigenous fauna	L	L	M	D	MEDIUM	HIGH
Surface water	Contaminated water runoff from site, potential contamination of surface water sources.	L	L	M	M	LOW	MEDIUM
	There may be an increase in the amount of soil in the stormwater runoff, which could end up in surrounding rivers						
Groundwater	Contamination of groundwater sources from spillages and other forms of pollution	NO IMPACT ON GROUNDWATER					
Air Quality	Mechanical bush clearing may produce dust.	M	M	M	D	MEDIUM	MEDIUM
	Mining activities will result in liberation of dust						
Noise impact	Mechanical bush clearing and operations (excavation) may produce noise	M	M	M	D	LOW	MEDIUM
Visual Impact	Area will be highly visible.	H	M	M	D	MEDIUM	MEDIUM
Socio-Economic	Employment of local residents/communities.	L	M	M	M	LOW - POSITIVE	LOW - NEGATIVE
I&AP's	Borrow pit situated in close proximity to residential area, which may have an impact on surrounding residents.	M	M	M	D	MEDIUM - NEGATIVE	MEDIUM NEGATIVE
Coordinates: S 33°47'40.93" E 25° 21' 20.25'							

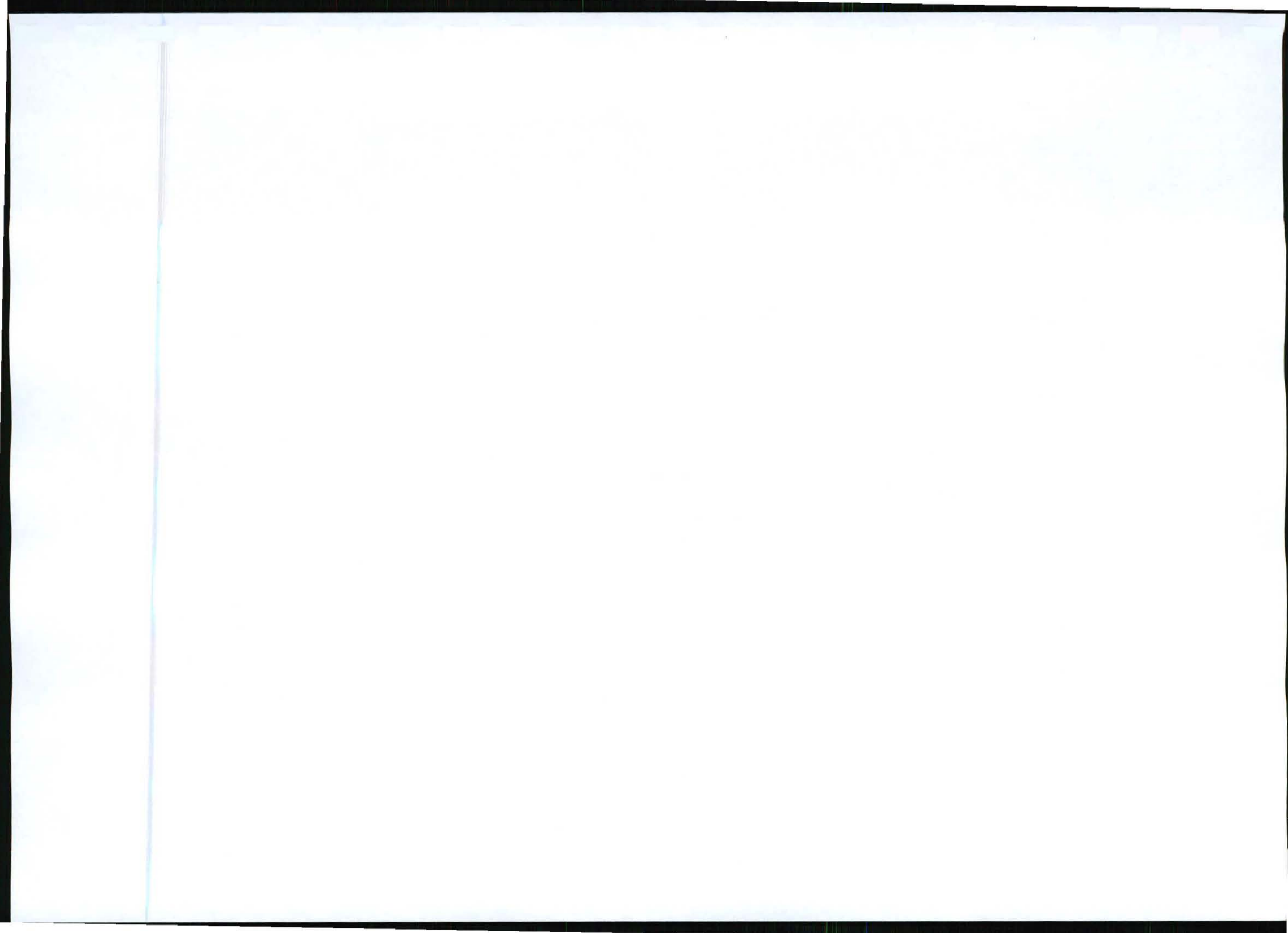


Discussion:

The site for the proposed borrow pit 7 is located on Farm 132 portion 5. The site is impacted due to past use as a quarry. There is limited vegetation present and fast growing invasive species are dominant on the site. The extent of the proposed borrow pit will be 1.48 Ha.



Environment	Description of Environmental impact Borrow pit 8	Criteria				Significance	
		Intensity	Spatial Scale	Duration	Probability	With Mitigation	Without Mitigation
Geology	Mining will have a permanent impact on the geology.	H	M	H	D	MEDIUM	HIGH
Topography	Permanent removal of rock will alter the topography, and consequently the visual impact and surface water drainage.	H	M	H	D	LOW	HIGH
Soils and Erosion	Removal of topsoil and stockpiling during construction and operational phase.	H	M	M	D	MEDIUM	HIGH
Land capability	Impact of mining and topsoil removal on future land capability	M	M	M	H	LOW	MEDIUM
Natural vegetation.	Bush clearing taking place on site.	L	L	M	D	LOW	MEDIUM
Animal Life	Bush clearing will result in habitat loss for indigenous fauna	L	L	M	D	LOW	MEDIUM
Surface water	Contaminated water runoff from site, potential contamination of surface water sources.	L	L	M	M	LOW	MEDIUM
	There may be an increase in the amount of soil in the stormwater runoff, which could end up in surrounding rivers						
Groundwater	Contamination of groundwater sources from spillages and other forms of pollution	NO IMPACT ON GROUNDWATER					
Air Quality	Mechanical bush clearing may produce dust.	M	M	M	D	LOW	MEDIUM
Noise impact	Mechanical bush clearing and operations (excavation) may produce noise	M	M	M	D	LOW	MEDIUM
Visual Impact	Area will be highly visible.	H	M	M	D	MEDIUM	MEDIUM
Socio-Economic	Employment of local residents/communities.	L	M	M	M	LOW - POSITIVE	LOW - NEGATIVE
I&AP's	Borrow pit t situated close to residential area	M	M	M	D	MEDIUM - POSITIVE	MEDIUM- NEGATIVE
Coordinates: S 33°47'41.28" E 25° 21' 15.49'							
					Discussion:		
					<p>The proposed borrow pit is situated on portion 4 of Farm 191. The site was historically used as a quarry and the area is transformed as a result. There is limited indigenous vegetation on site and the impact on vegetation is expected to be minimal.</p>		



5.1 Impacts

5.1.1 Geology

Quarrying results in a permanently altered geology of the site by the removal of material and topsoil. At the five borrow pits, topsoil is not as readily available as most of the sites are already disturbed areas.

5.1.2 Topography

The removal of rock will alter the topography significantly and the impact is rated as high. The impacts on the topography will be site specific as some sites are more vulnerable in terms of visual impacts and natural surface drainage.

5.1.3 Soils and erosion

Quarrying leads to the loss of topsoil. The borrow pits identified are located in already disturbed areas, so there is only a limited amount of topsoil available.

At any mining site erosion can become a problem due to stormwater run-off. Without mitigation measures erosion could become a serious issue on site.

At all borrow pit sites mitigation measures for erosion will need to be implemented. These will include cut-off drains and energy dissipaters.

It is predicted that the topsoil present on the sites will not be adequate for the rehabilitation process.

During operations erosion control mechanisms need to be incorporated. Erosion control mechanisms should also be incorporated in the construction of the access roads to some of the borrow pits.

5.1.4 Land use and land capability

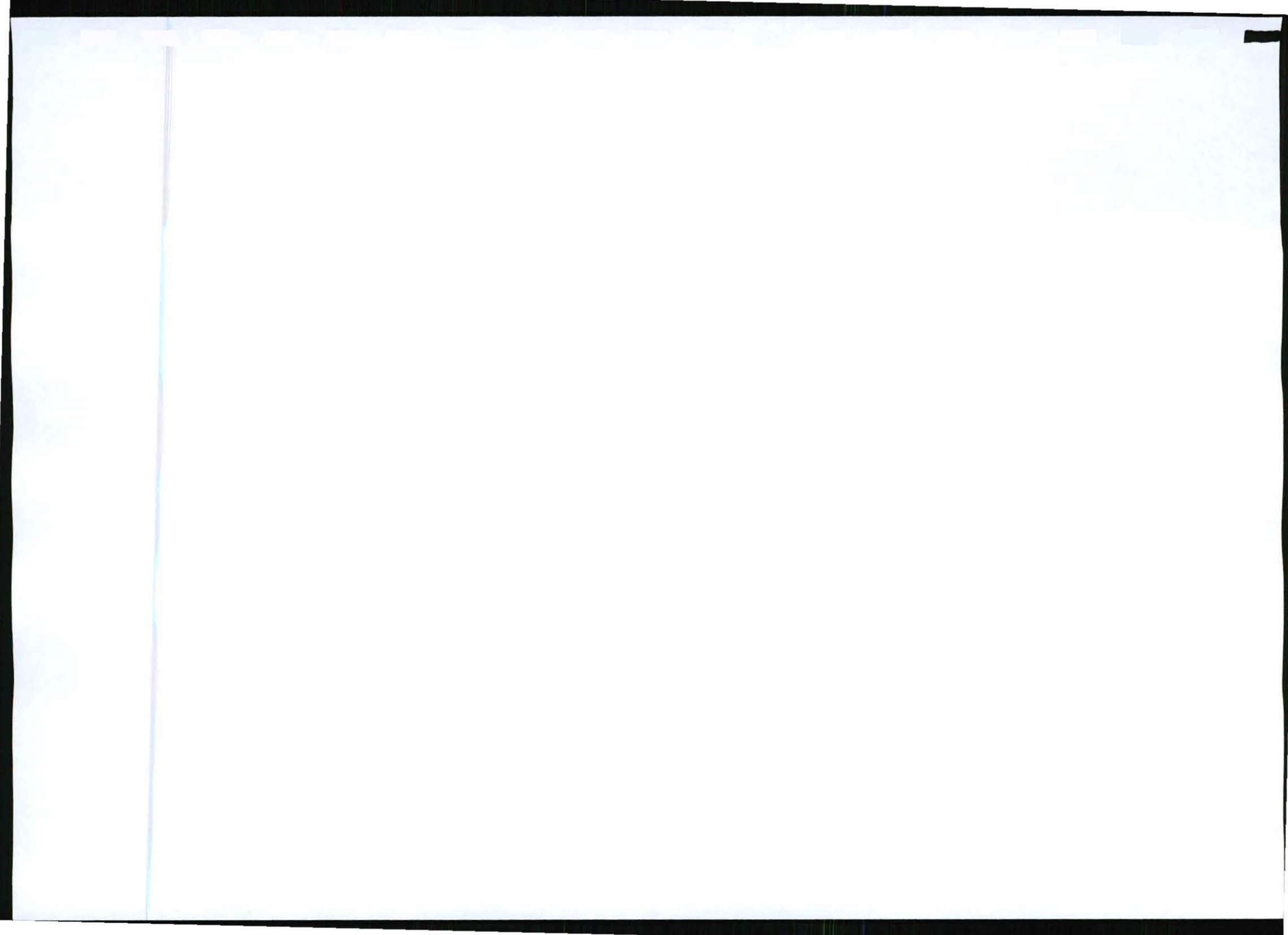
Mining impacts on the land capability and may limit future land use options. All borrow pits will be rehabilitated and will need extensive revegetation as the existing condition is relatively poor.

5.1.5 Natural vegetation

The impact of mining on the natural vegetation is considered high if no rehabilitation is implemented. During the construction phase natural vegetation will be removed in the form of topsoil. This can cause damage to the vegetation and in turn loss of vegetation of the area.

5.1.6 Animal life

There were no rare or endangered animal species observed in the area, which may be impacted on.



5.1.7 Surface water

Contaminated stormwater from the site might have an impact on downstream water bodies.

5.1.8 Groundwater

There will be no impact on the groundwater from construction, operations or rehabilitation/decommissioning phase.

5.1.9 Air Quality

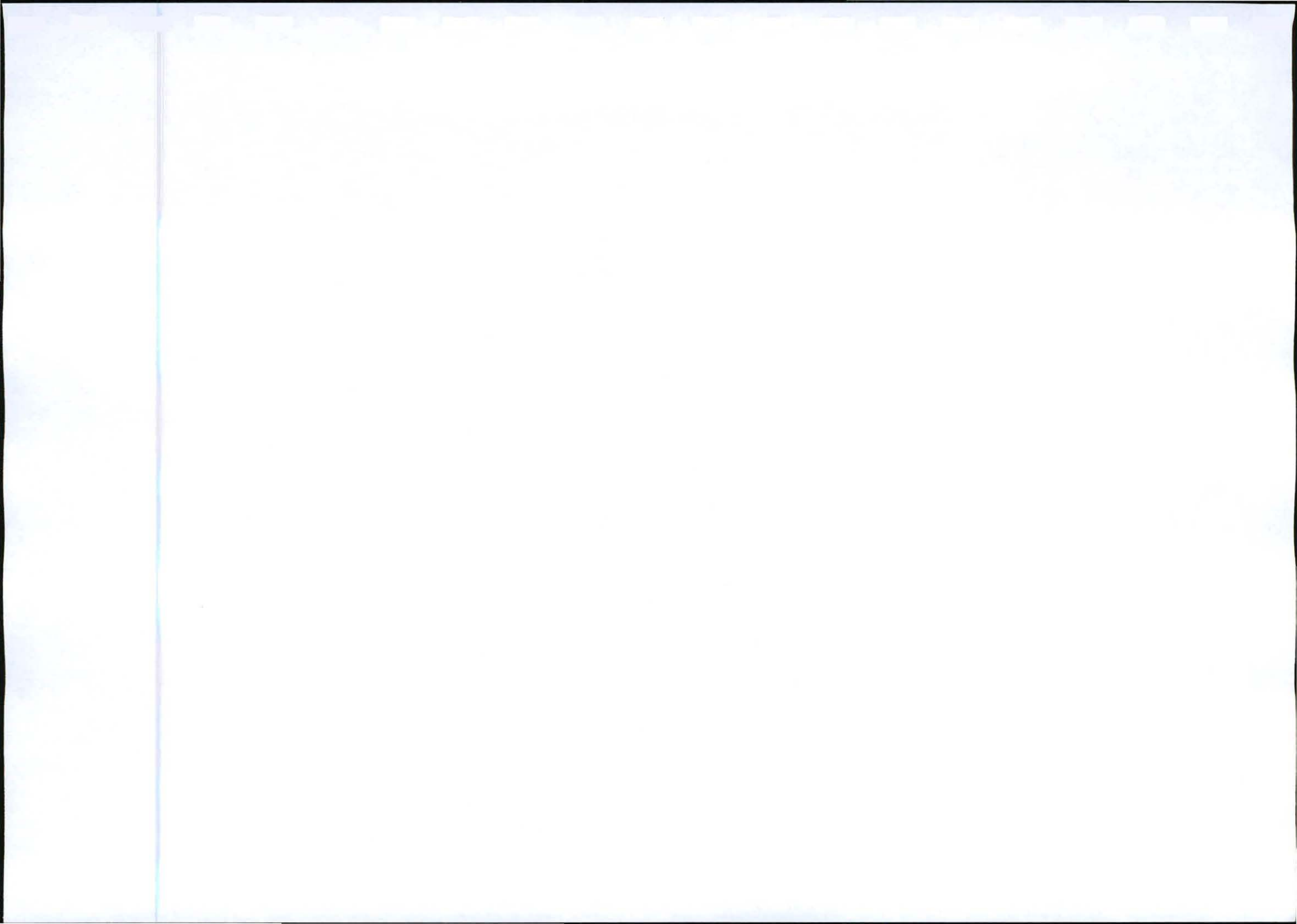
Dust that will be produced during construction and operational phases will have an impact on the air quality in the area of the borrow pits. Only BP 7 is located in close proximity to a residence.

5.1.10 Noise impact

During the construction phase bush clearing will be the main cause of noise in the area. During the operational phase vehicles transporting material off site will have a noise impact on the surroundings. Implementing the measures identified in Section 8 can mitigate the noise impact.

5.1.11 Visual impact

The visual impacts of the borrow pits are relatively low as it is situated away from main roads.



6 ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) set out in this part of the document is legally binding in terms of the Mineral and Petroleum Resources Development Act 28 of 1992 and its Regulations. An environmental management plan is also a working document that can be amended if needed to enforce stricter specifications. The amendments should be submitted to the competent authorities for approval and should be read in conjunction with this document.

It is envisaged that the life of the borrow pits will extend to a maximum of 2 years and the EMP is thus written on this presumption. As the EMP is a working document, changes may be made with regards to future extension of the mine area (life of mine) as well as the consideration of Best Available Technology Not Entailing Extensive Cost (BATNEEC). Any changes to the EMP will be submitted to the Department of Minerals and Energy for approval before any related work is implemented.

Over and above the environmental management procedures listed in this report, it is imperative that staff be educated through an environmental awareness programme. Implementation of the programme is the responsibility of management, who are advised to seek the assistance of a professional environmental educator/facilitator.

6.1 Construction phase

6.1.1 Site camp

The site must be clearly demarcated, and all construction activities including construction camp sites and stockpiling and building material must be strictly confined to this demarcated area.

