



mineral resources

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REPUBLIC OF SOUTH AFRICA

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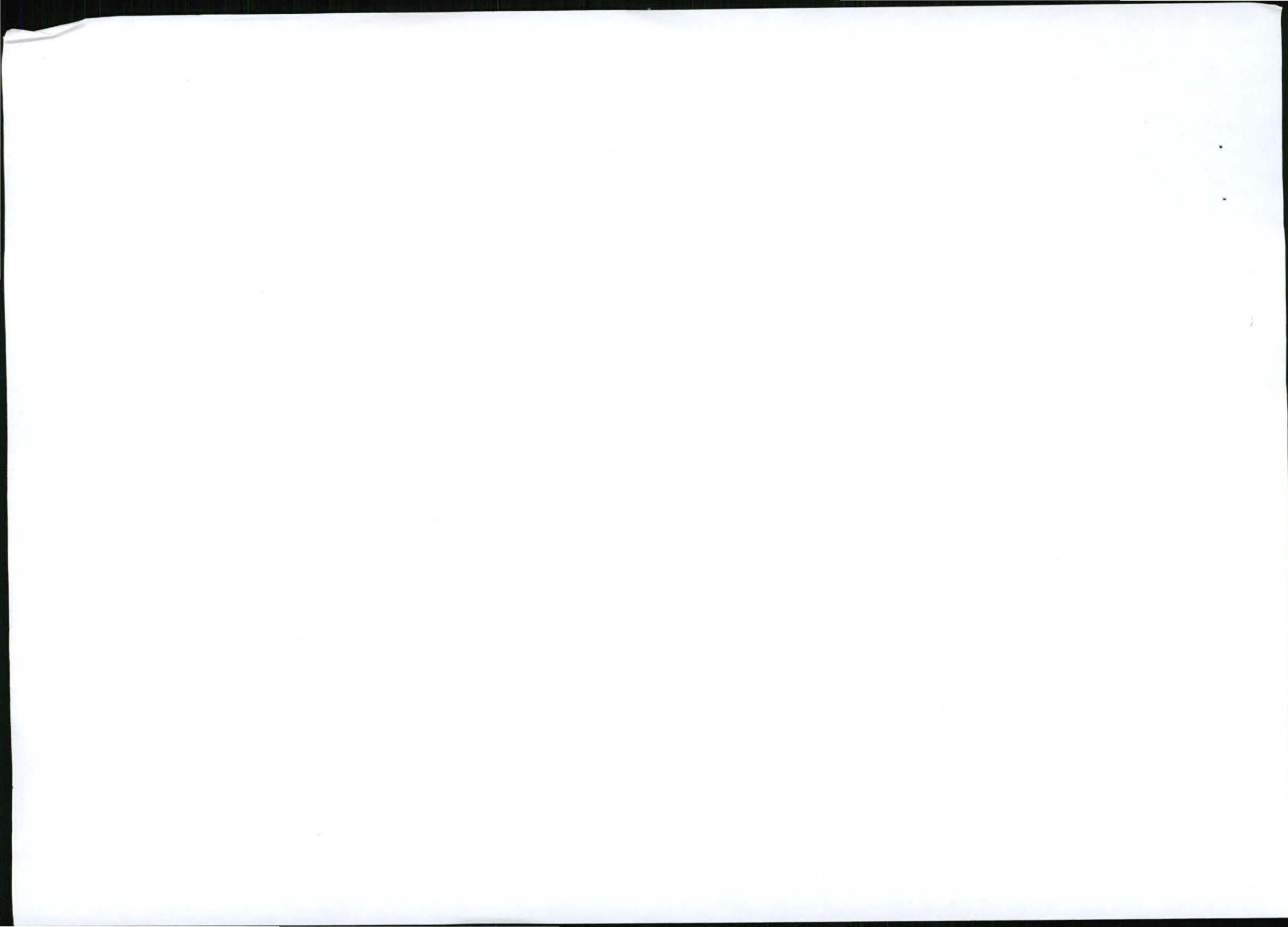
Attention: Mr. Daonald Lithole/ Victor Netshiavha

CONSULTATION IN TERMS OF SECTION 40 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) FOR THE APPROVAL OF SCOPING REPORT OF GROOTGELUK COAL MINE ON THE FARM GROOTGELUK 459 LQ AND OTHER VARIOUS FARMS IN THE DISTRICT OF LEPHALALE.

1. Attached herewith, please find a copy of amendment Scoping Report received from the above-mentioned applicant, for your comments.
2. It would be appreciated if you could forward any written comments or requirements your Board may have, in the case in hand to this office and to the applicant on or before **13 August 2011 (30 days)**, failure of which will lead to the assumption that your Board has no comments with regard to the said document.
3. Consultation in this regard has also been initiated with other relevant State departments.

Your co-operation will be appreciated.

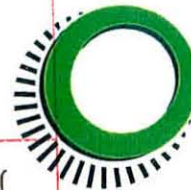
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For LIMPOPO REGION



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Project Applicant: **EXXARO REDUCTANTS (Pty) Ltd**
 Project: **Char Manufacturing Plant Expansion**

Report Name: **ENVIRONMENTAL SCOPING REPORT**
 Report Status: **(Draft)**

Revision No: 00
 Report Date: May 2011
 Report Number: S0342/SR01
 Prepared by: Mari Wolmarans, Vivienne Vorster and Shelley Holt
 Reviewed by: Mari Wolmarans

For Submission to: Limpopo Department of Economic Development, Environment and Tourism (LEDET), as part of the EIA in terms of the National Environmental Management Act.
 Department of Mineral Resources, as part of the EIA and EMP in terms of the Mineral and Petroleum Resources Development Act (No 28 of 2002).
 Department of Water Affairs (DWA), as part of the Water Use License Application in terms of Section 21 of the National Water Act.
 Limpopo Department of Economic Development, Environment and Tourism (LEDET), or National Department of Environmental Affairs, as part of a waste management license in terms of the National Environmental Management: Waste Act (No. 59 of 2008) (only if it is confirmed that a license is needed for this mining project).