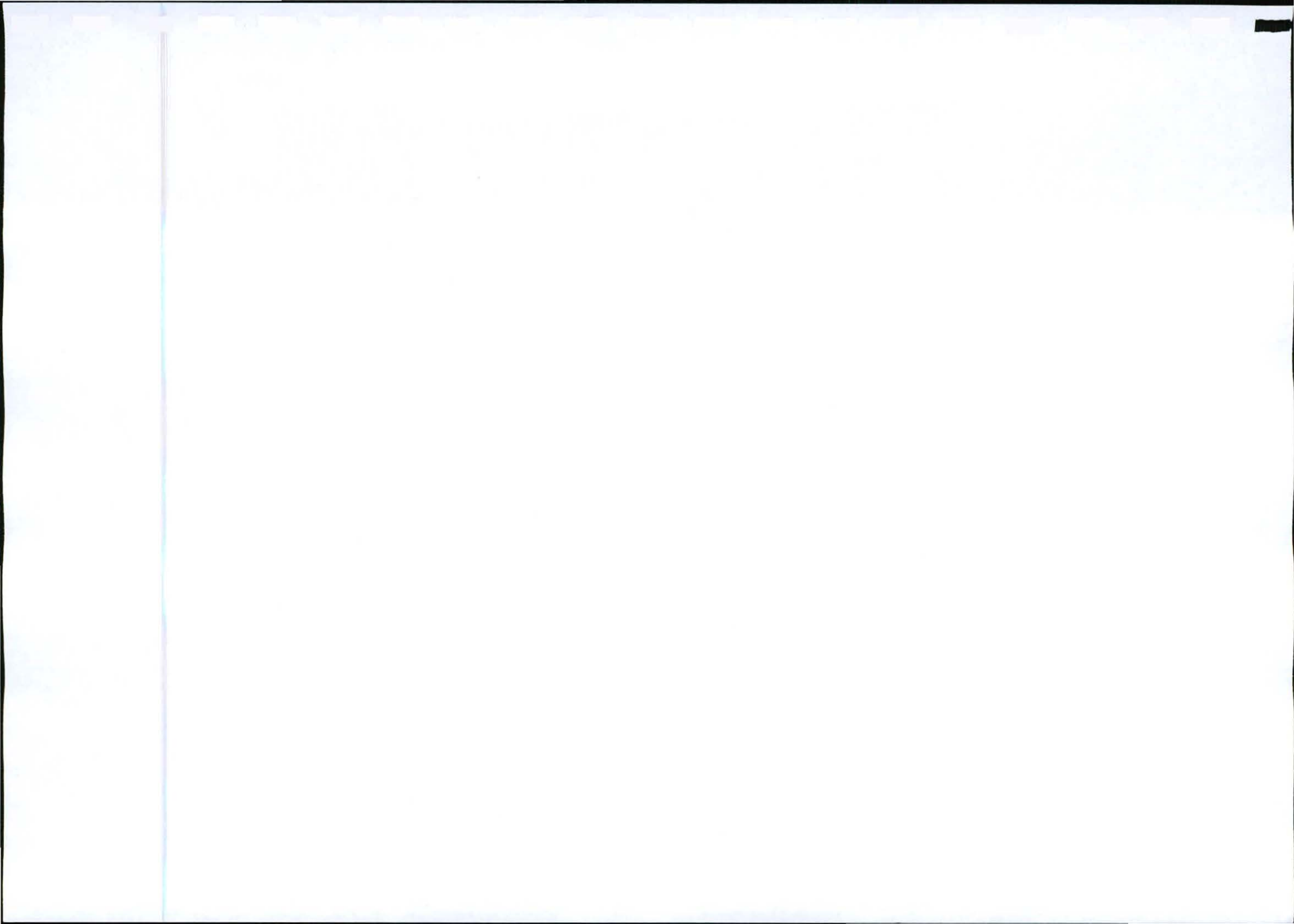
Camps, offices, workshops, staff accommodation and testing facilities on the site will be required to be established in specified areas (outside of Sensitive Vegetation) and in a manner that does not adversely affect the environment and must avoid all identified sensitive areas.

Camps, offices, workshops, staff accommodation and testing facilities shall be maintained in an orderly and tidy condition.

Immediately after completion of the contract, all constructional plant, buildings, fencing and other temporary structures shall be removed, and these areas rehabilitated.

6.1.2 Cooking fuel

The Contractor shall provide adequate facilities for his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings, if necessary due to staff on site overnight (e.g. security). The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.



storage time. For short term stockpiling (for 1-2 months), temporary erosion measures must be implemented, by securely covering the material (e.g. using a perforated tarpaulin or hessian). If stockpiles stand for between 3 to 6 months, a cover of suitable grass must be established around the slopes to reduce the effects of erosion washes.

- The Contractor must ensure that no topsoil is lost due to erosion – either by wind or water. Areas to be topsoiled and grassed must be done so systematically to allow for quick cover and reduction in the chance of heavy topsoil losses due to unusual weather patterns. Attention is drawn to the fact that unusually high rainfall events occur frequently in the area. The Contractor's programme must clearly show the proposed rate of progress of the application of topsoil and grassing. The Contractor must be held responsible for the replacement, at his own cost, for any unnecessary loss of topsoil due to his failure to work according to the progress plan approved by the Engineer and ECO. The Contractor's responsibility must also extend to the clearing of drainage or water systems within and beyond the boundaries of the activity that may have been affected by such negligence.
- Stockpiles must be monitored at weekly intervals to identify invasive plants, which must be removed when they germinate, to prevent contamination of the seed bank. Stockpiles must not be covered with materials such as plastic that may cause it to compost, or kill any seeds. Before indigenous vegetation clearing or soil removal for stockpiling begins, the Contractor must remove alien invasive weeds present within the mining area.
- Topsoil must not be compacted in any way, especially by vehicles riding over it. Where it is essential to drive a vehicle over the topsoil (once it has been re-spread), as approved by the Engineer, the contact pressure must not be greater than 1500kg/m².
- Soils contaminated by hazardous substances must be disposed of at an approved waste disposal site.

6.1.6 Natural vegetation

The impact of mining on vegetation will largely be mitigated during the rehabilitation phase. Management measures for the reestablishment of vegetation are provided in Section 7

- The extent of surface disturbance at the borrow pits will be minimised as far as possible.
- Open fires will not be permitted outside of designated areas.

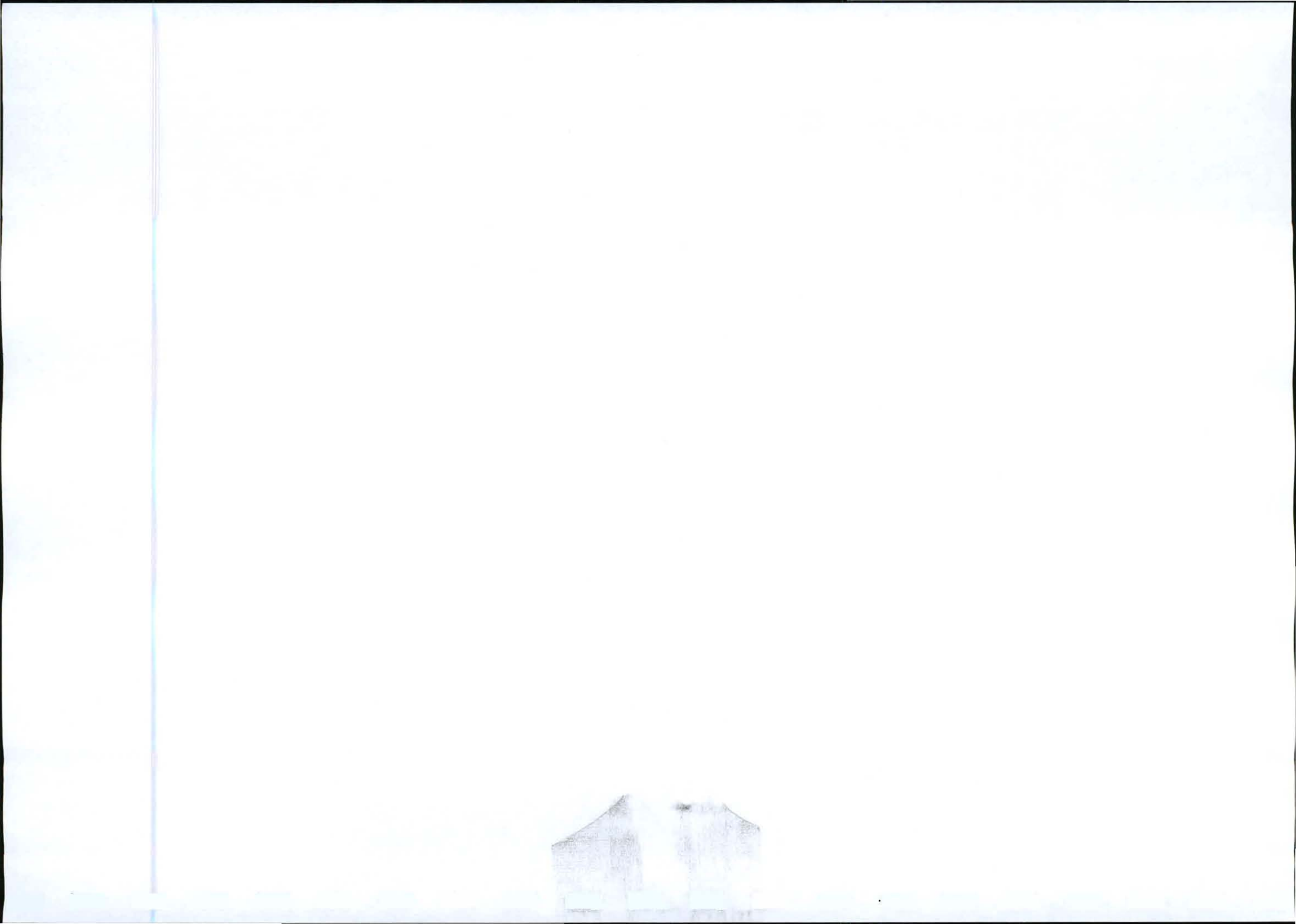
6.1.7 Animal life

- Animal habitat will be re-established with the rehabilitation and closure of the sites.
- Poaching or hunting of indigenous fauna to be strictly prohibited.

6.1.8 Surface water

The impact of contaminated stormwater runoff on downstream water bodies will be controlled as follows:

- Stormwater diversion berms, >750mm high, will be excavated upslope of the borrow pit sites. This will divert "clean" runoff away from the area of activity. The slope of the



diversion berm will not exceed 1%. Energy dissipaters will be provided at the spill areas. These are indicated on the plans, and will consist of packed rocks of varying sizes which will interlock to form a permeable, but stable barrier to stormwater runoff directed along the diversion berms.

- A containment berm of the same dimensions will be constructed below the area of operation, effectively diverting all stormwater runoff generated within the borrow pit into a settlement dam (see Appendix A for details). The settlement dam will be sized to contain runoff from the borrow area during heavy rainfall events.
- Berms and settlement dams will remain in place after closure and will only be removed once the DME have issued a closure certificate.

6.1.9 Historical and archaeological sites

SAHRA must be contacted immediately should any noticeable concentration of heritage resources be discovered during the course of the activity.

If an artifact on site is uncovered, work in the immediate vicinity must be stopped immediately. The Contractor must take reasonable precautions to prevent any person from removing or damaging any such article and must immediately inform the ECO of such discovery. The South African Heritage Resources Agency (SAHRA) or the National Monuments Council must be contacted such that an archaeological/heritage resources consultant can be appointed to record the site and excavate if necessary. Work may only resume once clearance is given in writing by an archaeologist

6.1.10 Dust control

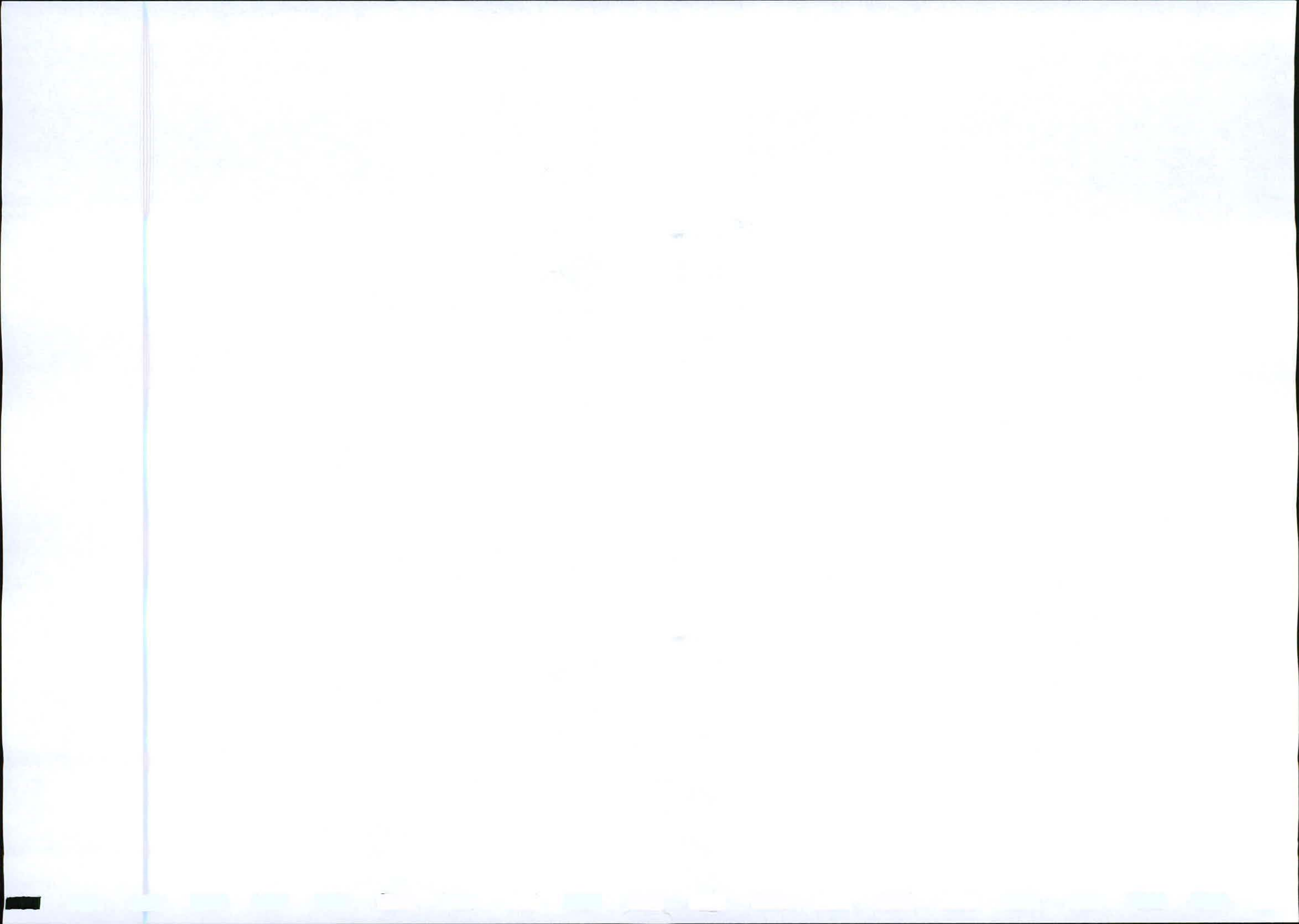
- Dust caused by strong winds must be controlled by means of water spray vehicles, or any other appropriate means as approved by the ECO.
- Dust that may be generated during mining from stockpiled, excavated material must be dampened to minimize dust until such time that this material has been utilized during the rehabilitation process or that it can be removed and disposed of.

Appropriate dust-suppression techniques (e.g. the use of water spray vehicles) must be employed on all exposed surfaces during periods of high wind. Potential methods include:

- Remove only limited vegetation to accommodate mining activities.
- Spray unpaved roads and mining areas, including stockpiles and spoil, with water routinely throughout mining to contain dust.
- Implement traffic control measures to limit vehicle entrained dust from unpaved roads (e.g. by limiting mining vehicle speeds and by restricting traffic volumes).
- Vehicles emitting black smoke and fumes must be repaired and maintained.
- No burning of waste material must be allowed.

6.1.11 Noise impact

- Mining will only take place during normal working hours (8:00-17:00).
- The use of protective hearing devices by machine operators will be enforced.



6.1.12 Visual impact

- Borrow pit site preparation and the establishment of ablution facilities to take place within designated areas.
- Visual impacts will be largely mitigated upon closure and rehabilitation of the sites as described under Section 6 and 7.

6.1.13 Socio- economic

- Where possible, local labour must be employed during construction and operation. This will form part of the contractual agreement between the appointed contractor and the Department of Roads and Transport. Emphasis to be placed on historically disadvantaged groups, women, youths and the disabled.
- Local service providers and suppliers (e.g. fuel suppliers) will be used wherever possible.

6.1.14 Toilets

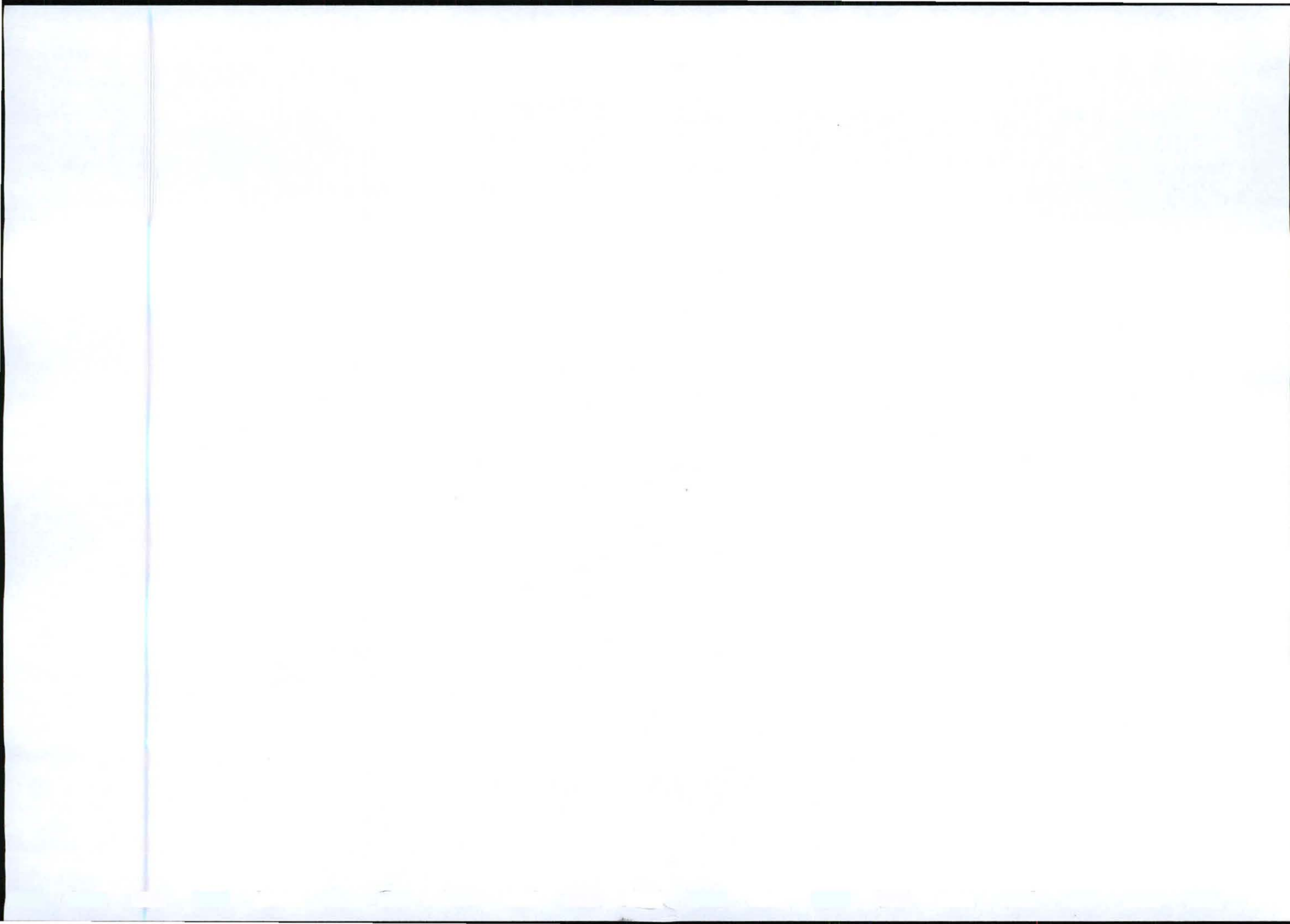
- The contractor must provide the necessary ablution facilities for all his employees. These must be easily accessible, transportable, and there should be a minimum of 1 toilet per 15 persons.
- The toilets should be secured, and be provided with an external closing mechanism to prevent toilet paper from being blown out.
- A rented chemical toilet must be used, and the rental company will be responsible for emptying the toilet, which must be done on a daily basis. Sewerage must not be disposed of in watercourses, streams or rivers

6.1.15 Interested and Affected Parties

- Construction vehicles will maintain a safe speed limit at all times.
- A project steering committee will be established
- A full time independent Environmental Control Officer will be appointed. The function of the ECO will be to undertake regular inspections of the operations, and to report back on the progress in environmental management to the DME and DEDEA.
- A Community Liaison Officer will be appointed by the Contractor.
- A complaints register will be established and maintained.
- Access to land will be cleared with landowners and communities well in advance of construction.
- Construction personnel to respect private property.

6.1.16 Water for human consumption

Water for human consumption must be available at the site offices and at other convenient locations on site.



6.1.17 Protection of natural resources

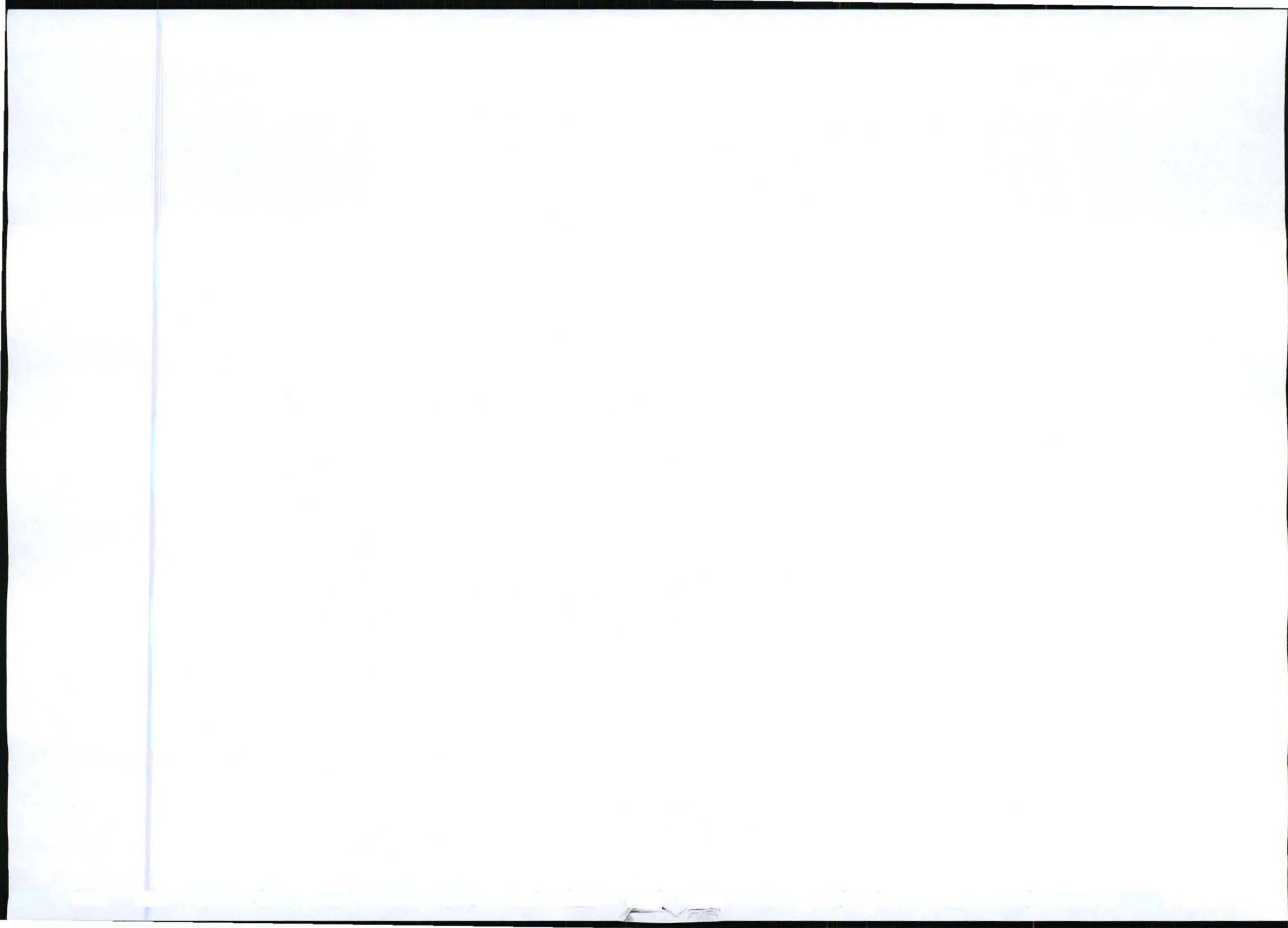
- Where applicable all indigenous fauna and flora must be protected. Wild animals must not be disturbed, caught or injured by any means. In terms of the Game Theft Act No. 105 of 1991, which regulates ownership of game, theft and unlawful hunting, catching and taking possession of game is illegal and punishable by law.
- Defacement of natural features or environmental damage outside of the demarcated site must not occur.
- No fires must be lit by the Contractor and employees anywhere on property, or on private land without the consent of the landowner. If the fires are lit on the property or in the mining camp, provision must be made that no accidental fires are started. No firewood may be collected in the veld.
- Defacement of natural features or environmental damage outside of the demarcated site must not occur.

6.1.18 Waste management

- General waste produced on site should be stored in a lidded container to prevent spread of waste to neighbouring areas. These containers should be emptied at least weekly and waste should be disposed of at a registered waste disposal facility.
- The contractor must institute an on-site waste management system in order to prevent the spread of refuse within and beyond the site. Refuse refers to all solid waste, including mining debris (wrapping materials, timber, cans etc.), food packaging, cement, rubble and other mining materials, etc.
- All waste must be collected and contained immediately. No waste from construction or operations may be disposed of on site. All waste generated on site, must be removed from the site and disposed of at a registered disposal site. In this regard, adequate litter drums or other suitable containers must be located on site to ensure that waste generated on site is disposed of in a suitable and timeous manner.
- Waste bins must be used, and these must be provided with lids and external closing mechanisms to be scavenger proof and to prevent their contents blowing out.
- The Contractor must ensure that his employees deposit all waste in the waste bins. Bins must not be used for any other purposes than waste collection and must be emptied on a regular basis.
- Hazardous waste such as vehicle batteries, used oil should be stored in tamper proof containers and should be disposed of at the closest hazardous waste disposal site which is the Aloes II Hazardous Waste Disposal site on a weekly basis.

6.1.19 Servicing/fuelling of mining equipment

- Servicing and fuelling should preferably occur off-site. If these activities occur on-site, the Contractor must ensure that it takes place in designated areas. All waste generated during these activities must be collected and disposed off at an appropriate off site facility capable of handling such waste.
- All equipment that leaks must be repaired immediately. In the case of changing oil or lubricants on-site, the Contractor must have Drizit pads (or equivalent) and/or drip trays available to collect any oil, fluid, etc.
- The Contractor must take all reasonable precautions to prevent the pollution of the ground and/or water resources by fuels and chemicals as a result of his/her activities. No oil, diesel, petrol, etc., must be discharged onto the ground.



- Pumps and other machinery requiring oil, diesel, petrol, etc. that is to remain in one position for longer than two days must be placed on drip trays.
- The drip trays must be emptied regularly and the contaminated water disposed of off site at a facility capable of handling such waste water. Drip trays must be cleaned before weekends and holidays and before any possible rain events that may result in the drip trays overflowing.
- The Contractor must remove all oil-, petrol- and diesel-soaked sand immediately and must dispose of it as hazardous waste.
- Tanks containing fuel must have lids and must remain firmly shut.
- Fuel stores must be placed on a bunded seal base, and waste water or spilled fuel collected within the bund must be disposed of as hazardous waste. Only clean, empty tanks may be stored on the ground.
- The Contractor must take the necessary precautions to prevent fires or spills at the fuel stores.
- No smoking or other activities that can initiate fires must be allowed in the vicinity of the stores.
- Any hazardous waste substances must be disposed of off-site at a licensed landfill site.

6.1.20 Safety

- The Contractor must ensure that all mining vehicles using public roads are in a roadworthy condition, they adhere to speed limits, and their loads are secured and that all other regulations are adhered to.

6.1.21 Environmental Control Officer

The ECO must be appropriately trained in environmental management and must possess the skills necessary to impart environmental management skills to all personnel involved in the contract.

6.1.22 Environmental Awareness course

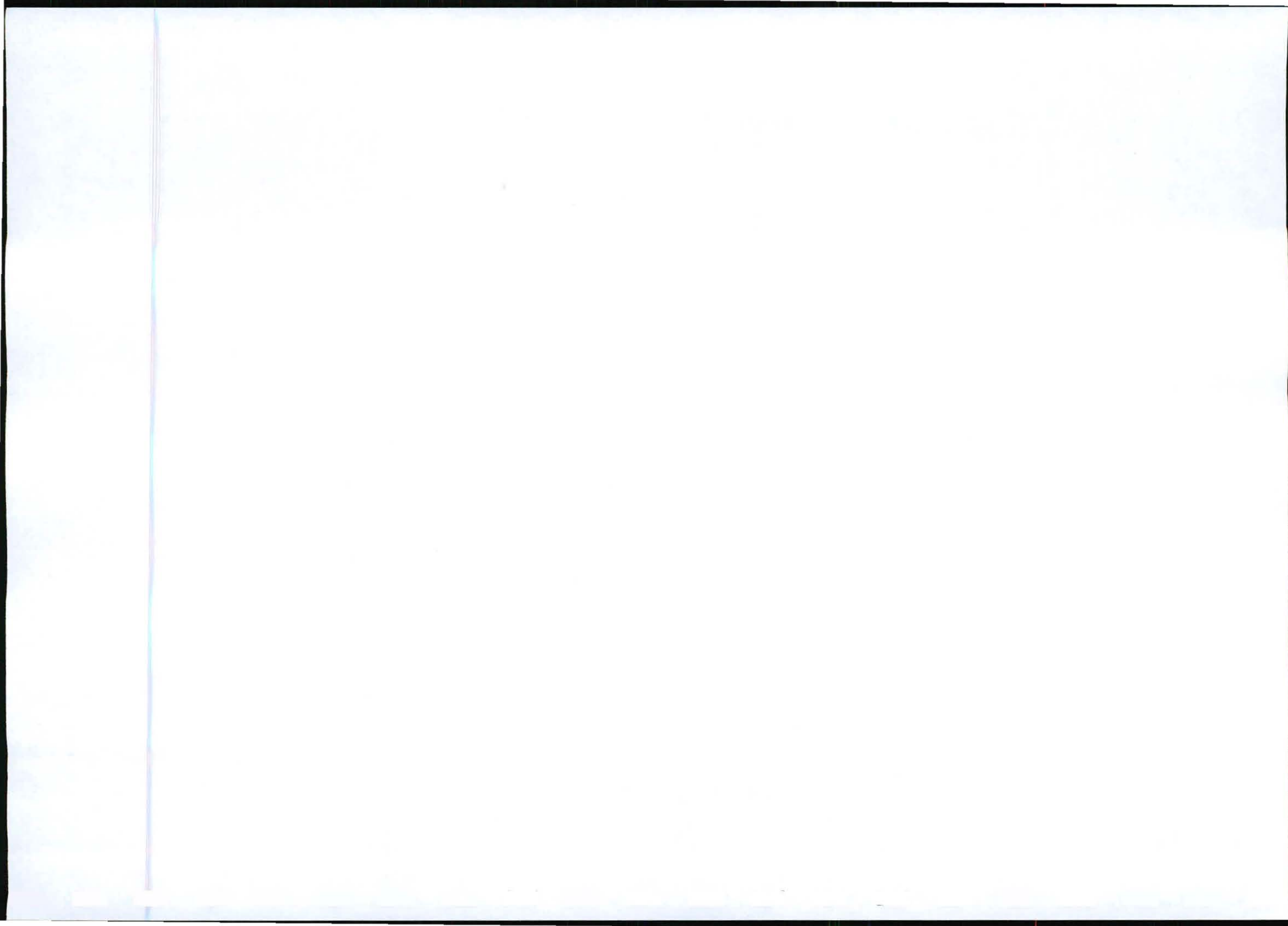
Contractors must ensure that its employees and any third party who carries out all or part of the Contractor's obligations are adequately trained with regard to the implementation of the EMP, as well as regarding environmental legal requirements and obligations. Training must be conducted by the ECO where necessary.

Environment and health awareness training programmes should be targeted at three distinct levels of employment, i.e. the executive, middle management and labour. Environmental awareness training programmes must contain the following information:

- The names, positions and responsibilities of personnel to be trained.
- The framework for appropriate training plans.
- The summarised content of each training course.
- A schedule for the presentation of the training courses.

The ECO must ensure that records of all training interventions are kept in accordance with the record keeping and documentation control requirements as set out in this EMP. The training records must verify each of the targeted personnel's training experience.

The Proponent must ensure that adequate environmental training takes place. All employees must have been given an induction presentation on environmental awareness and the content of the EMP. The presentation needs to be conducted in the language of the



employees to ensure it is understood. The environmental training must, as a minimum, include the following:

- The importance of conformance with all environmental policies.
- The environmental impacts, actual or potential, of their work activities.
- The environmental benefits of improved personal performance.
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the Agency's environmental management systems, including emergency preparedness and response requirements.
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.
- Environmental legal requirements and obligations.
- Details regarding floral/faunal species of special concern and protected species, and the procedures to be followed should these be encountered during the mining of the bridge, main access roads, approach roads or mining camps.
- The importance of not littering.
- The importance of using supplied toilet facilities.
- The need to use water sparingly.
- Details of and encouragement to minimise the production of waste and re-use, recover and recycle waste where possible.
- Details regarding archaeological and/or historical sites which may be unearthed during mining and the procedures to be followed should these be encountered.