Reference No: LEDET: 12/1/9/2-W07
 DWA: to be announced
 DMR: to be announced

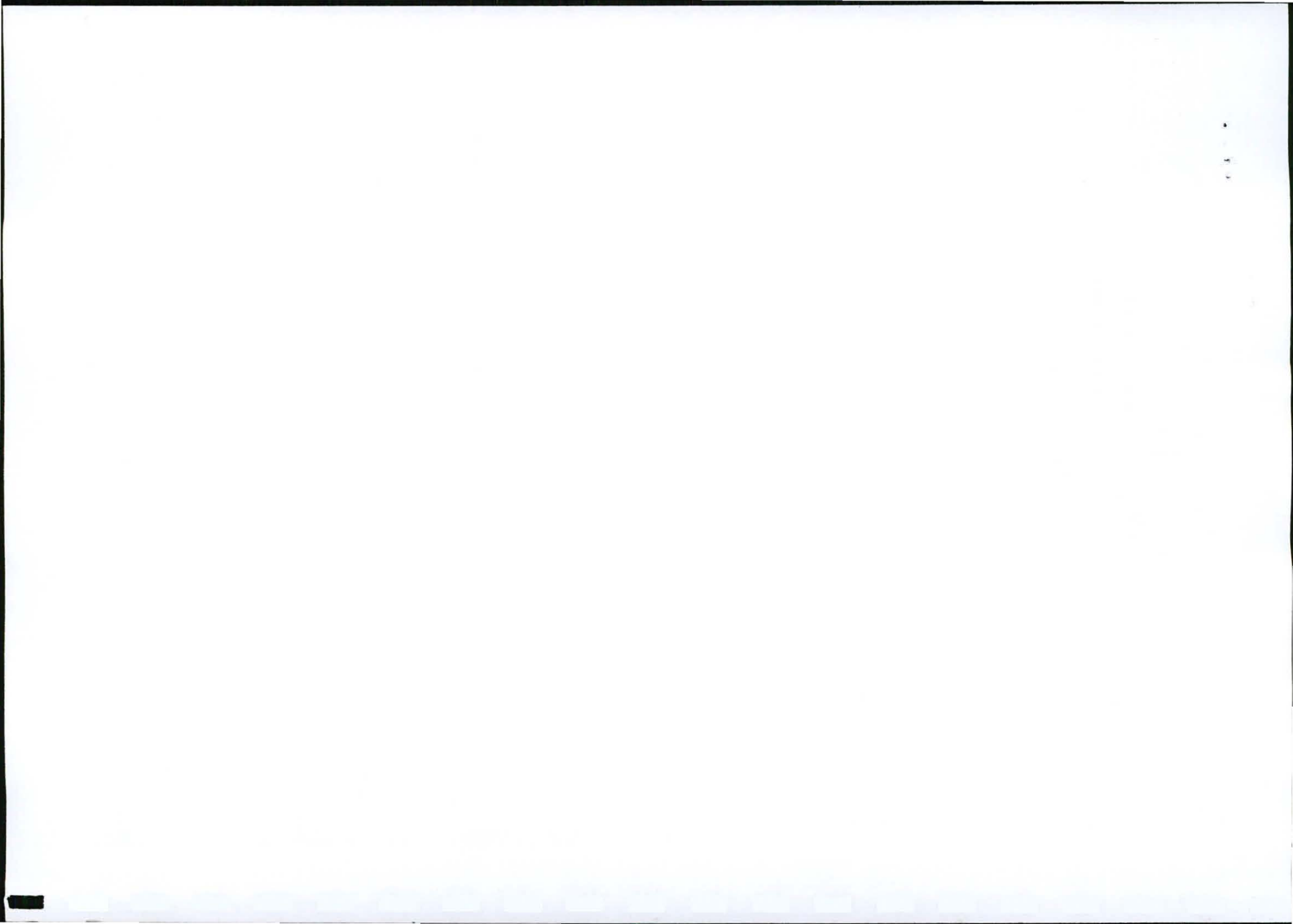


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PROJECT INFORMATION SHEET

PROJECT:

Char Manufacturing Plant Expansion

REPORT DETAILS:

Report Name: **Char Manufacturing Plant Expansion - DRAFT Environmental Scoping Report**

Report Number: S0342/SR01

Report Status: DRAFT

Revision No: 00

Date: May 2011

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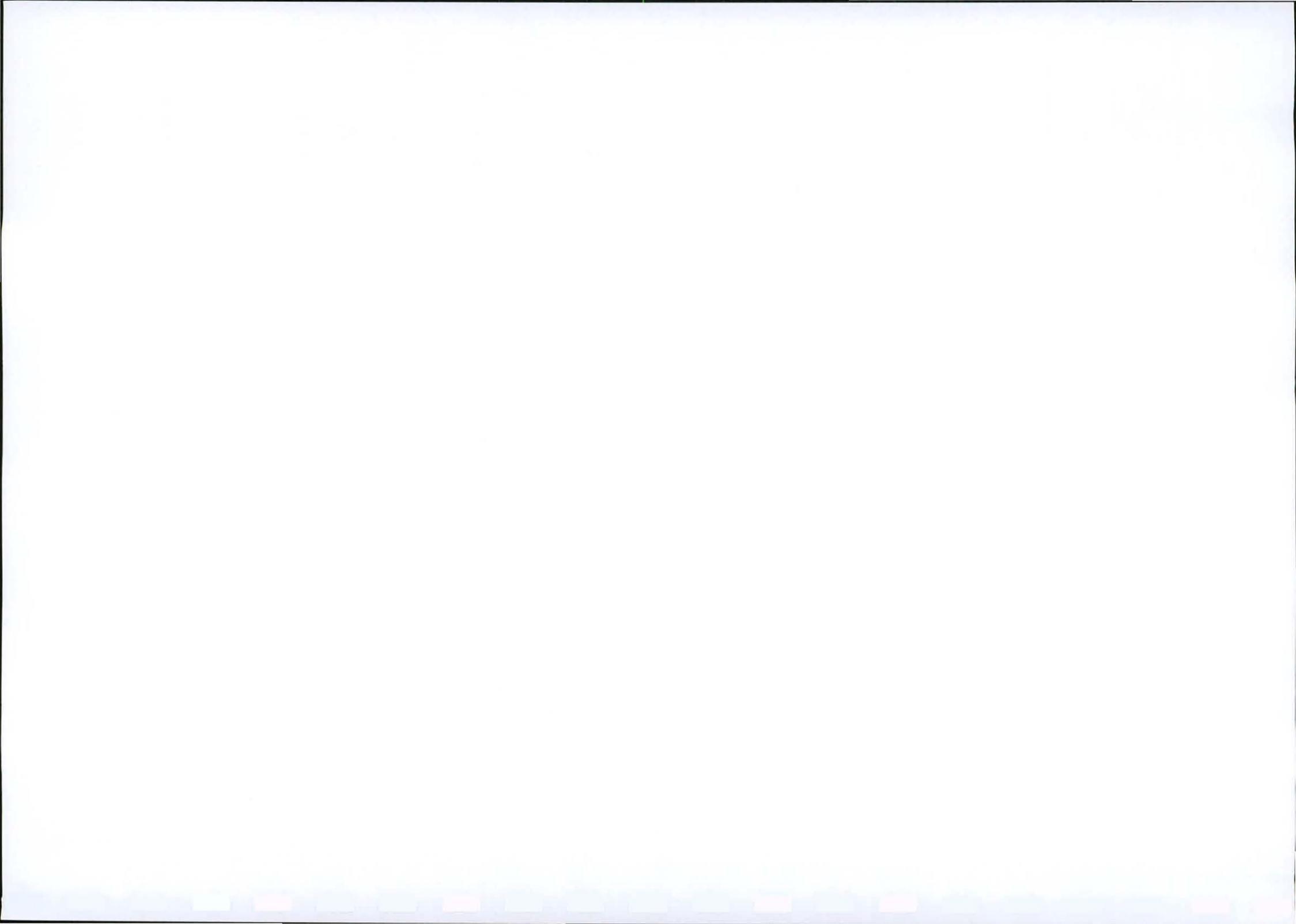
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15+ years' environmental management and assessment experience, specifically in the mining and infrastructure development sectors.



EXXARO REDUCTANTS (Pty) Ltd

EXECUTIVE SUMMARY

Introduction and Project Description

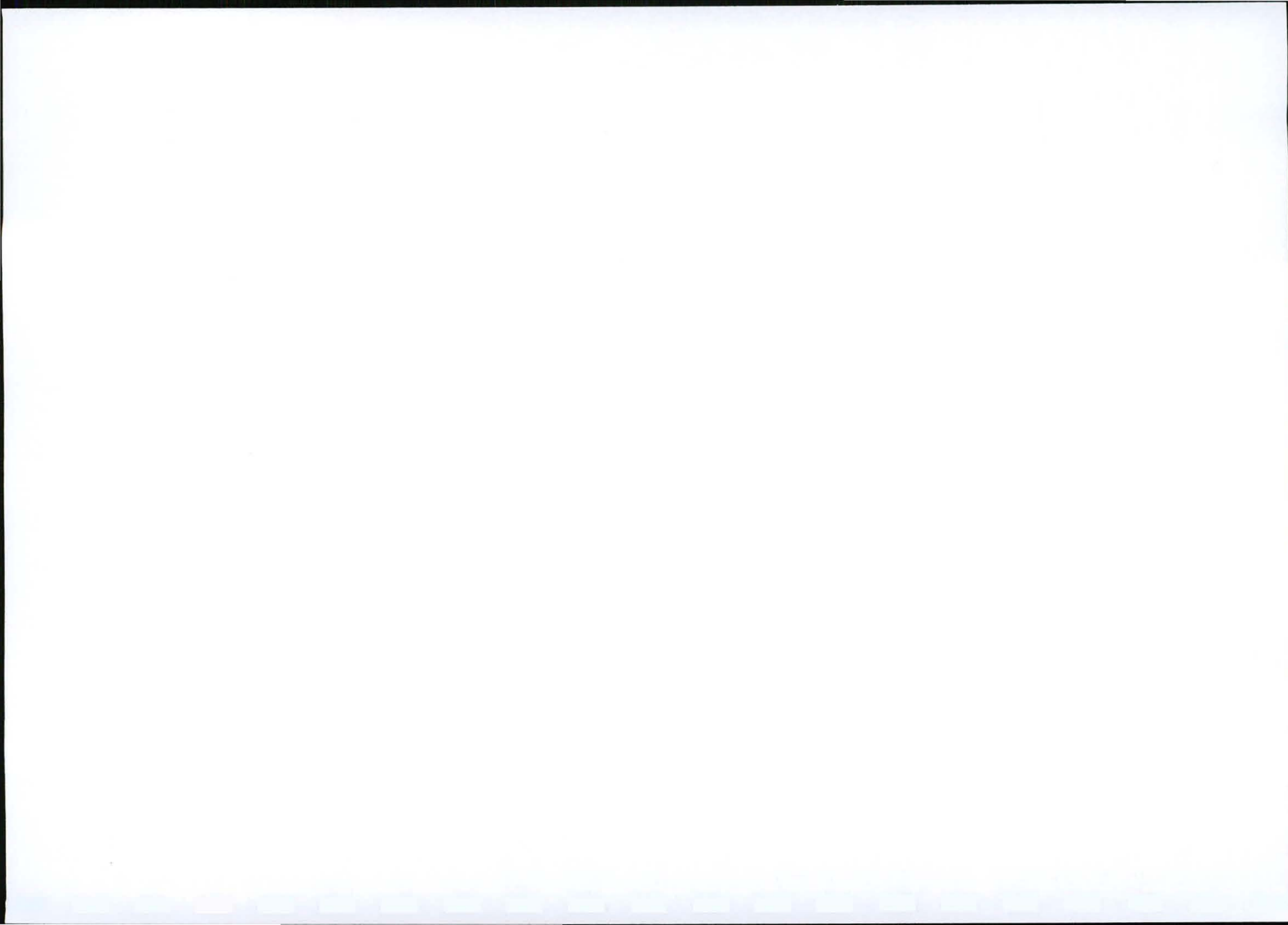
Exxaro Reductants (Pty) Ltd (Exxaro Reductants) operate an existing Char Manufacturing Plant located on the Farm Daarby 458 LQ, within the boundaries of the Grootegeluk Coal Mine, approximately 20km west of Lephalale (formerly Ellisras) in the Limpopo Province and is proposing to expand this plant. Grootegeluk Mine is adjacent to the Matimba and Medupi Power Stations, two major clients of Grootegeluk Mine. About 18% of the mine's production consists of semi-soft coking and metallurgical quality coal, which is sold to local and international steel and ferro-alloy plants.

Char, a form of devolatilized coal, is used in the metals industry to reduce oxygen from ore to produce the basic metal. There is a demand for increased production of char within this market, which the proposed expansion aims to address. Exxaro Reductants is in a prime position to address this demand with the existing plant already in production, readily available coal feedstock from Grootegeluk Mine and in close proximity to their customers.

The existing Char Manufacturing Plant was built on an old coal stockpile area within the mining area of Grootegeluk Mine and has been operational since 2009. The existing plant has experienced some operational problems which Exxaro Reductants will endeavour to resolve in the expanded plant. The existing Char Manufacturing Plant is owned and operated by Exxaro Reductants, a separate business entity to the Grootegeluk Coal Mine, which is owned by Exxaro Coal (Pty) Ltd. The existing plant occupies an area of approximately 5.5 ha. Exxaro Reductants now wishes to expand the Char Manufacturing Plant by increasing the number of retorts from 4 to a maximum of 12, thereby increasing their production capacity threefold. The majority of the infrastructure associated with the retorts will also be expanded. The expansion will be located adjacent to the existing Char Manufacturing Plant and will therefore also be in the Grootegeluk mining area.

The Char Manufacturing Plant involves the conversion of coal to high quality carbon reductants (char) through the removal of volatile gas by heating the coal. The process takes place in a closed circuit and involves the application of gaseous heat in the absence of oxygen, which maximises the recovery of carbon. The technical details of the process are explained in the main report.

In line with best practices and standards for EIAs, certain development alternatives will be discussed and considered during the EIA phase. The alternatives will include the no-go option - that the expansion of the Char Manufacturing Plant will not be undertaken. No locality alternatives have been assessed as part of this scoping report since the proposed expansion will be located adjacent to the existing Char Manufacturing Plant and much of the existing infrastructure will be utilised for the expansion. The Char Manufacturing Plant is conveniently located close to the coal source required to produce char. The proposed site is located in on a previously disturbed old coal stockpile area and the disturbance of a



green field site is therefore avoided. Any other locality will require replication of existing infrastructure and a larger footprint of disturbance due to additional infrastructure and transport requirements. Alternative localities will not be considered in the environmental assessment.

Description of the Affected Environment

The core study area can be defined as the existing Char Manufacturing Plant in the current Grootegeluk Coal mining right area, and areas affected by associated activities and infrastructure. During the EIA phase, the various specialist studies will be used to define a project zone of influence which will ultimately define the broader study area.

The broader area around the mine is mainly used for game farming. Other land uses around the mine include a brick making operation, the Maropong Township and the Medupi and Matimba Power Stations.

The area is located within the land capability classes V and VI which makes the area suitable for grazing land, but not for arable land. Potential agricultural or other uses for the land are limited.

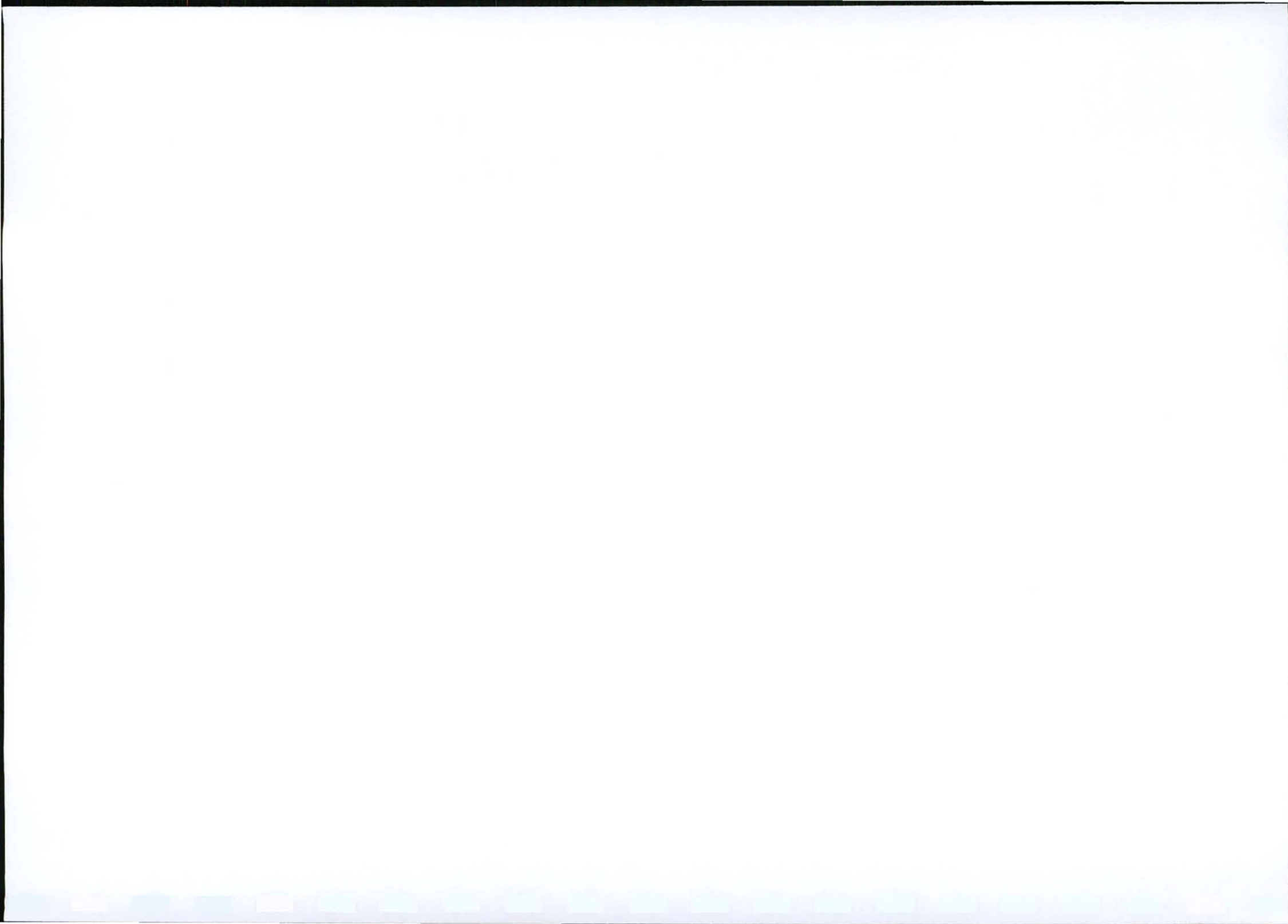
In terms of the environmental baseline which will be affected, the aspect which is of most concern is the current level of air quality in the area. Air quality is affected by the Grootegeluk Mine and the Matimba (existing) and Medupi (under construction) Power Stations and their associated ash dumps. However, the emissions from the existing Char Manufacturing Plant are likely to have an impact on the air quality in the immediate char plant area. The emissions from the existing plant are currently licenced in terms of an existing Atmospheric Pollution Prevention Act (APPA) permit. There has been an indication that the emissions which should be emitted according to the design of the plant, are currently being exceeded. The existing plant is not running in a stable manner and various operational problems have been experienced, which have resulted in higher than expected atmospheric emissions.