6.1.23 Emergency preparedness

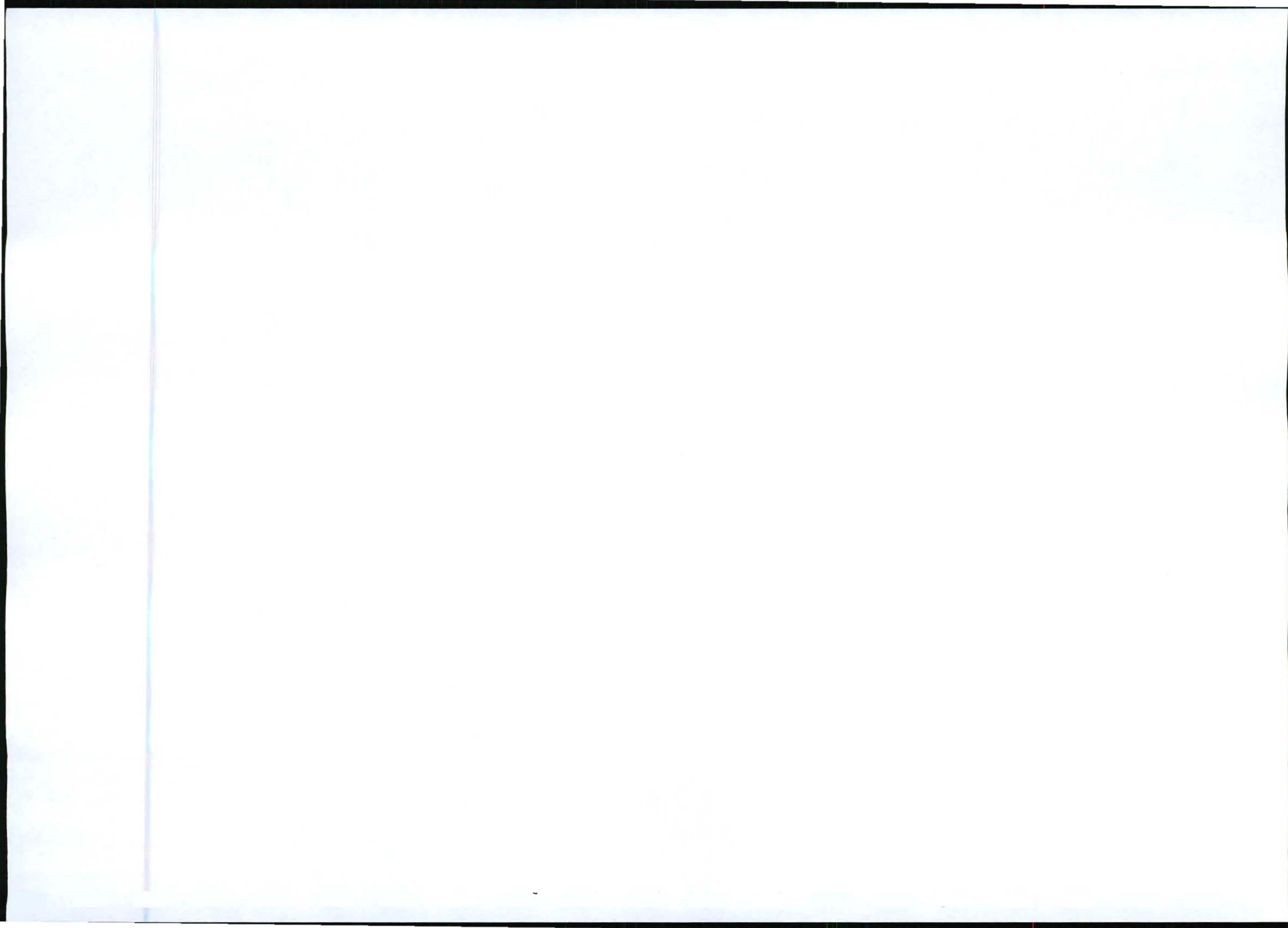
The Contractor must maintain environmental emergency procedures to ensure that there will be an appropriate response to unexpected or accidental actions or incidents that will cause environmental impacts, throughout the mining period. Such activities may include, *inter alia*:

- Accidental discharges to water and land.
- Accidental exposure of employees to hazardous substances.
- Accidental veld or forest fires.
- Accidental spillage of hazardous substances.
- Accidental toxic emissions into the air
- Specific environmental and ecosystem effects from accidental releases or incidents.

These plans must include:

- Emergency organisation (manpower) and responsibilities, accountability and liability.
- A list of key personnel and contact details.
- Details of emergency services available (e.g. the fire department, spill clean-up services, etc.).
- Internal and external communication plans, including prescribed reporting procedures where required by legislation.
- Actions to be taken in the event of different types of emergencies.
- Incident recording, progress reporting and remediation measures required to be implemented.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.
- Training plans, testing exercises and schedules for effectiveness.

The Contractor must comply with the emergency preparedness and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the NEMA, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36



of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended and/or any other relevant legislation.

6.2 Operational phase

6.2.1 Geology

(See section 6.1: Construction phase)

6.2.2 Topography

(See section 6.1: Construction phase)

6.2.3 Soils and erosion

(See section 6.1: Construction phase)

6.2.4 Land capability

The impact on post-closure land capability will be mitigated by implementing a sound rehabilitation and aftercare programme in consultation with the landowner / users.

6.2.5 Natural vegetation

(See section 6.1: Construction phase)

6.2.6 Animal life

(See section 6.1: Construction phase)

6.2.7 Surface water

There will be no servicing of vehicles on the sites. Refuelling and emergency repairs of machinery on site will be undertaken according to the Environmental Specifications.

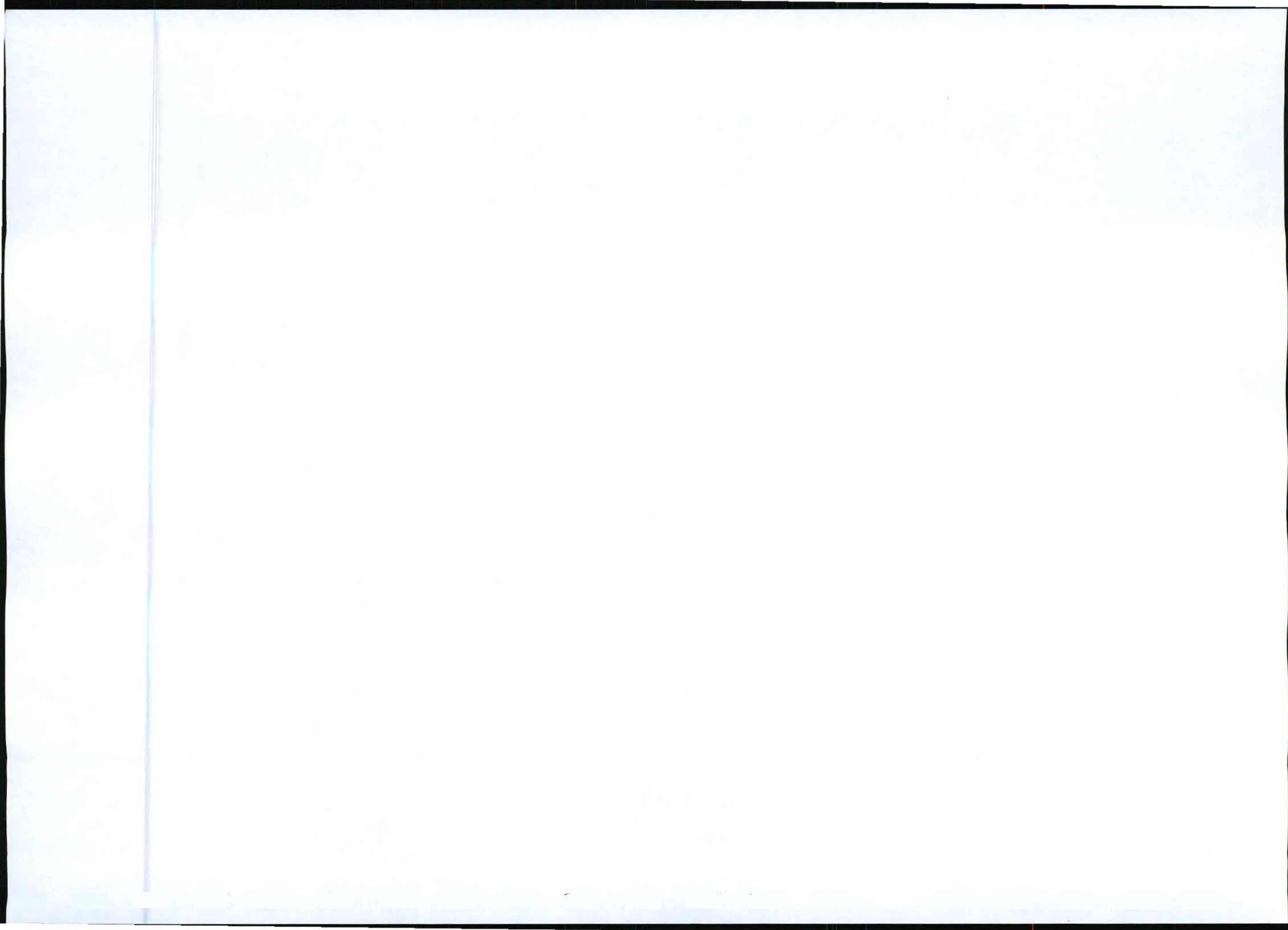
6.2.8 Groundwater

The potential for groundwater contamination, however slight, is to be minimised by applying the measures described above.

6.2.9 Air quality

The air quality will be influenced by the excavating, loading and transporting of material and by the crushing or rock and stockpiling of material.

- Dust suppression will be carried out by methods described in Section 6.1.10.
- A temporary water abstraction permit must be applied for from the Department of Water Affairs and Forestry prior to the abstraction of water from any streams, dams or groundwater sources.
- Personnel to be issued with dust masks.



6.2.10 Noise impact

The use of heavy machinery at the crusher and borrowpit sites will have an impact on the noise levels in the area. The personnel on site are those that will be affected the most.

- Mining will only take place during normal working hours.
- The use of protective hearing devices by machine operators will be enforced in terms of occupational health and safety standards.
- A mobile crusher will be used on site and will move from the entrance of the site towards to mining area.

6.2.11 Socio-economic impact

(See section 6.1: Construction phase)

6.2.12 I&APS

(See section 6.1: Construction phase)

6.3 Decommissioning phase

6.3.1 Closure objectives

To minimise, as far as possible, the residual impacts. These may relate to aesthetics, stability of the slopes, and control of erosion and safety of the surrounding communities.

6.3.2 Stockpile erasure

The stockpile areas at borrowpits will be leveled and blended in with the natural landscape, scarified, topsoiled and vegetated.

6.3.3 Settling ponds and dissipation beds

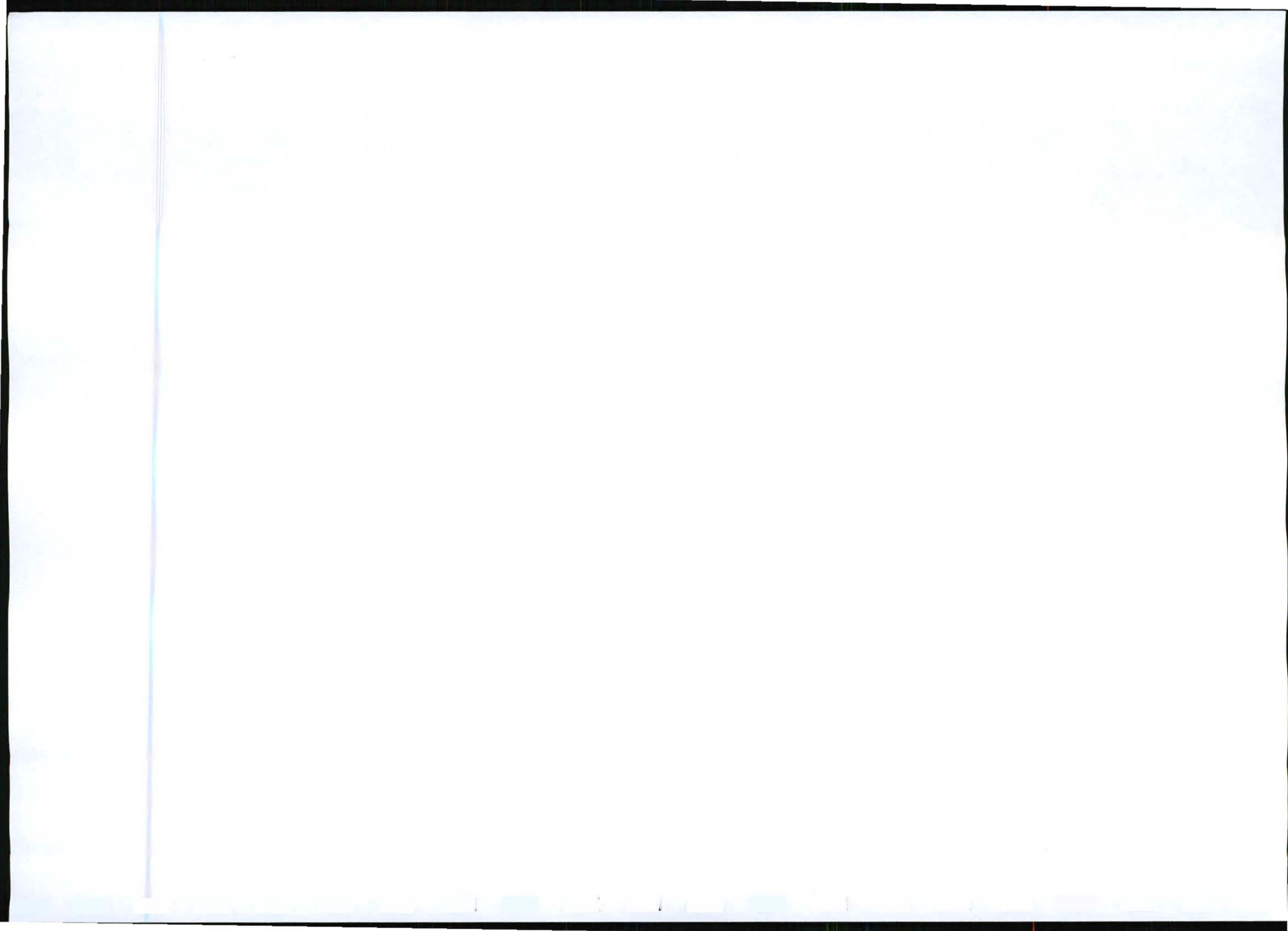
The settlement ponds, diversion berms and dissipation beds will be retained, at least until vegetation cover has become re-established until the DME have issued the final closure certificate.

6.3.4 Diversion berms

Diversion berms and dissipation beds will be retained to prevent stormwater ingress into the pits. These will only be removed once the DME has issued a closure certificate.

6.3.5 Machinery/plant removal

All machinery and construction plant will be removed from the site. This will include any debris and waste material left by personnel.



6.3.6 Removal of infrastructure

All structures will be dismantled or demolished and removed from site. These areas should be revegetated.

6.3.7 Fencing and access gate

The fencing and access gates will be removed only once the DME have issued a closure certificate.

6.3.8 Access road

All access roads no longer required will be ripped and reseeded and appropriate erosion control measures put in place.

6.3.9 Topsoil

Stockpiled topsoil will be spread across the denuded areas of the site.

- Topsoil will not be placed directly on rock or oversized material. A stockpile of decomposed material to be retained for use as a base to topsoil in these instances.

6.3.10 Seeding

- The topsoiled areas shall be scarified and seeded with a suitable, indigenous vegetation mix. The Department of Agriculture's local extension officer for the area shall be consulted regarding the grass mix to be used.
- Hydroseeding will take place at the beginning of the wet season.
- Should the seeding prove to be unsuccessful, then the procedure will be repeated at the beginning of the next wet season.
- Measures will be taken to ensure that alien invaders do not become established on the site.

6.3.11 Mine residue deposits

- Oversized material, overburden and other residual or reject material is to be returned to the pit and shaped against the base of the excavation during rehabilitation.
- Mining has taken place at most of the mining areas and in most cases have not been rehabilitated accordingly.

It is inevitable under these circumstances that the Environmental Management Programme for the proposed operations by the new owner also has to take cognisance of and incorporate the legacy of past impacts. Moreover, mitigating measures for impacts associated with the decommissioning phase as well as residual impacts after closure will also have to be dealt with.

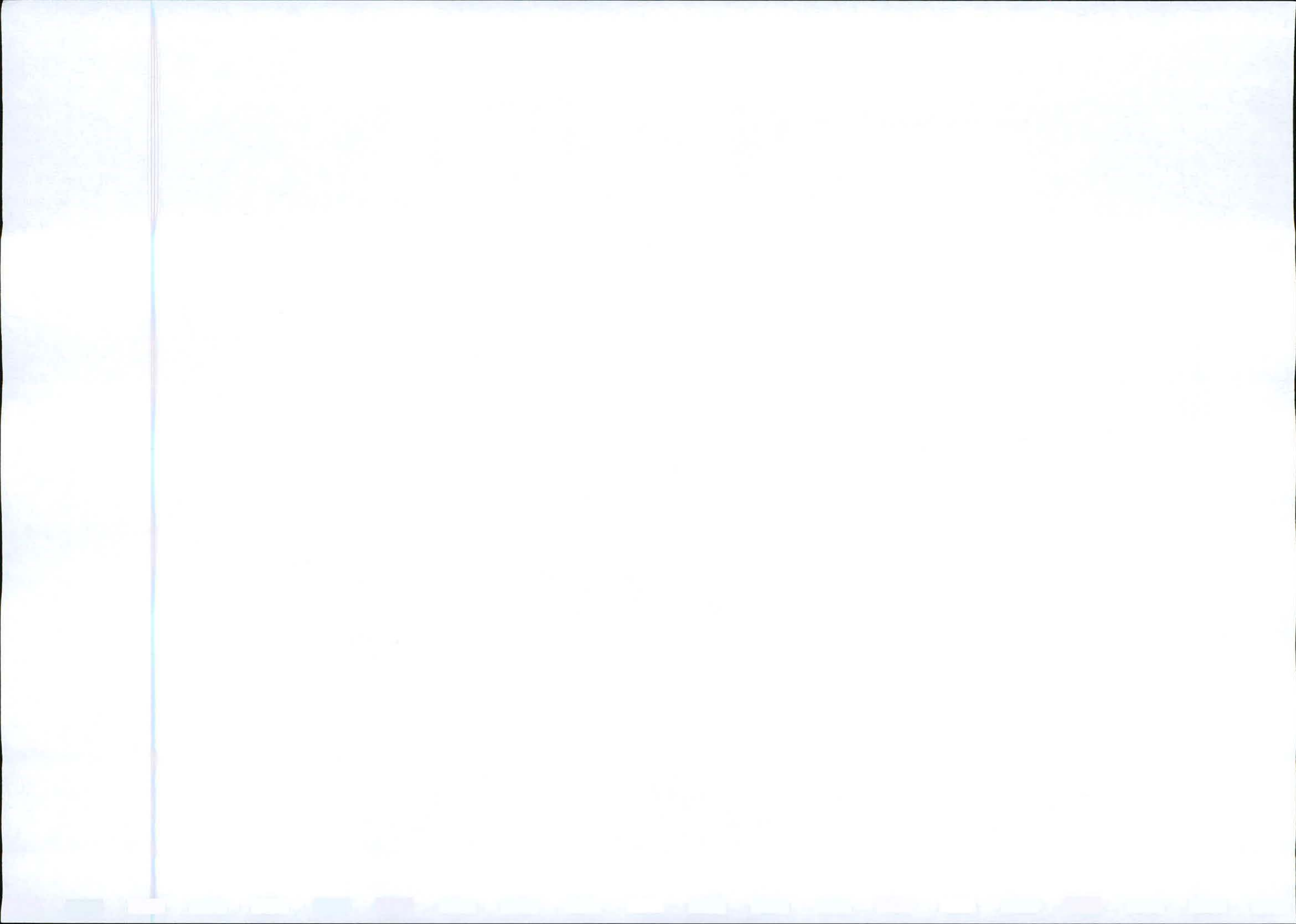
6.3.12 Maintenance and monitoring

An Environmental Control Officer will be appointed to ensure implementation of the specifications set out in this document and any other environmental specifications



from other authorities. Any specifications identified by the DME will also be included as part of the audits to be conducted.