An additional concern regarding the environmental baseline is the current level of groundwater pollution on the site, caused mainly by the historical coal stockpile area and current mining activities surrounding the Char Manufacturing Plant. No hydrocarbon pollution has been detected in the monitoring boreholes surrounding the Char Manufacturing Plant. Spills of liquor and tar on the existing plant site may leach pollutants into the groundwater. Any stockpiles of coal and char products at the existing Char Manufacturing Plant, which are stored directly on the surface of the ground (i.e. not on a concrete surface) may also be leaching contaminants into the groundwater on the site.

Exxaro Reductants aims to address the air quality and groundwater quality problems through improvements to the design of the expanded Char Manufacturing Plant. These issues will be assed in more detail in the EIA report.

Results of Consultation with Interested and Affected Parties

In August 2010 and March 2011, public participation processes were undertaken for the proposed Char Manufacturing Plant expansion. The issues raised included the source of water required for the project and whether suitable measures to control surface water pollution would be put in place. In addition, IAPs were concerned about air quality impacts and their effect on human health, the



generation and disposal of hazardous waste, and the time period required for construction.

Environmental Legal Requirements

The key legislation applicable to the proposed project includes:

- The National Environmental Management Act (No. 107 of 1998) (NEMA);
- The Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA);
- The National Water Act (No. 36 of 1998) (NWA);
- The National Environmental Management: Waste Act (No. 59 of 2008) (NEMWA); and
- The National Environmental Management: Air Quality Act (No. 39 of 2004) (NEMAQA).

There will be five key deliverables for the project, each of which will be submitted to the relevant government department. These are:

- An Environmental Impact Assessment (EIA) in accordance with NEMA will be submitted to the Limpopo Department of Economic Development, Environment and Tourism (LEDET) for activities that are listed in terms of the EIA Regulations;
- An EIA and Environmental Management Programme (EMP) in accordance with the MPRDA will be submitted to the Department of Mineral Resources (DMR) for approval;
- An amendment to the Integrated Water Use Licence Application (IWULA) will be submitted to the Department of Water Affairs (DWA);
- A Waste Management Licence in accordance with NEMWA will be submitted to the National Department of Environmental Affairs (DEA) or LEDET for approval; and
- An Atmospheric Emissions Licence in accordance with the NEMAQA will be submitted to LEDET for approval.

Environmental Impacts

The report provides a scoping-level identification of potential environmental impacts (physical, biological, social and economic) associated with the proposed Char Manufacturing Plant expansion, as well as a strategy of how these impacts will be assessed further in the EIA phase.

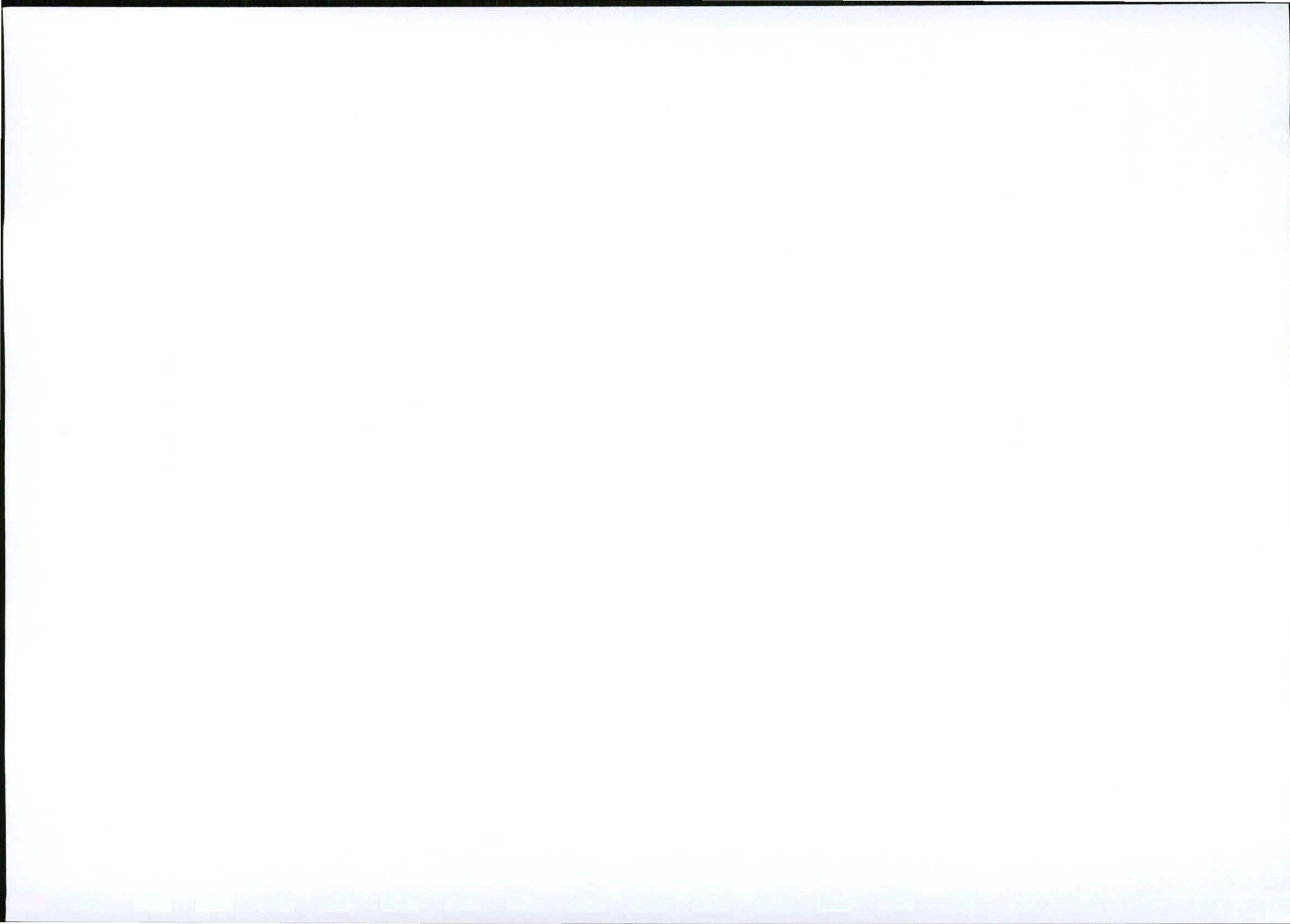
The impacts which may be significant for this project include: air quality, surface and ground water quality, social and economic impacts.

Plan of Study for Environmental Impact Assessment

The plan of study for EIA (Section 7 of the report) includes a description of EIA processes and tasks, specialist studies and consultation to be undertaken during the EIA phase of the Char Manufacturing Plant expansion environmental studies, as well as a proposed impact assessment methodology and impact assessment and rating criteria.

Study Team

Synergistics Environmental Services (Pty) Ltd (Synergistics) has been appointed by Exxaro Reductants



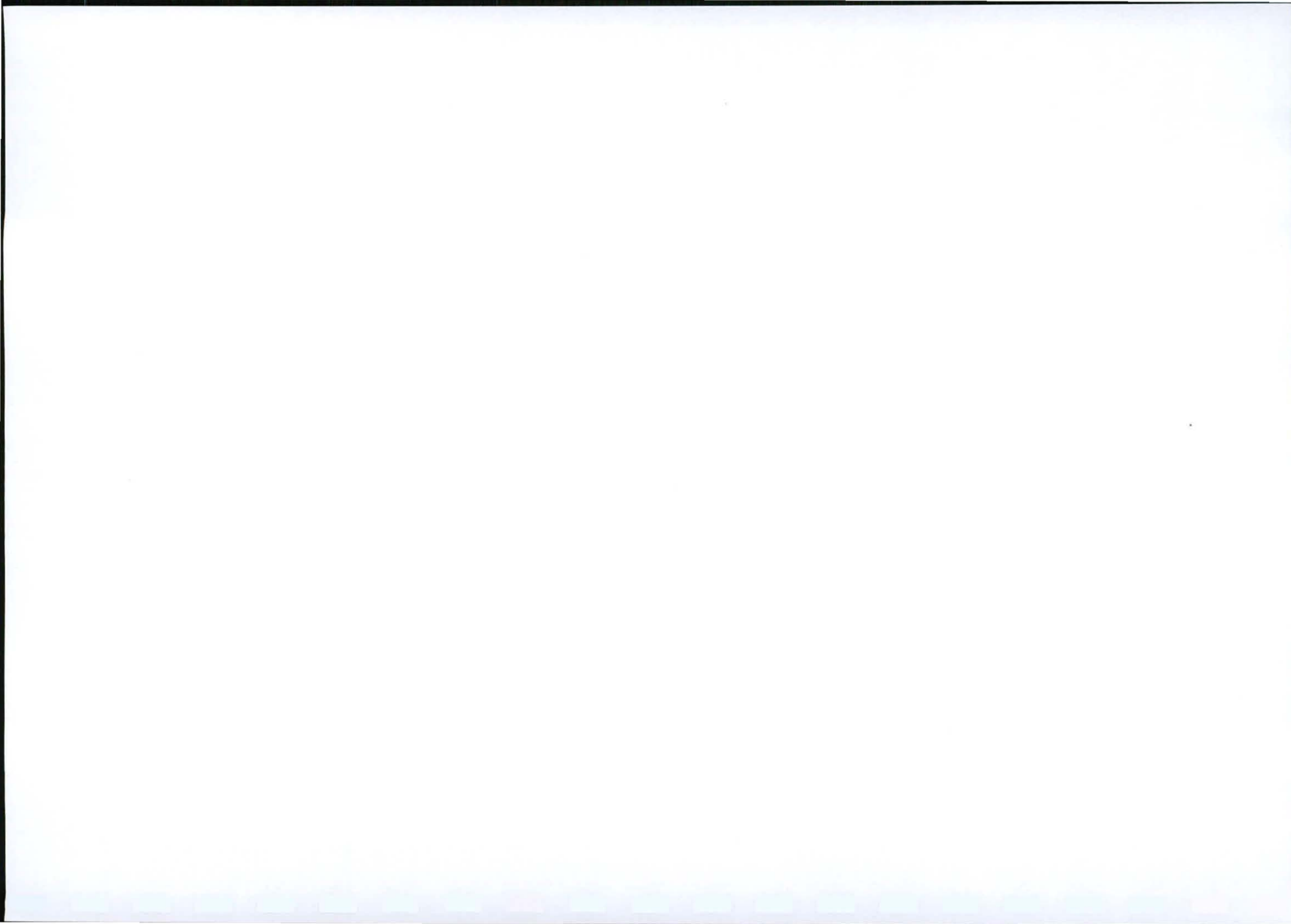
as the independent environmental consultant to undertake the EIA. Mari Wolmarans, a director of Synergistics, is an Environmental Assessment Practitioner (EAP) certified by the interim certification board of South Africa. Several specialists will undertake specialist studies as part of the EIA.

EIA Process

The EIA process has been developed to ensure that it complies with GNR 543 Sections 26 to 33 and the associated guidelines as well as the requirements of the MPRDA. The proposed EIA process and public participation process are illustrated below, with specific reference to the opportunities for consultation and participation for IAPs, Competent Authorities, and relevant State Departments and Organs of State.

Table A: Simplified EIA Process

EIA Phase	Opportunities for Consultation and Participation		Schedule		
	Competent Authorities (LEDET, DMR and DWA)	IAPs, State Departments and Organs of State			
Project Announcement and Application Phase	Specialist Baseline Studies	Initial telecommunication.	Project notification to affected landowners.	Aug 2010 and Mar 2011	
			Advertisements and project notifications to potential interested and affected parties.		Aug 2010 and Mar 2011
		Submit NEMA application form to LEDET. LEDET acceptance of application.			Aug 2010 and Apr 2011
		Initial consultation with authorities.			Aug 2010 and Mar 2011
Scoping Phase	Specialist Baseline Studies	Focused consultation with LEDET, DMR and DWA.	Initial public meetings.	Aug 2010 and Mar 2011	
			Focused consultation with Lephalale Municipality, Waterberg Municipality.		
		Draft scoping report to LEDET, DMR and DWA.	Review of draft scoping report (40 days, ±6 weeks).	May 2011 to July 2011	
		Final scoping report to LEDET, DMR and DWA. Review and acceptance of final scoping report (30 days)	Review of final scoping report (21 days, ±3 weeks).		
EIA Phase EMP Development	Specialist Assessments	Meetings with LEDET, DMR and DWA to discuss specialist studies.	Results of specialist assessments and recommendations made available for review	Aug 2011 to Nov 2011	
		Submit draft EIA report to LEDET, DMR and DWA.	Review of draft EIA report (40 days, ±6 weeks)		
		Submit draft IWWMP to DWA.	Review of draft IWWMP (40 days, ±6 weeks)		
		Meetings with LEDET, DMR and DWA during EIA.	Possible public and authority meeting during EIA phase (14 days' notice)		
Authority review and Authorisation Phase	Specialist Assessments	Final EIA report to LEDET, DMR and DWA. SUBMIT IWWMP with IWULA to DWA. LEDET Acceptance of EIA report (60 days)	Review of final EIA report (21 days, ±3 weeks) Review of Final IWWMP (21 days, ±3 weeks)	Dec 2011 to Apr 2012	
		Environmental Authorisation Granted / Refused (45 days) IWULA approved / rejected by DWA.			
			Notifications to IAPs regarding environmental authorisation (granted or refused).		
Appeal Phase / Pre-Construction Period		Consultation during processing of appeal.	Consultants to provide guidance regarding the appeal process as and when required.	Variable	