Audits will be conducted on a monthly basis and the audit reports will be submitted to the relevant authorities.



7 REHABILITATION PLAN

After mining has taken place a mining rehabilitation plan needs to be implemented.

In all the jurisdictions in which the company operates, it is required to conduct closure and rehabilitation activities to return the land to a productive state once mining has been completed. Additionally, the company is required to provide financial assurance, in a form prescribed by law, to cover some or all of the costs of the anticipated closure and rehabilitation costs for the operation.

Rehabilitation refers to the process of reclaiming mined land to the condition that existed prior to mining or to a pre-determined post-mining use. Closure plans are devised prior to the commencement of operation and are regularly reviewed to take into account life-of-mine projections. Although the final cost of closure cannot be fully determined ahead of closure, appropriate provision is made during the mine's economic operation.

Rehabilitation should include all areas on the mining area and associated roads that were constructed for the use of this road.

7.1 Proposed rehabilitation methodology

Rehabilitation of disturbed and heavily impacted environments is closely linked to ecological successional theory. Succession can be described as a change of species, or patterns of species abundance, over time. Directional, continuous and sequential patterns of colonisation by various species are indicators of successional stages of a particular environment.

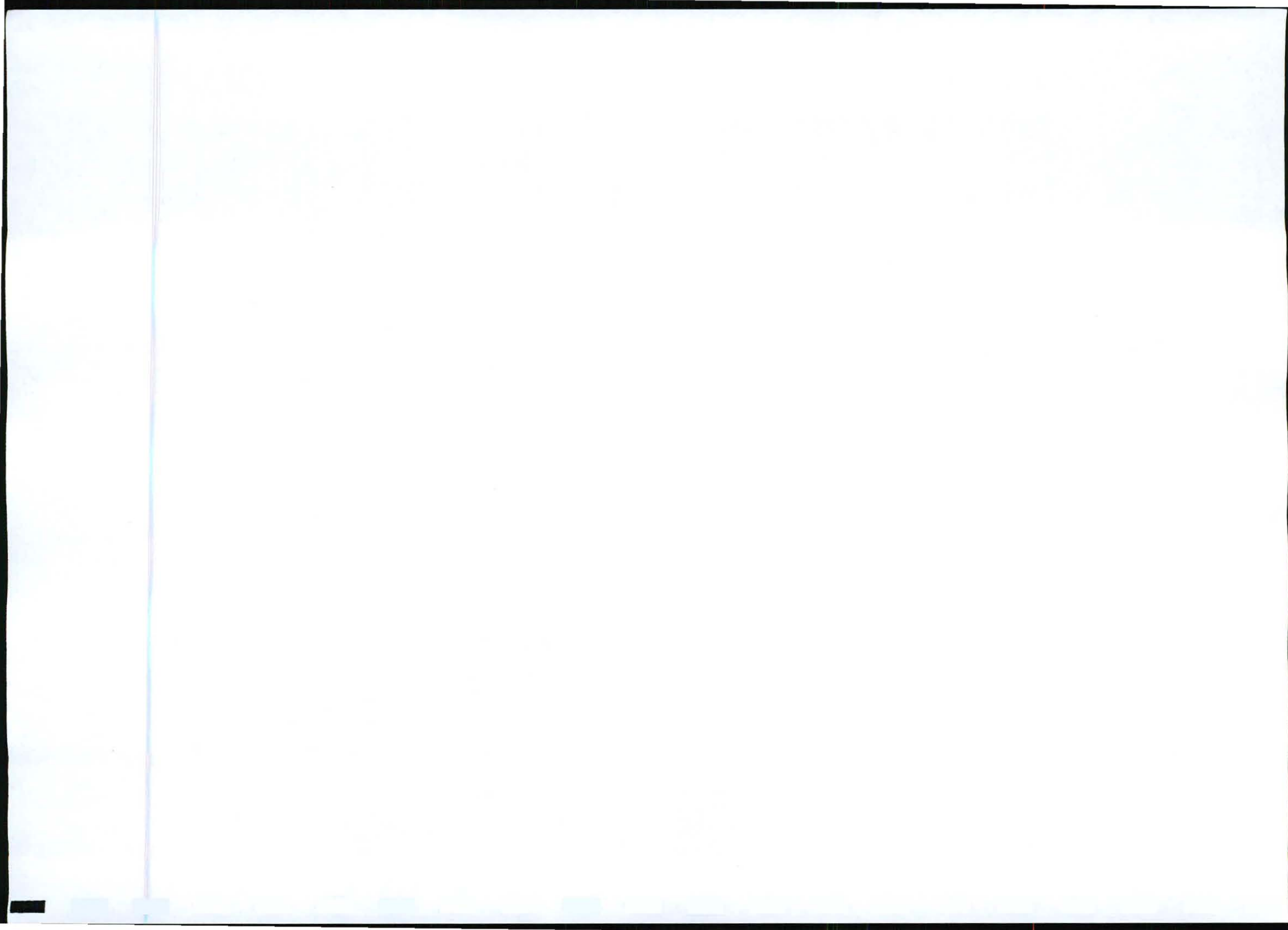
The first sequence of succession (e.g. after a disturbance, which in this case would be the mining) is the initial colonisation of an area of fast-growing, aggressive pioneering species, which in the case of plants are often short-lived, perennial species. These plant species are responsible for changing soil properties and creating micro-niches for further colonisation.

This initial sequence of pioneer species is then followed by early and late successional species migrating into the area over time, resulting in a climax community. The concept of a climax community is better explained as a natural equilibrium that is reached, which strikes the balance between minor disturbance events and regeneration.

The time taken to reach a climax community is dependant on many biotic and abiotic factors, which make predicting the time scale of reaching a stable climax population/community impossible. In addition, plant successions effect and are affected by faunal populations, and faunal components may contribute towards the rate of plant community succession.

When considering the rehabilitation of an environment that has been damaged, the 4 R approach is often employed and include:

- **Restoration**
- **Rehabilitation**



- **Replacement or re-vegetation**
- **Reservation (Conservation)**

Methods to reclaim, restore or rehabilitate areas are suggested in the body of this report, but it is important to note that these activities frequently begin with soil remediation, which may be required in specific cases. Soil remediation includes activities such as improvements to soil stabilisation, soil structure and soil fertility.

The success of rehabilitating the community/population within a designated area is dependent on the satisfactory establishment of the chosen plant species. To ensure that the process is optimised, the correct plant species in the correct densities and combinations should be utilised. Monitoring of the rehabilitation process is imperative to ensure that aggressive plant species and herbivores are controlled and slopes/banks remain stable.

In summary, the following phases required for site rehabilitation need to be completed:

1. Bank/soil stabilisation and/or removal of alien plant species
2. Remediate soil (composition, ph, nutrients, etc.), ensure soil is stabilised (through planting or physical structures)
3. Re-vegetate using appropriate natural successional species.
4. Monitor: removal of aggressive indigenous plant, follow up on alien invasive plant species, successful establishment of re-vegetated areas.

The site has historically been impacted by mining and significant erosion. In addition, the continued disturbance has given alien invasive plant species the opportunity to colonise impacted areas.

7.1.1 Specific Rehabilitation Objectives

Alien invasive plant species and recommended removal plan

The difficulty with maintaining a rehabilitated site is the requirement of continued effort over long time periods. In addition, the possibility of alien colonisation is always high due to upstream dispersal of seedbanks along drainage courses. Therefore vegetation rehabilitation must take the form of a commitment to constantly remove alien invasive plant species and regularly plant appropriate indigenous species.

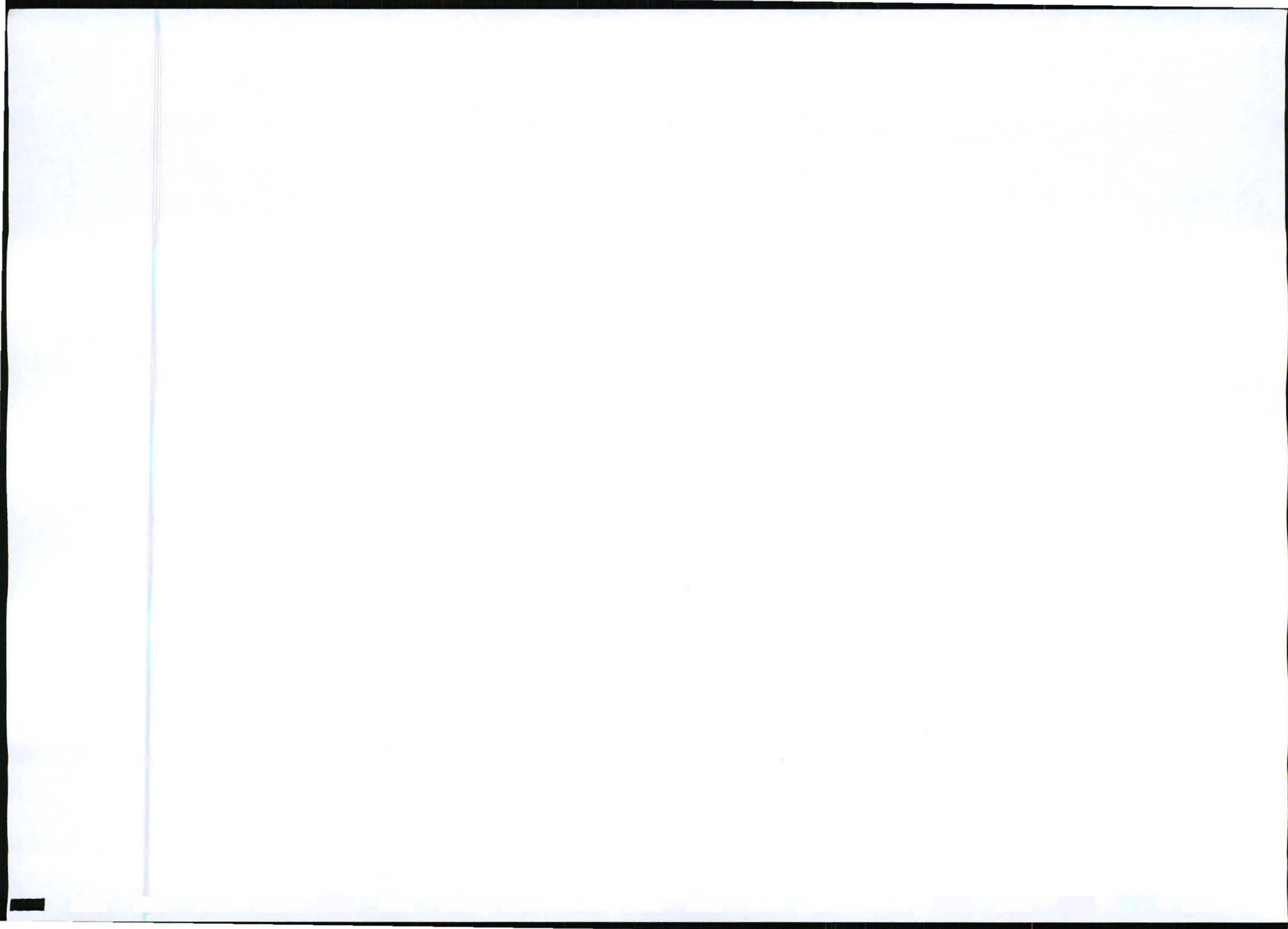
The following must be considered when removing the alien invasive vegetation:

Bull-dozing is not an appropriate method of removing trees; the trees must be cut down individually.

Where possible an attempt to protect indigenous plant/tree species must be made as this will ensure a more rapid stabilisation and recovery of the vegetation.

The **indigenous trees and bulbs** that are removed must be transported to an appropriate site and burnt to prevent further dispersal of seeds.

It is important to note that the entire site cannot be cleared at the same time and should be staggered over a period of a few months. **Clearing large areas of land can result in extensive environmental damage, rendering the remaining soil vulnerable to destabilisation and erosion.**



Follow-up control

Follow-up of the cleared areas will need to continue for at least a year after mining. Every two months after the mining has completed, follow-up visits to the site must be done. Methods used during follow-up operations include: mechanical pulling and felling of seedlings and foliar sprays of stands of seedlings, root suckers or coppice growth.

Follow-up requirements:

The follow-up treatments in the cleared site will need to be performed every two months.

The fundamental hypothesis adopted is that natural self-sustaining ecosystems can be recreated by growing the appropriate selection of many different species following a successional logic.

In order to establish a sustainable indigenous vegetation cover it is necessary to:

- Establish a cover crop of pioneering, fast-growing plant species or physical structure to stabilise the sand/soil after vegetation removal
- Establish secondary pioneer species (early successional species) to provide shade, habitats for insects and birds, etc.
- Establish late successional species, namely trees, herbs and lianas which make up the compliment of the natural ecosystem.

Thus, provide the necessary habitat and ecosystem for the potential for other biota to colonise.

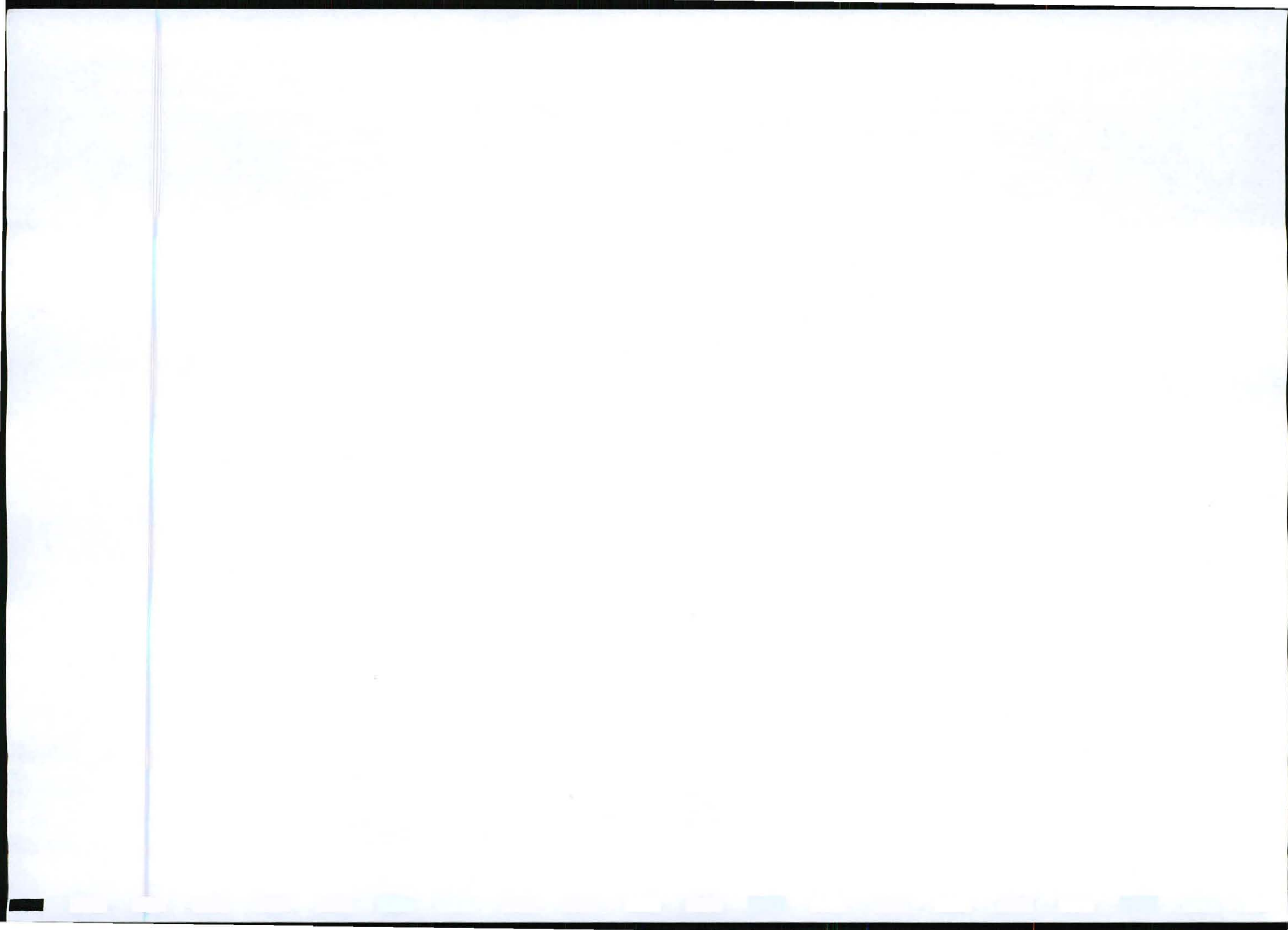
The first phase of rehabilitation will involve soil remediation and in some cases, replacement of topsoil, such that the establishment of a cover crop will be successful.



8 FINANCIAL PROVISION

In terms of section 41 of the Mineral and Petroleum Resources Development Act the applicant has to make financial provision for the rehabilitation or management of negative environmental impacts.

The Department of Roads and Transport will retain money as stated in the signed letter from the Department. The letter from DRT can be found as Appendix D.



9 MOTIVATION FOR PROPOSED PROJECT

9.1 Benefits of the Project

The MR453 has become geometrically inadequate to effectively carry the current traffic on this facility. The road is extensively used by heavy carrier vehicles transporting motor vehicles from Uitenhage to the Western Cape. As such, there are no climbing lanes, it is too narrow, and the existing design speeds are sub-standard.