Specialist Studies

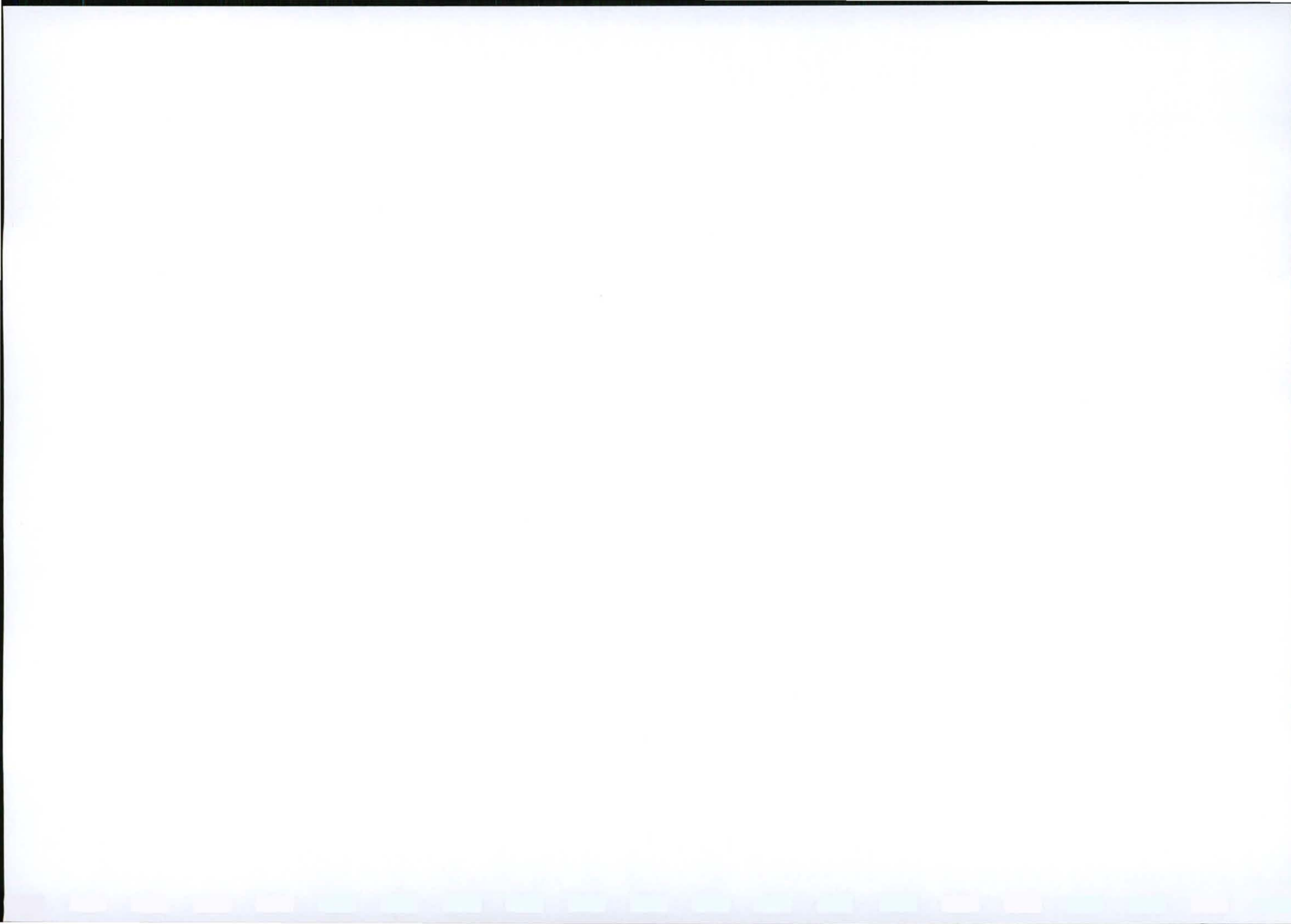
Specialist input and studies will be conducted for the following environmental components. The scope of work for these studies are outlined in the main report:

- Air Quality Assessment.
- Traffic Impact Assessment.
- Surface Water Assessment.
- Groundwater Assessment.
- Waste Stream Assessment.

Conclusions and Key Findings

This report concludes the scoping phase of the Char Manufacturing Plant expansion environmental assessment. It outlines the results of the public participation and authority consultation process undertaken in August 2010 and March 2011, explains the scope of specialist studies to be undertaken and defines the plan of study for the EIA phase. The next step will be to complete the specialist studies and further consultation processes that will inform the EIA and authority decision-making process.

It is deemed that the environmental process followed to date meets the requirements of the legislation to ensure that the regulatory authorities receive sufficient information to enable them to make an informed decision to accept the scoping report and approve the plan of study for EIA as outlined in Section 7 of this report.



S0342/SR01

May 2011

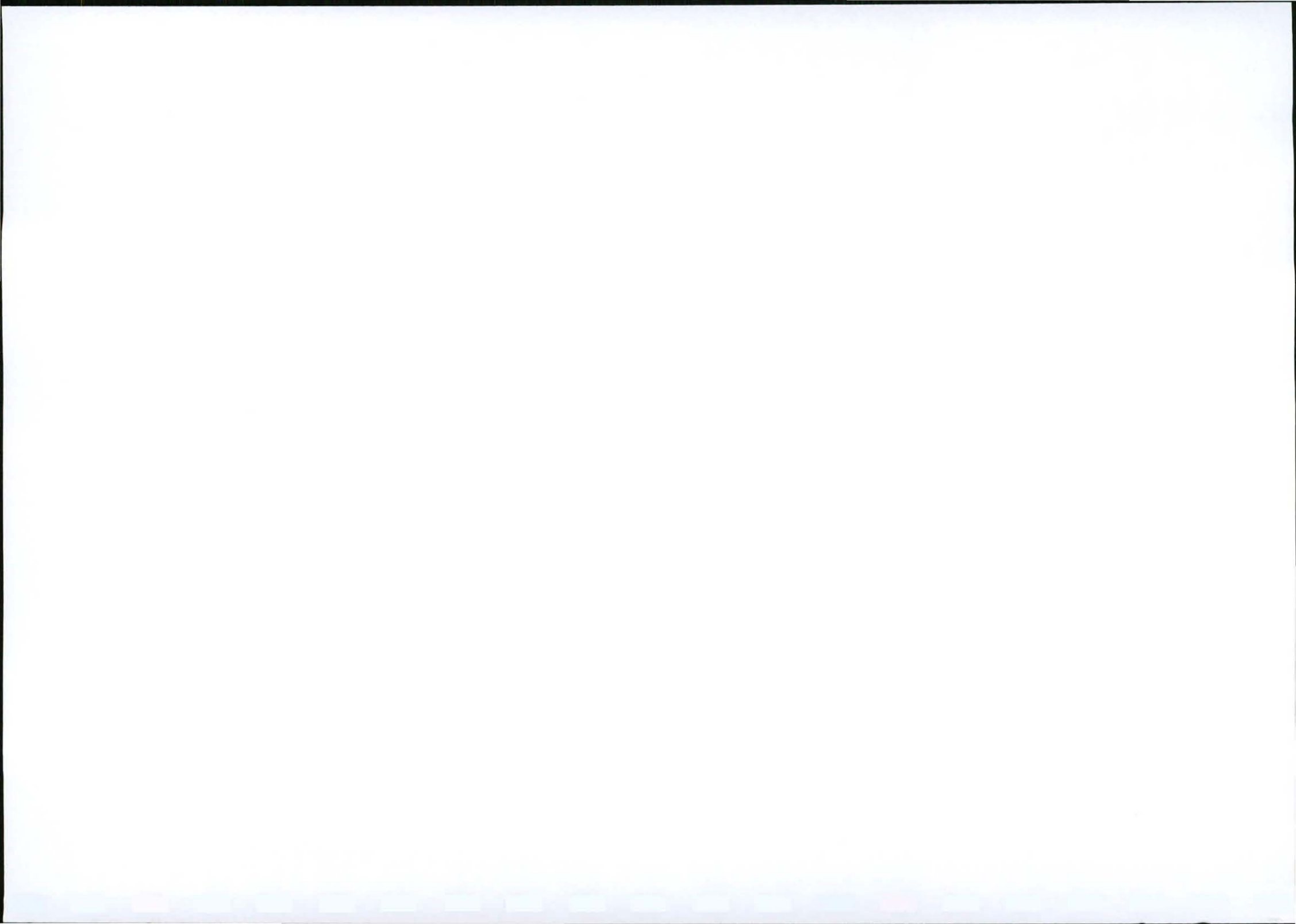
EXXARO REDUCTANTS (Pty) Ltd

Char Manufacturing Plant Expansion

Environmental Scoping Report (Draft)

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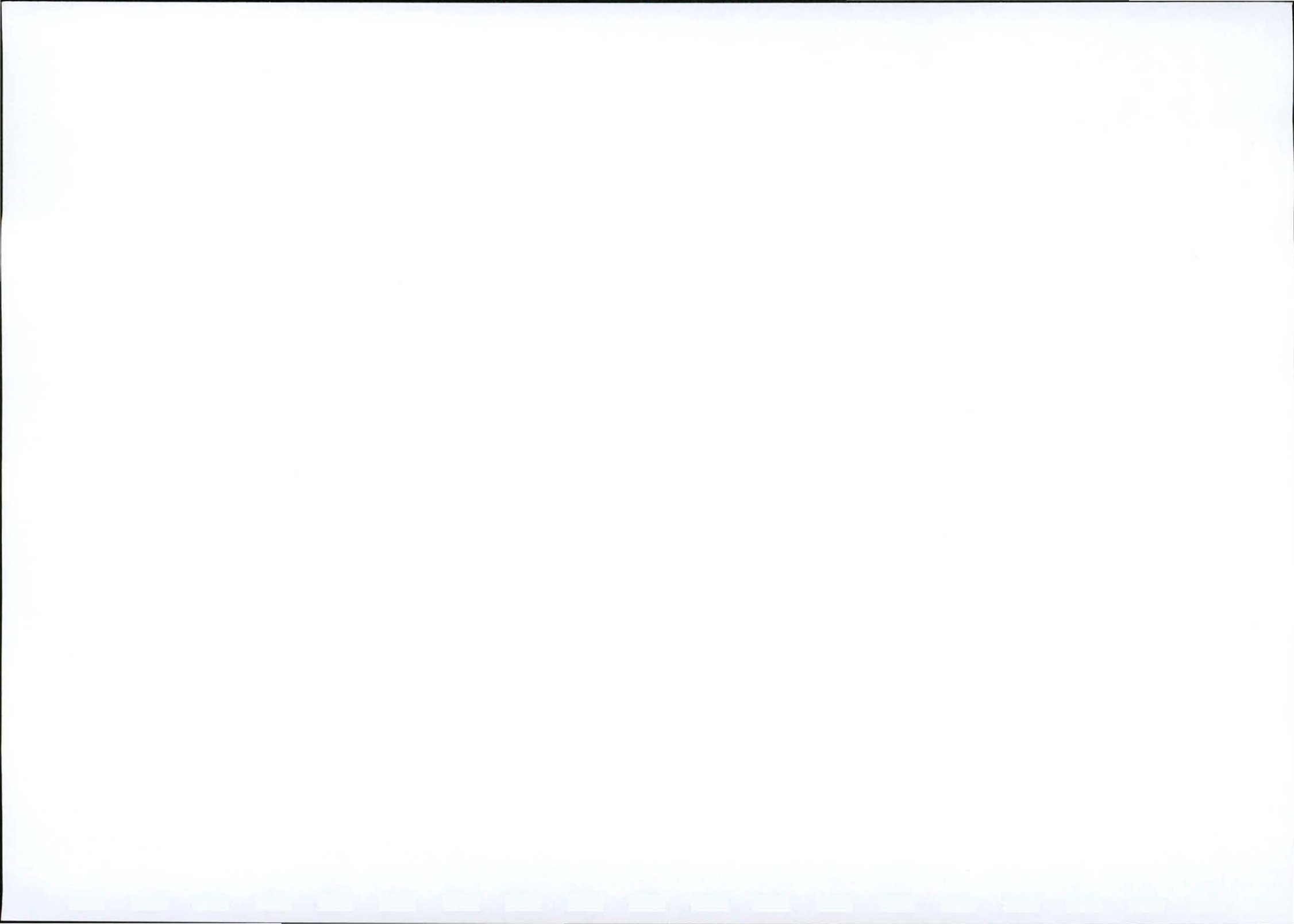


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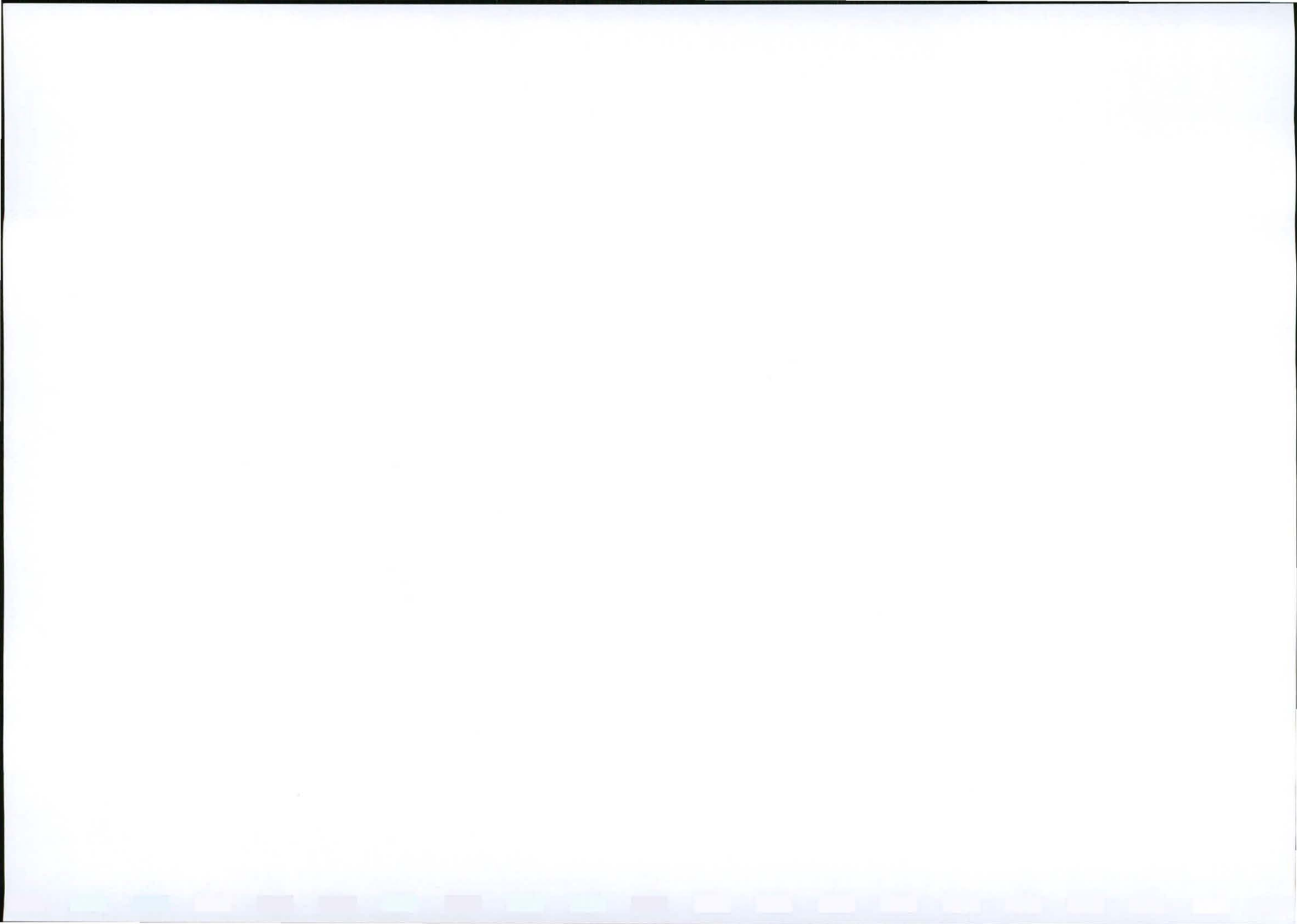