In addition the road has suffered extensive plastic deformation and loss of shape in numerous areas.

Rehabilitation and improvement of the road is therefore necessary to address both geometric and geotechnical issues.

The borrow pits will provide essential road building material for the upgrade of the MR453. The motivation for the use of these borrow pits is therefore inextricably linked to that of the road upgrade in general.

9.1.1 Safety

The existing road currently comprise of extensive plastic deformation and loss of shape in numerous areas. The proposed upgrade will improve the geometric layout of the road, which will improve the road in terms of traffic safety.

9.2 Consideration of project alternatives

9.2.1 Mining method and mineral sources

(a) Mineral sources

A number of additional sources in the area has been tested but have proven to be unsuccessful due to the types and quantity of material needed. Commercial sourcing for G1 base has been decided on as this material is not available at any of the sites. No other alternative materials sources have been identified.

The borrow pit investigation has confirmed that there is sufficient material available from the identified borrow pits for use on the access roads and deviations.

(b) Mining methods

There are no feasible alternatives to the proposed method of open cast mining.

9.2.2 Mineral processing plant

A single stage mobile crusher will be used on site.



9.2.3 Transport, power and water supply routes

No power will be supplied to the borrow pits. Transport to the sites will be via existing tracks and access roads. Water for domestic consumption will be brought on site daily. No alternatives to the above services are identified.

9.2.4 Sources of water

No process water will be required. Water for domestic consumption will be brought on site daily. Domestic water will be supplied from the construction camp drawn from an approved source. No alternative sources are identified.

9.2.5 Mine infrastructure

Other than fencing, there will be no other mine infrastructure provided. The fencing will consist of a typical stock fence. No alternative fencing type is proposed.

9.2.6 Mine residue disposal sites

Other than minor quantities of overburden, no mine residue is expected. Overburden will be stockpiled and site and returned to the borrowpit excavations during rehabilitation.

9.2.7 Housing sites

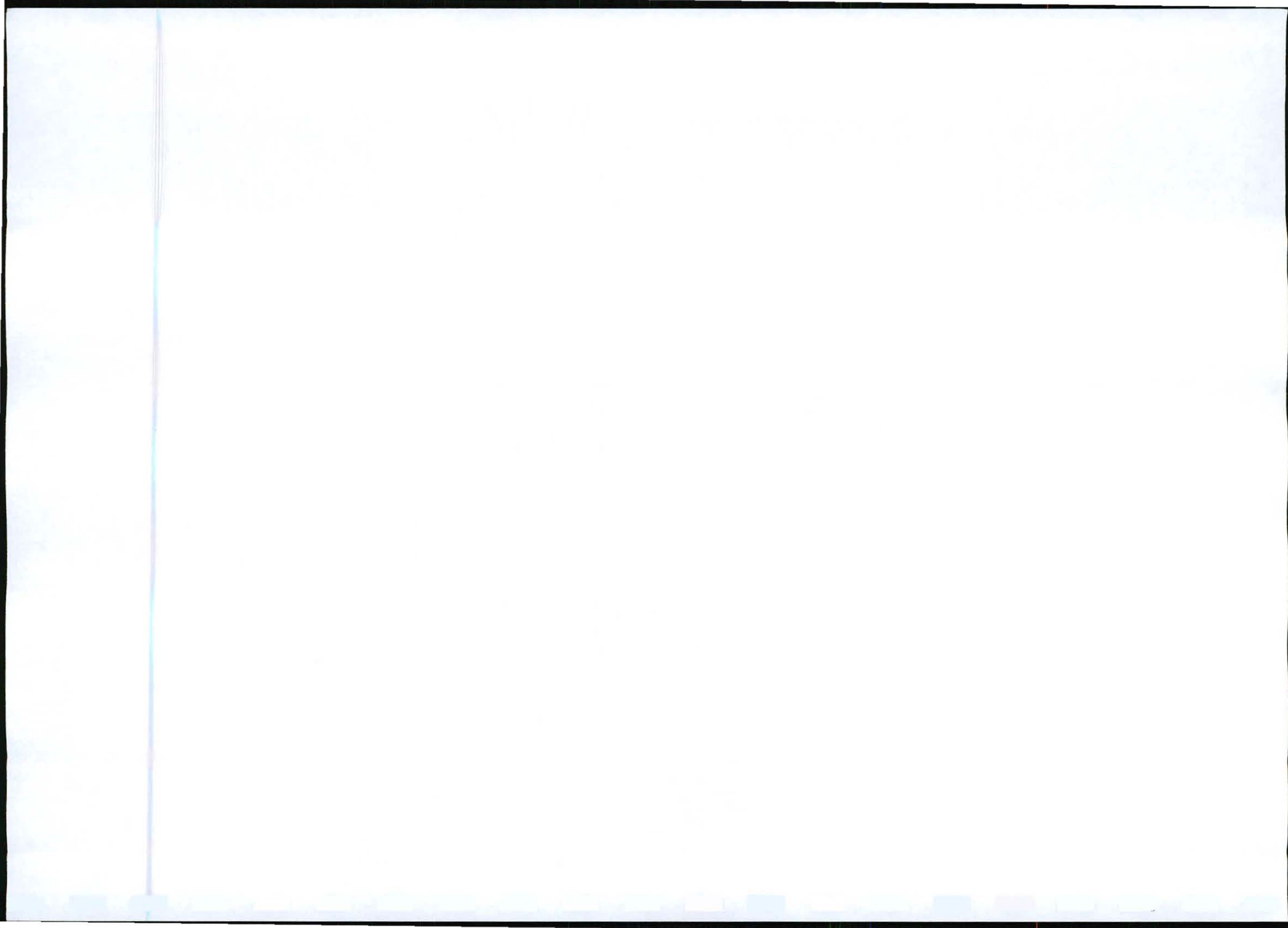
No housing will be provided on site.

9.2.8 Land use options after rehabilitation

It is proposed that the borrow pits be returned to their former land use following rehabilitation. No alternative post mining land uses are considered relevant.

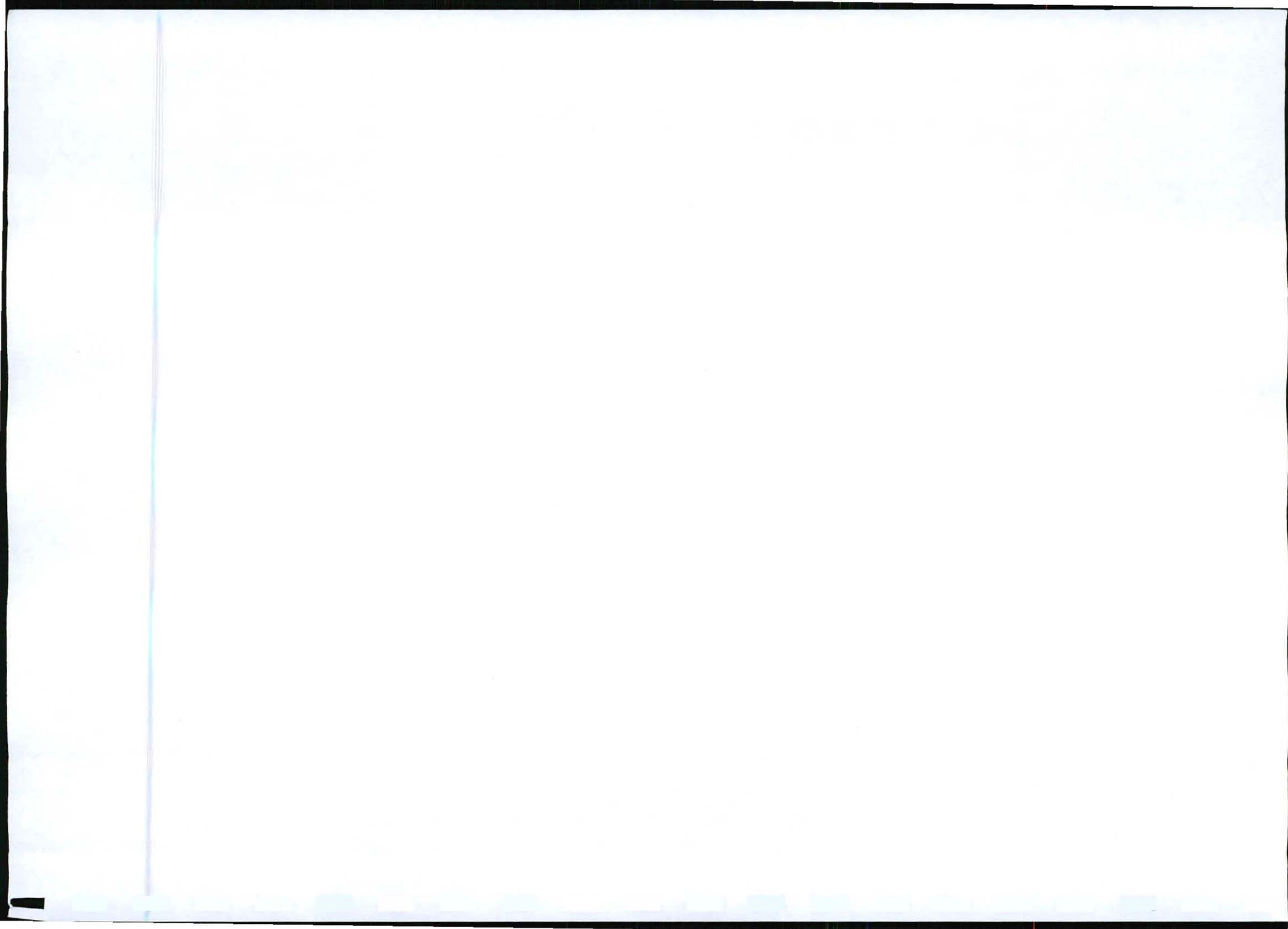
9.2.9 No-project Option

The "No-project" option of not exploiting the quarries for material will necessitate the use of commercial sources, or sources from further afield.



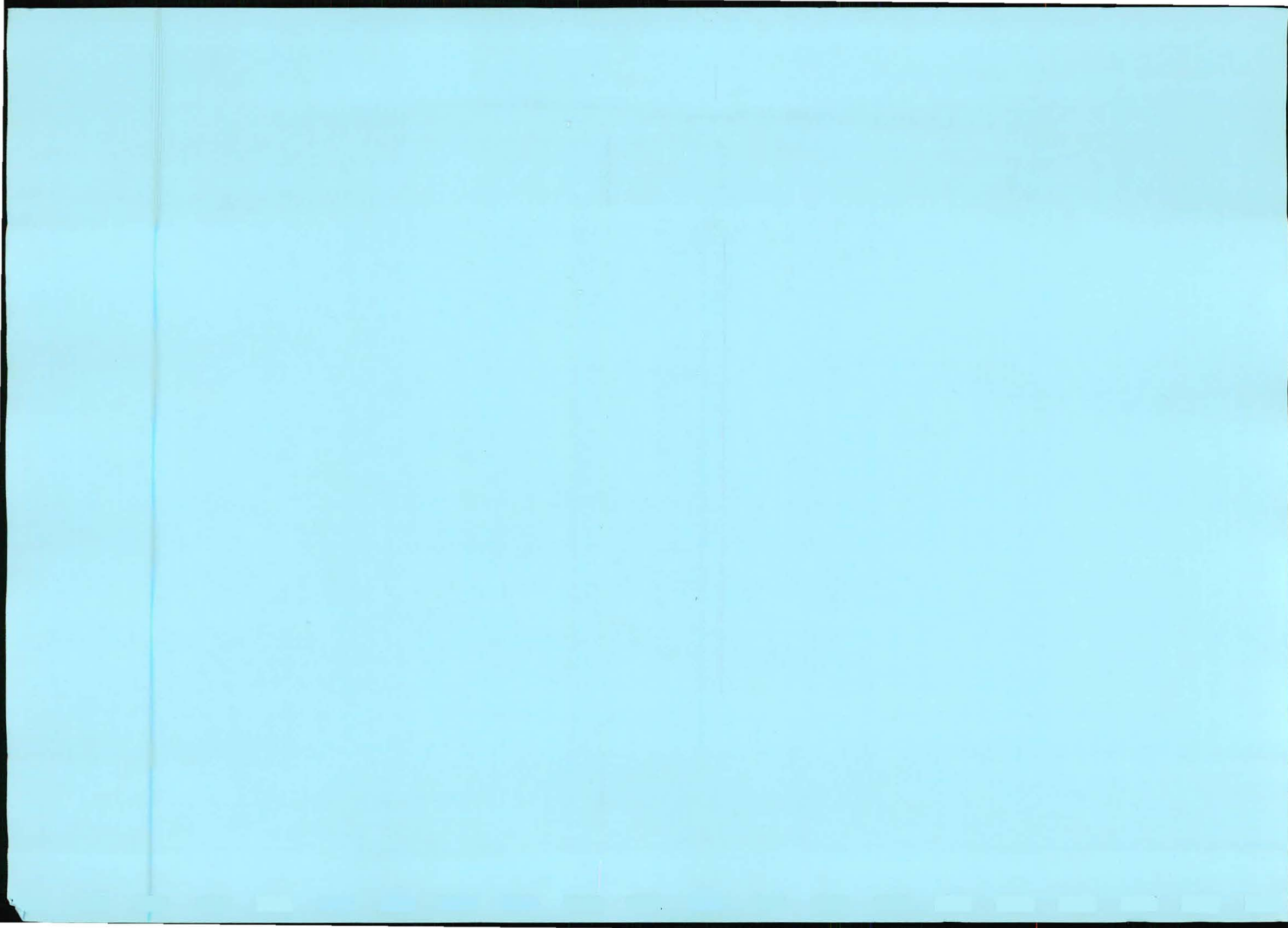
10 CONCLUSION

It is the opinion of the Environmental Assessment Practitioner that all impacts caused by mining of the proposed borrow pits, can be mitigated to an acceptable level. The proposed project will have positive impact on the surrounding communities in terms of improving the roads.



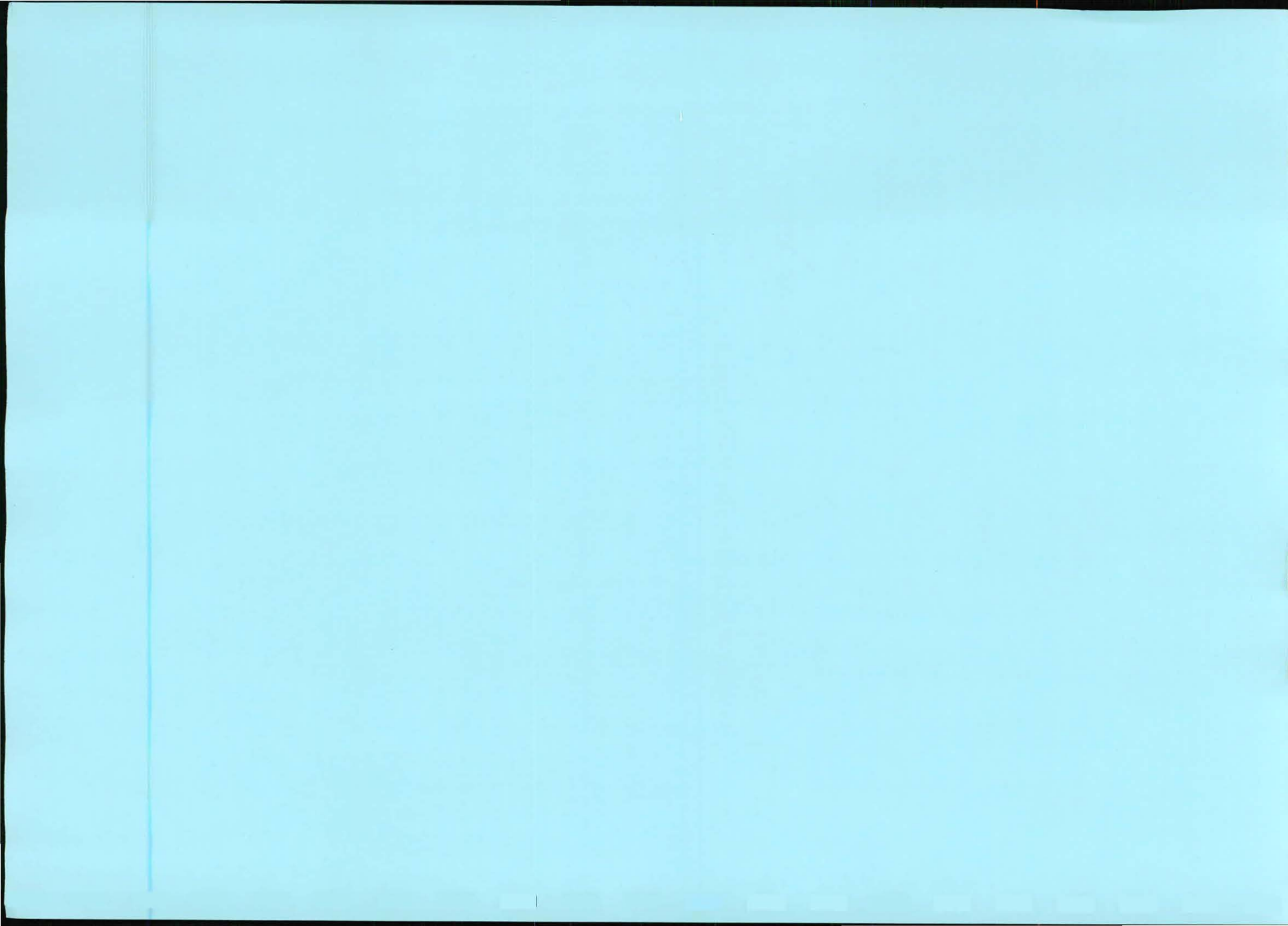
APPENDIX A

Mining Plans



APPENDIX B

Public Participation Newspaper Advertisement



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NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT

Notification is given in terms of Section 22(2) of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) in preparation of an Environmental Management Plan for Mining permits.

ACTIVITY:

Borrow pits for sourcing of material used in the upgrade of the road between Uitenhage and Witteklip.

LOCATION:

Borrow pits identified along the MR453 between Uitenhage and Witteklip.

PROPONENT:

Eastern Cape Department of Roads and Transport

CONSULTANT:

ARCUS GIBB (Pty) Ltd
PO Box 19844, Tecoma
EAST LONDON
5214

Contact Person

Nadia Grobbelaar
Phone: (043) 706-3600
Fax: (043) 706-3647

Email:

ngrobbelaar@gibb.co.za
Date of Advertisement:
August 2009

Public meetings will be held as follows:

Date: 20 August 2009

Venue: Van Stadens River Farmers Association Hall (Corner of Old Cape road and R334)

Time: 10am - 12 noon

For further details and in order to ensure that you are identified as an Interested and Affected Party (I&AP), please submit your details to the contact person within 21 days of the publication of the advert.

Date of publication: 17 August 2009

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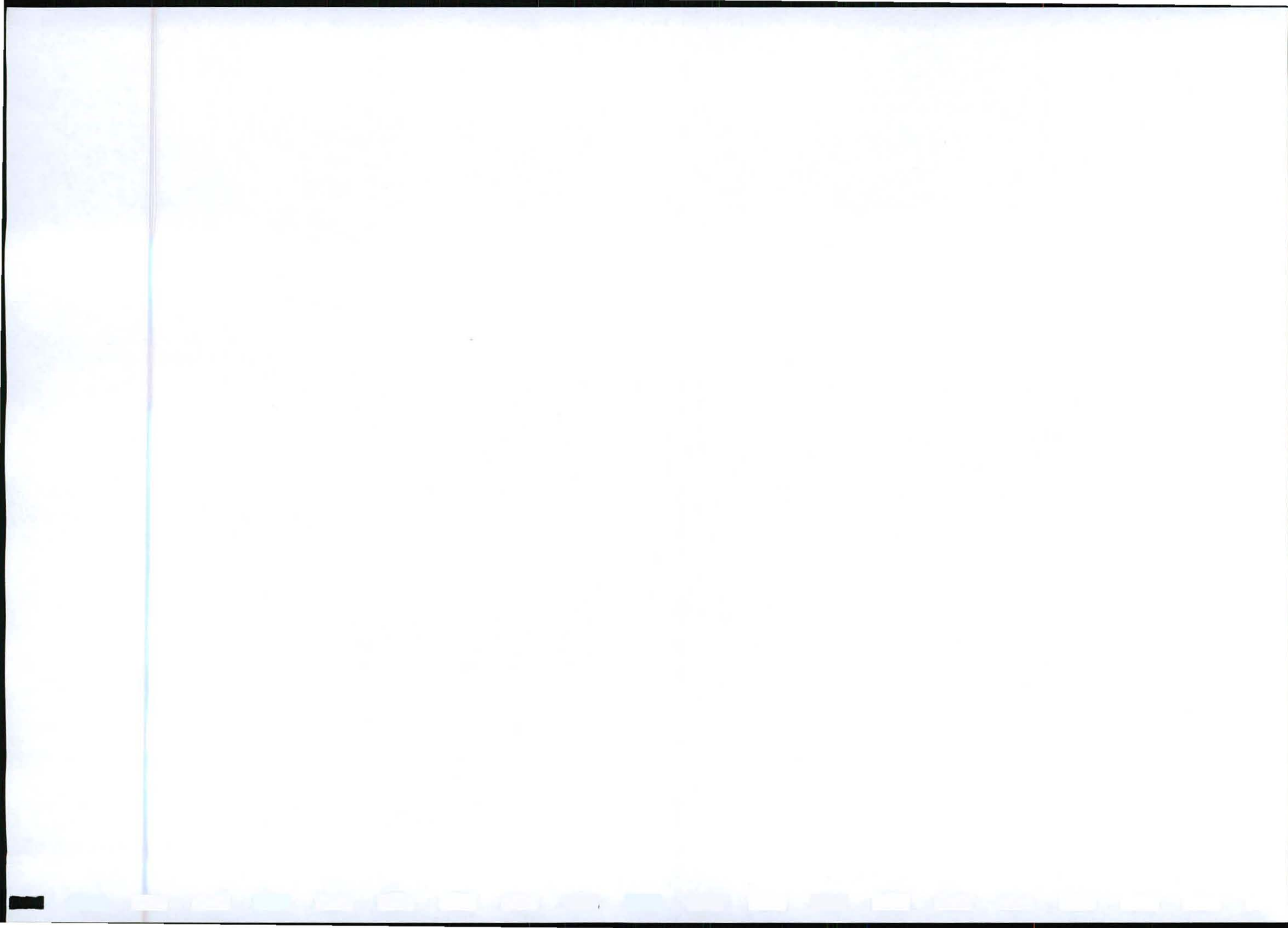
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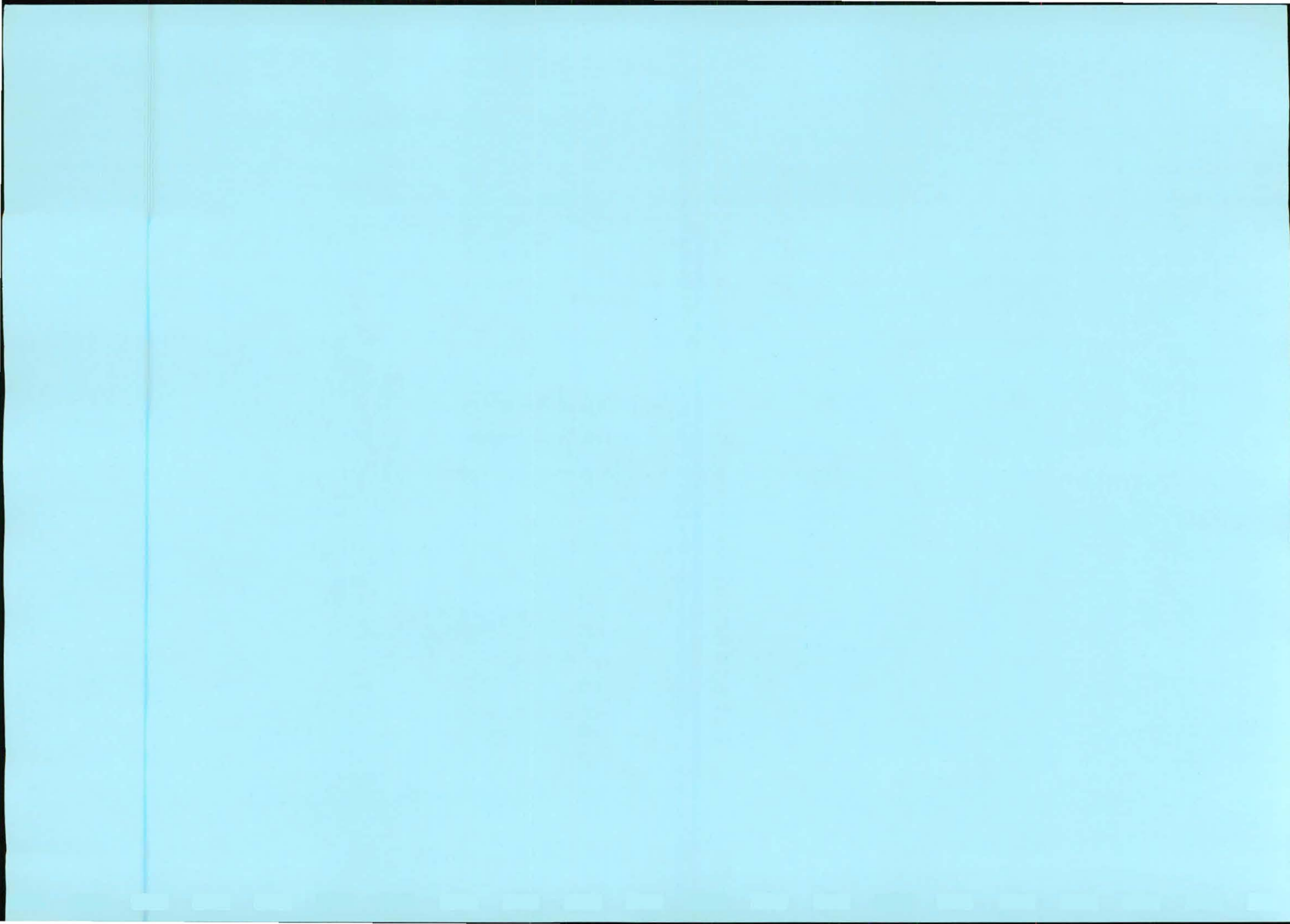
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APPENDIX C

**Letter and undertaking by Department of Roads
and Transport**



IPHON-DO



PROVINCE OF

LEMPUMA-KOLONI

THE EASTERN CAPE

**PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF ROADS & TRANSPORT**

Our Ref:
Enq: J. Xoko
Email: xokoc@prpw.ecape.gov.za

Date: 12 September 2008 ⁹ SA
Tel: 040 6094647
Fax: 040 639 2926

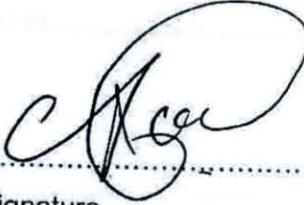
**Department of Minerals and Energy
Private Bag X6076
Port Elizabeth
6000**


Attention: Ms D. Watkins

UPGRADING OF MR 453 FROM WITTEKLIP TO UITENHAGE

This letter is submitted in support of the Environmental Management Programme/Environmental Management Plan/Environmental Scoping Report for the proposed borrow-pits and quarries to be used for the upgrading of MR453 from Witteklip to Uitenhage. We would like to confirm that this is a Department of Roads and Transport Project. We are currently in the design phase. A contractor has not been awarded as yet.

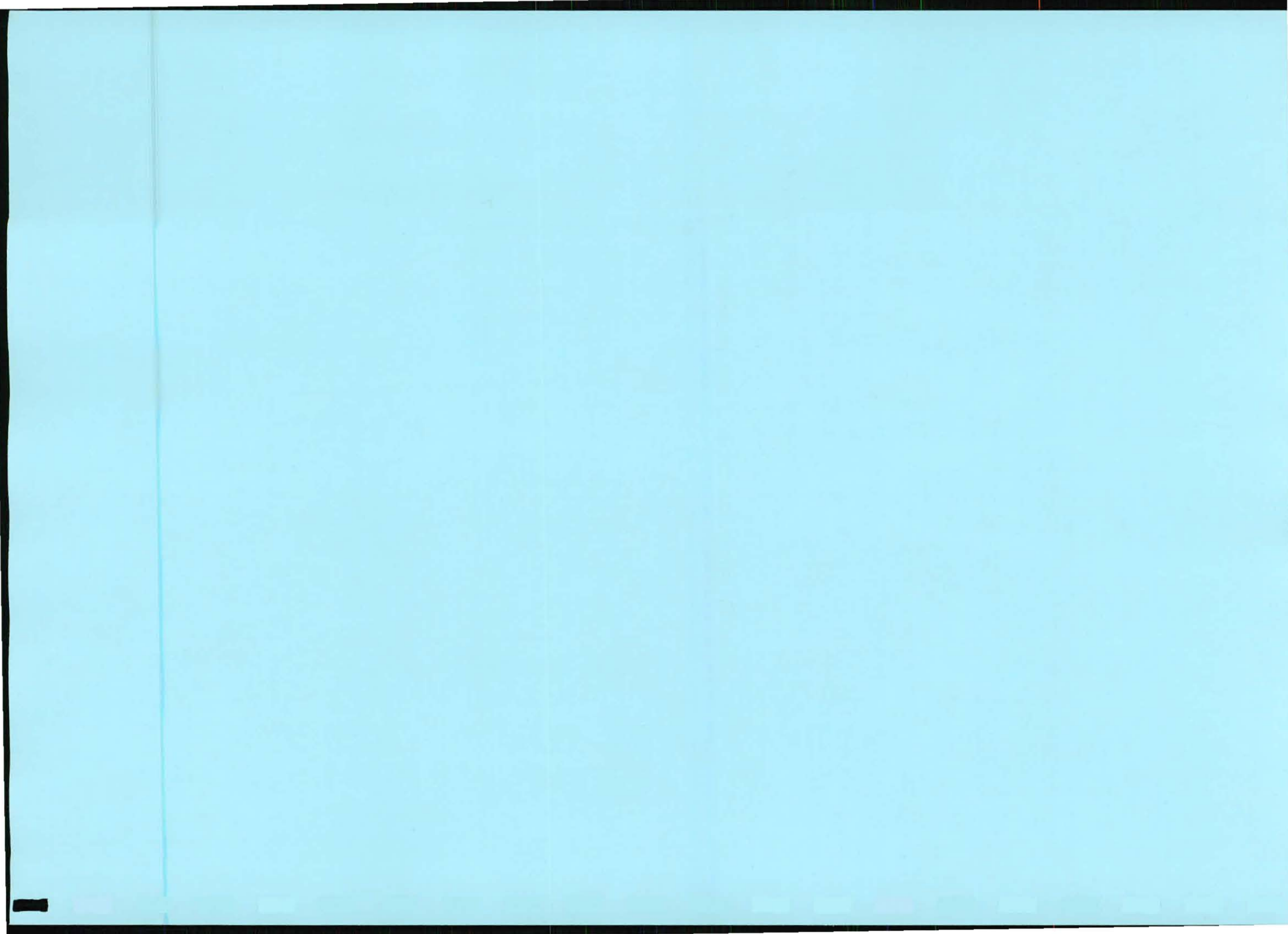
Yours Faithfully


.....
Signature


.....
Designation

APPENDIX D

**Financial Guarantee from Department of Roads
and Transport**



IPHON-DO



PROVINCE OF

LEMPUMA-KOLONI

THE EASTERN CAPE

**PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF ROADS & TRANSPORT**

Our Ref:
Enq: J. Xoko
Email: xokoc@drpw.ecape.gov.za

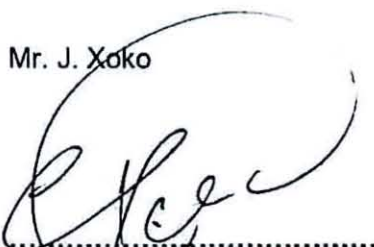
Date: 12 September 2008 ^{MG}
Tel: 040 6094647
Fax: 040 639 2926

FINANCIAL GUARANTEE: RETENTION MONEYS

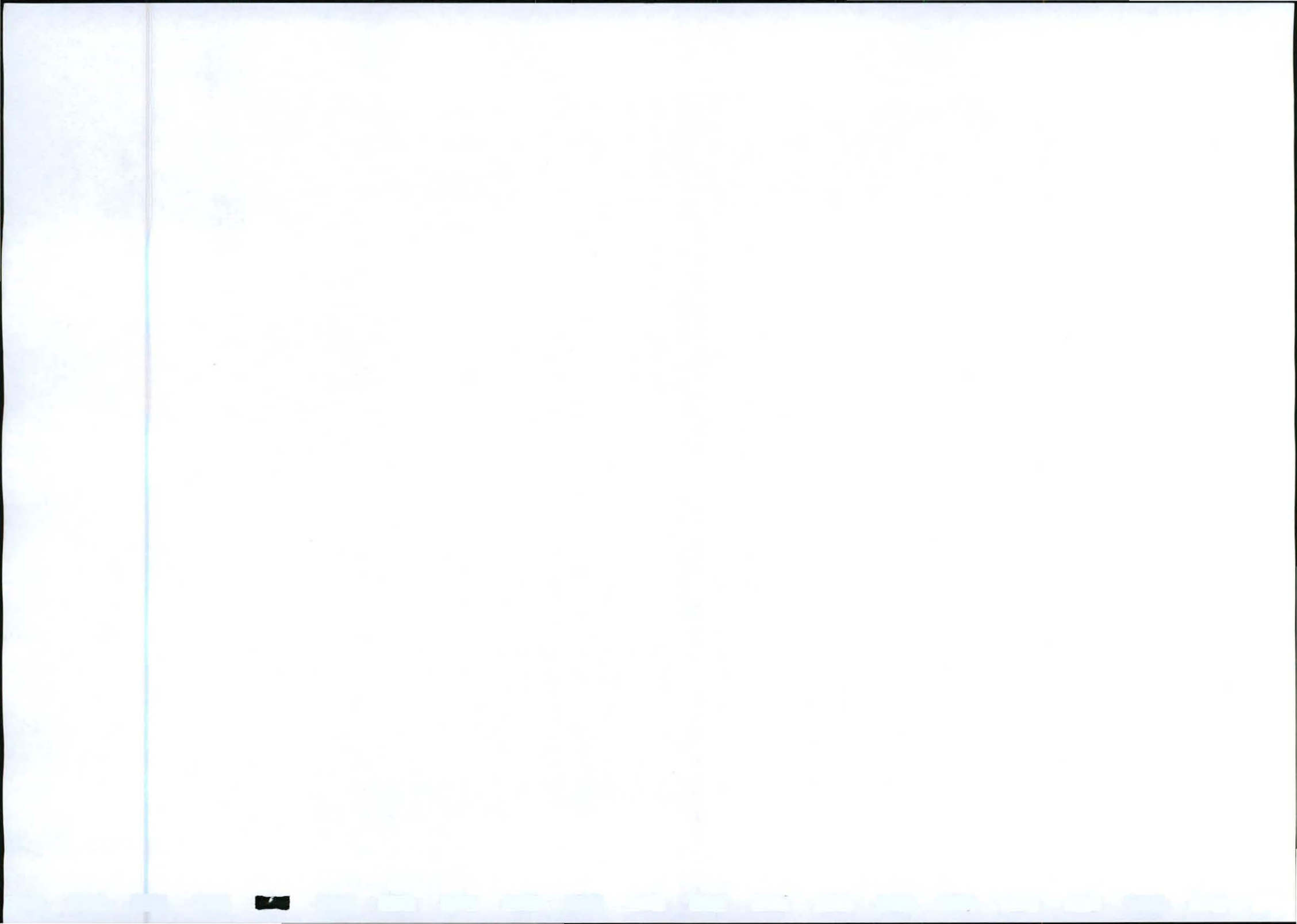
I, J. Xoko, as the authorised representative of Department of Roads and Transport, do hereby undertake to ensure that an amount as stipulated by the Environmental Management Programme for the rehabilitation of borrow pits and quarries to be used for the upgrading of MR453 between Uitenhage and Witteklip and being necessary for the completion of this project will be retained by this department until such time as I have been informed in writing by your department that you are satisfied that rehabilitation, as stipulated by the Environmental Management Programme, has been undertaken on the borrow pits and quarries. The amount to be retained is R500 000 as approved by the Department of Minerals and Energy.

Yours faithfully

Mr. J. Xoko

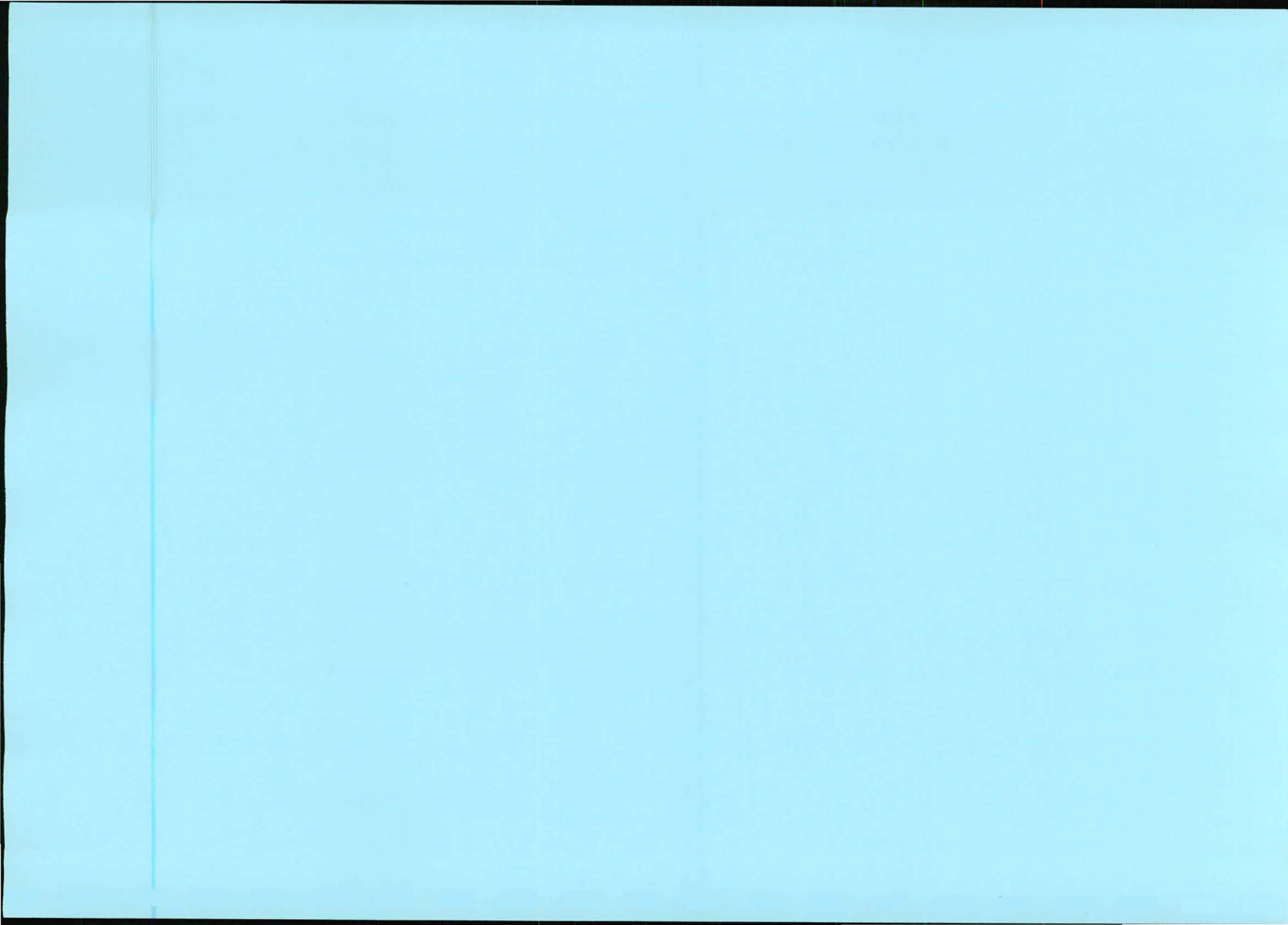

.....
Signature


.....
Designation



APPENDIX E

Site photographs

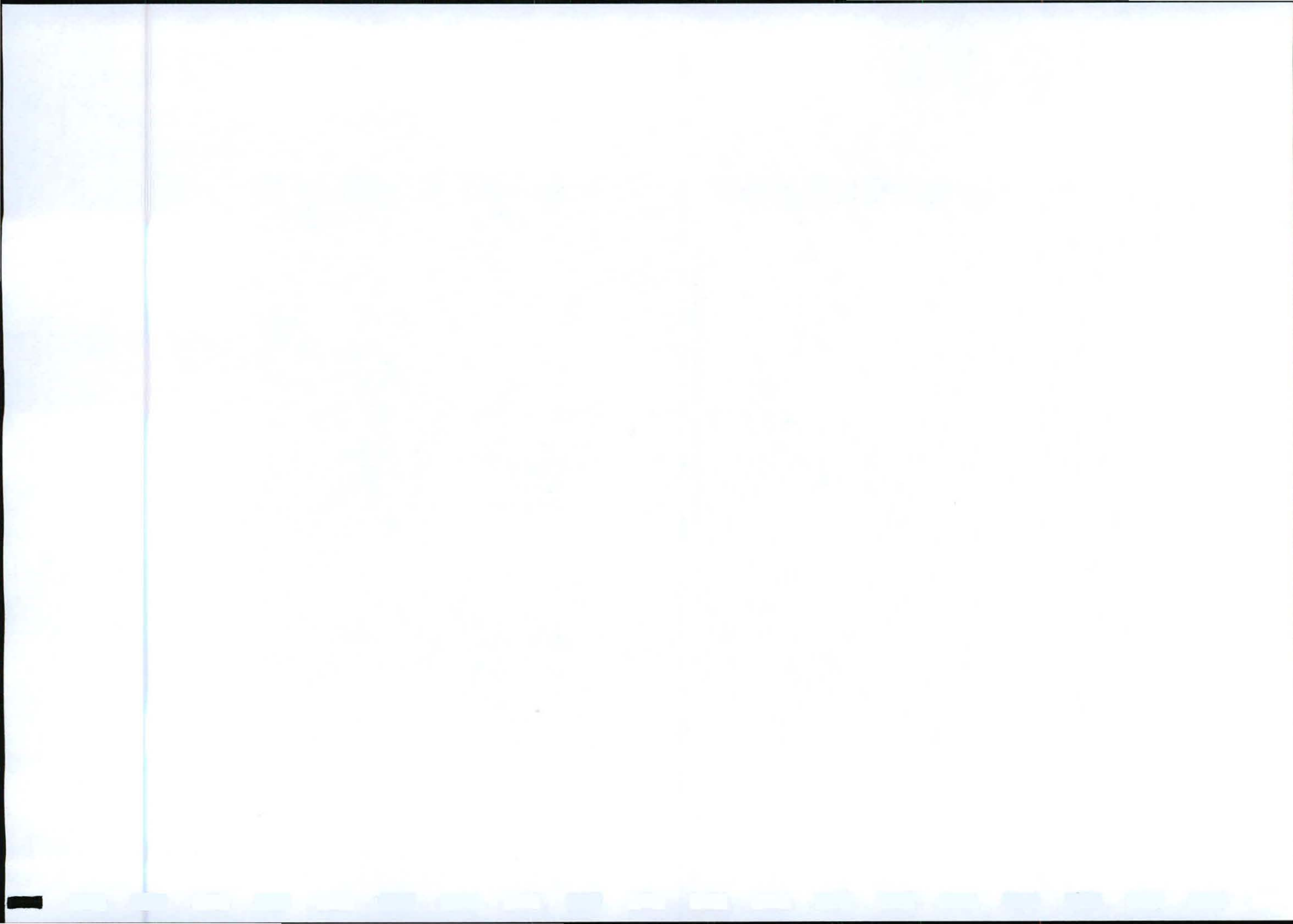




Pic 1: View of Mimosadale Farm looking in an Eastern direction



Pic 2: View of Mimosadale Farm looking in a Western direction





Pic 3: View of Borrow pit 5



Pic 4: Alien vegetation present at Borrow pit 5





Pic 5: View of residents in close proximity of borrow pits 7 & 8

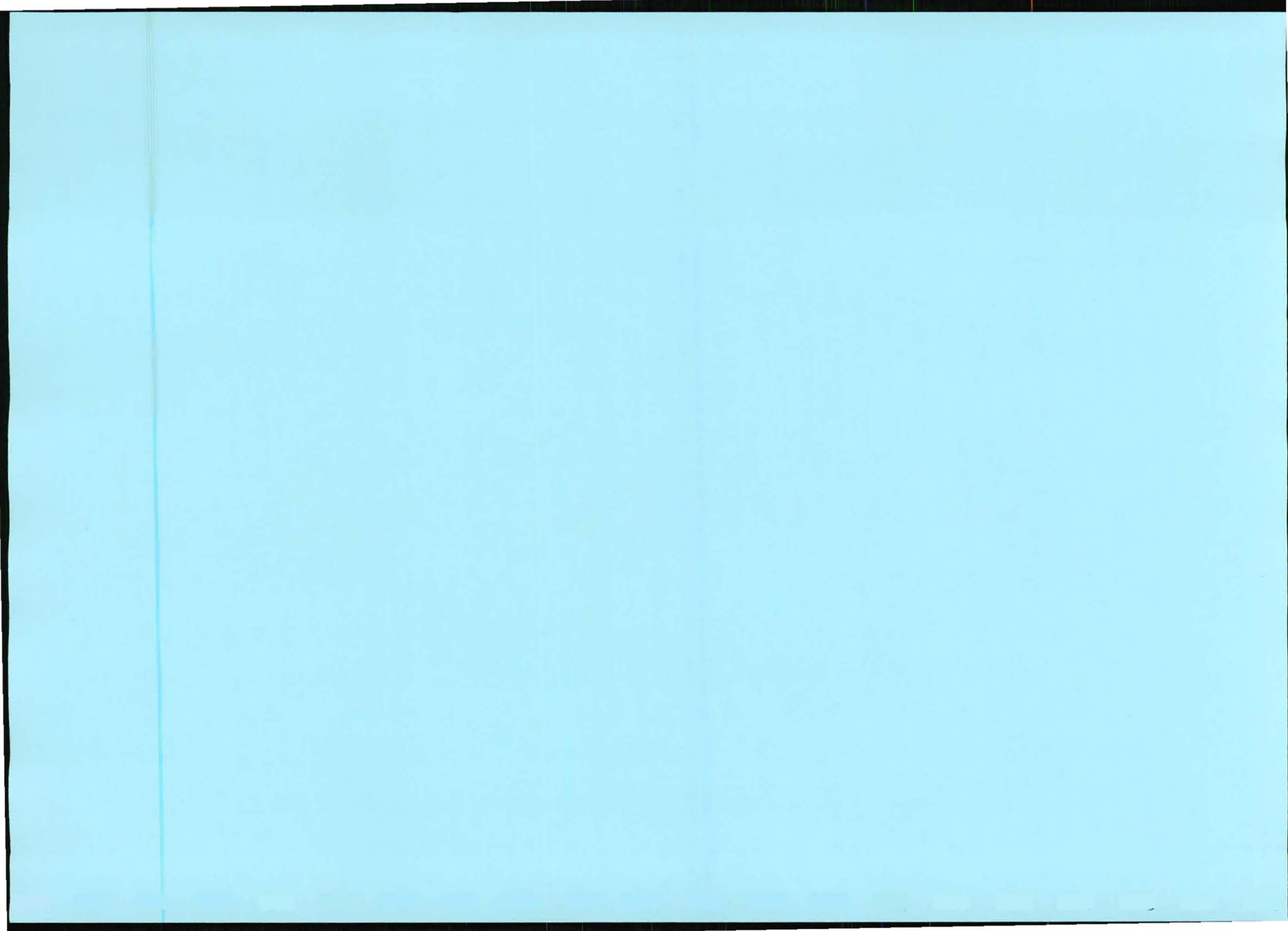


Pic 6: Evidence of previous mining that took place at borrow pits 7 & 8



APPENDIX F

Public meeting minutes



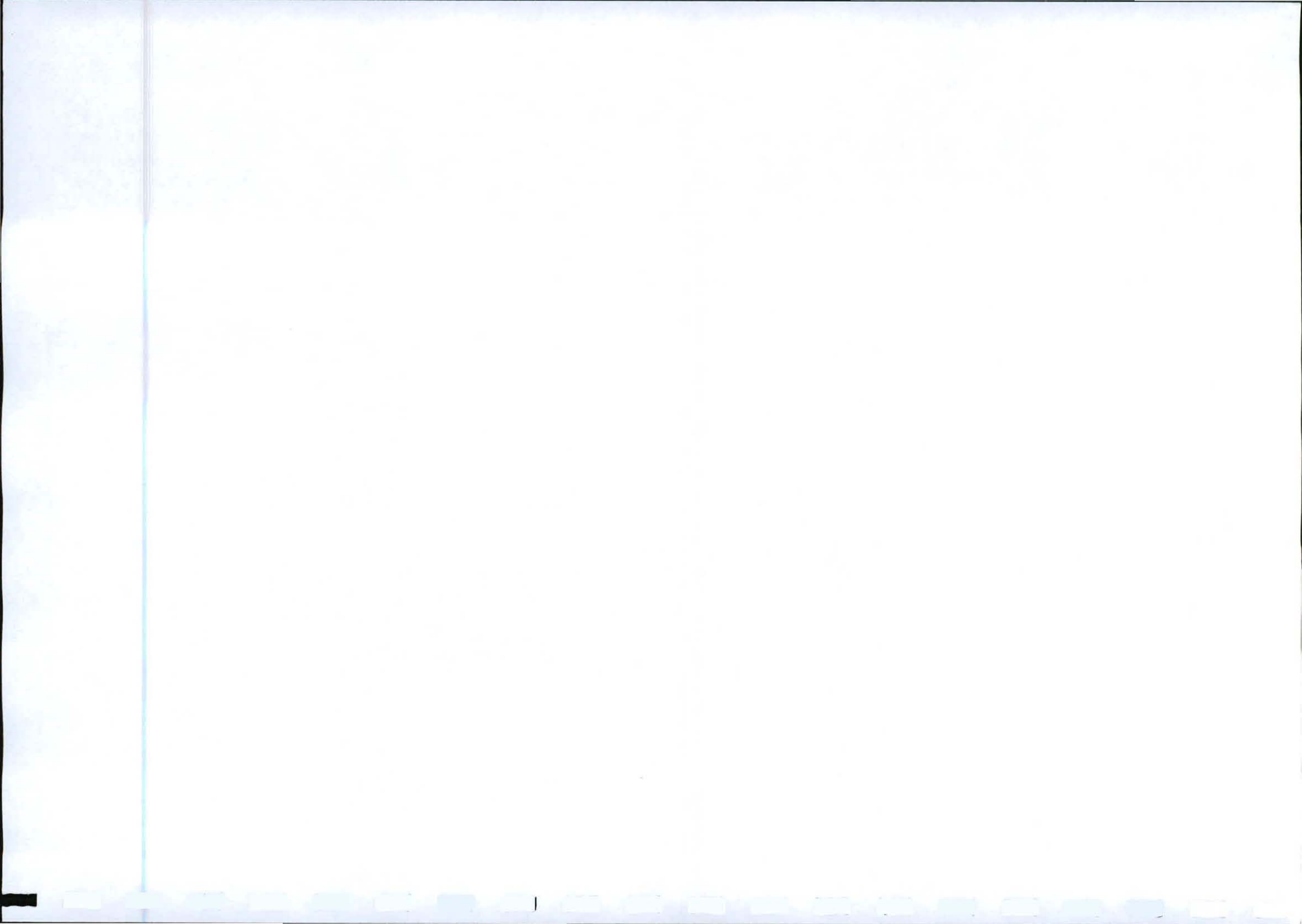
PUBLIC PARTICIPATION MEETING ATTENDANCE REGISTER



PROJECT: UITENHAGE WITTEKLIPMR450 ROAD UPGRADE
PURPOSE: BORROW PITS PUBLIC PARTICIPATION MEETING
VENUE: VAN STADENS RIVER FARMERS ASSOCIATION HALL,
DATE & TIME: 20-Aug-09

PROJECT No.: J27088

COMPANY NAME	REPRESENTATIVE		OFFICE NR.	CELL PHONE NR.	OFFICE FAX NR.	E-MAIL ADDRESS	ADDRESS	PREFERRED METHOD OF DISTRIBUTION				
	NAME	INITIAL									BY HAND	
W. Smith - SKEWEN	WILLIAM		041 9555567	0823251574			P.O. Box 111, Uitenhage RIDGEWAY FARM.					
V. Smith - SKEWEN	UNCOU		041 9555964	0735132905			PO BOX 798 UITENHAGE					
OWNER OF BPT 7 and BPS	(TELEPHONIC) SUZIE		041 5861527									



DOCUMENT CONTROL

IP180_B



ARCUS
GIBB
ENGINEERING & SCIENCE

CLIENT : Eastern Cape Department of Roads and Transport
PROJECT NAME : Upgrade of the MR453 between Uitenhage and Witteklip **PROJECT No. :** J27088
TITLE OF DOCUMENT : Environmental Management Plan Upgrade for the use of borrow pits for the upgrade of the MR453 between Uitenhage and Witteklip
ELECTRONIC LOCATION : P:\09230\J27088 **Witteklip** to **Uitenhage\3-Tasks\Environmental\Reports**

Approved By

Reviewed By

Prepared By

ORIGINAL	NAME M. Olivier	NAME Nadia Grobbelaar	NAME Jahne de Wet
DATE <i>APRIL 2010</i>	SIGNATURE 	SIGNATURE 	SIGNATURE

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- (c) ARCUS GIBB accepts no responsibility for any loss or damage incurred by the Client or for any conflict of ARCUS GIBB interests arising out of the Client's release of this report to the Third Party.

ARCUS GIBB (Pty) Ltd

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