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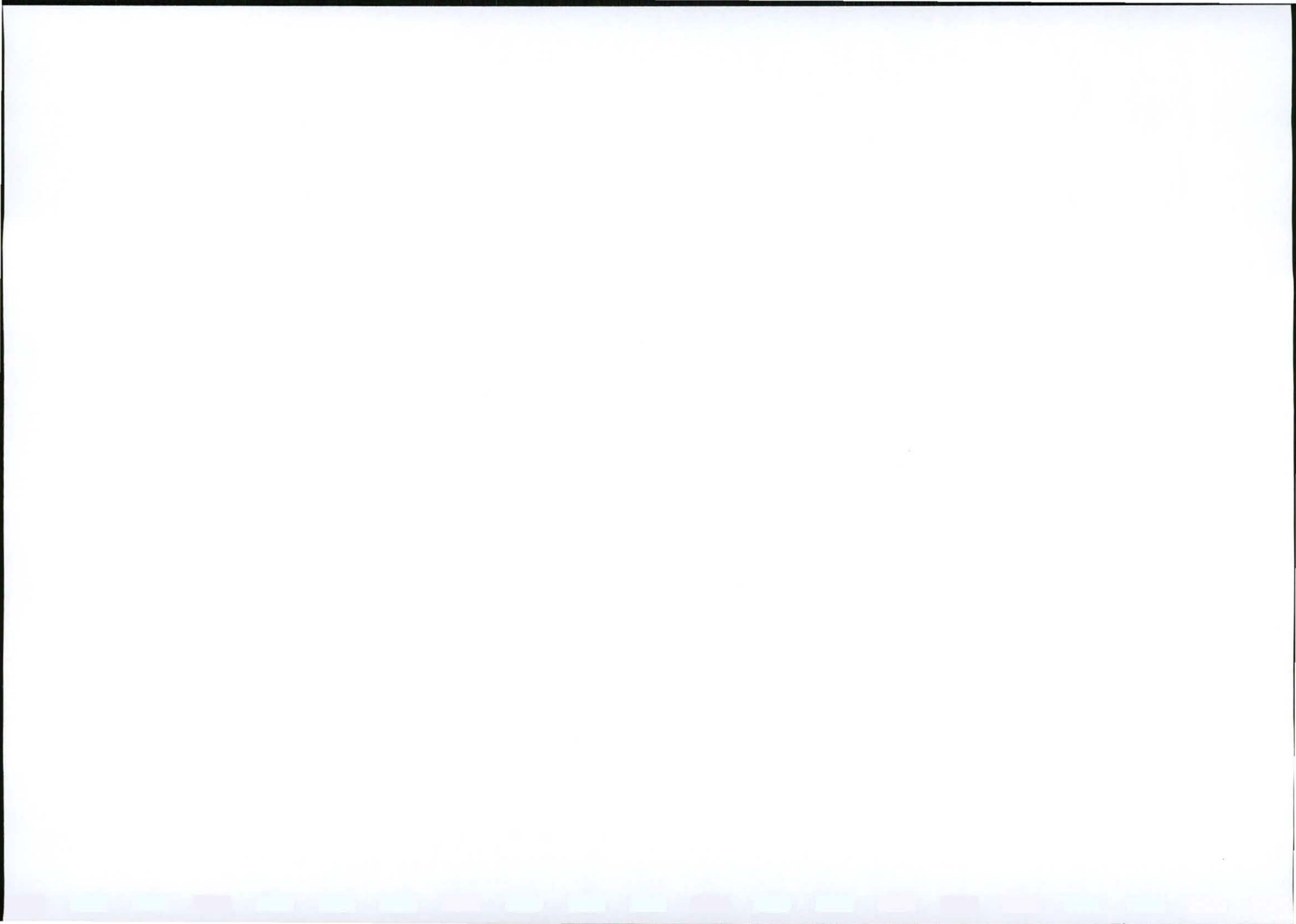
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LIST OF ABBREVIATIONS

APPA	Atmospheric Pollution Prevention Act (No. 45 of 1965)
BID	Background Information Document
BEE	Black Economic Empowerment
CO ₂	Carbon dioxide
DC	Direct current
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources (formerly the Department of Minerals and Energy (DME))



DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
EAP	Environmental Assessment Practitioner
EMP	Environmental Management Programme / Plan
ESP	Electrostatic precipitators
FeCr	Ferrochrome
GN	Government Notice
ha	Hectare/s
H ₂ O	Water
H ₂ S	Hydrogen sulphide
HDPE	High density polyethylene (plastic)
IAPs	Interested and Affected Parties
IWUL(A)	Integrated Water Use Licence (Application)
IWWMP	Integrated Water and Waste Management Plan
kPa	Kilo Pascal (unit of pressure)
ktpa	Kilo tonnes per annum
kVA	Kilovolt ampere
LEDET	Limpopo Department of Economic Development, Environment and Tourism
LPG	Liquid petroleum gas
MCWAP	Mokolo and Crocodile Water Augmentation Project
Mℓ	Mega (million) litres = 1000m ³
MPRDA	Minerals and Petroleum Resources Development Act
MVA	Megavolt ampere
NEMA	National Environmental Management Act
NEM:AQA	National Environmental Management: Air Quality Act
NEM:WA	National Environmental Management: Waste Act
NH ₃	Ammonia
NO _x	Nitrogen oxides
NWA	National Water Act
O ₂	Oxygen
PCD	Pollution control dam
PM10	Fine particulate matter with diameter less than 10 microns
SAHRA	South African Heritage Resources Agency
SLA	Service level agreement
SO ₂	Sulphur dioxide
tph	Tons per hour



GLOSSARY OF TERMS

Baseline Environment

Pre-development environmental conditions. The prevailing environmental conditions (or status quo) prior to the start of an activity or project, include current / existing environmental damage / degradation.

Baseline Impacts (Existing Impacts)

The current level of environmental degradation associated with existing developments, including those currently under construction. Determination of the current level of degradation associated with existing developments is essential to understand and enable the assessment of cumulative impacts.

By-product

A substance that is produced as part of a process that is primarily intended to produce another substance or product and that has the characteristics of an equivalent virgin product or material. (NEM:WA definition).

Char

Char is the solid material that remains after volatile gas (e.g. coal gas) and coal tar have been driven out or released from a carbonaceous material during the initial stage of combustion, which is known as carbonisation, charring or devolatilization.

Coke

Coke is the solid carbonaceous material derived from the distillation of coal to drive off its volatile constituents.

Cumulative Impacts

Combined impacts of two or more activities, or the combined impacts of an activity with that of current activities. For this report, cumulative impacts are described as:

$$\text{Existing Impacts} + \text{Incremental Impacts of the project} = \text{Cumulative Impacts}$$

Environment

Surroundings in which organisms operate, including air, water, land, natural resources, flora, fauna, humans and their inter-relations (includes bio-physical and socio-economic components).

Environmental Impact Assessment (EIA)

An EIA is an assessment of the positive and negative environmental consequences of the proposed project. The primary objective of the EIA is to aid decision-making by providing factual information on the assessment of these impacts, and determining their significance, as well as making valued judgements in choosing one alternative over another. For this EIA a combination of checklists, overlays and mapping, scoping and professional experience was used to identify the possible negative and positive impacts on the environmental components.

Fatal Flaw

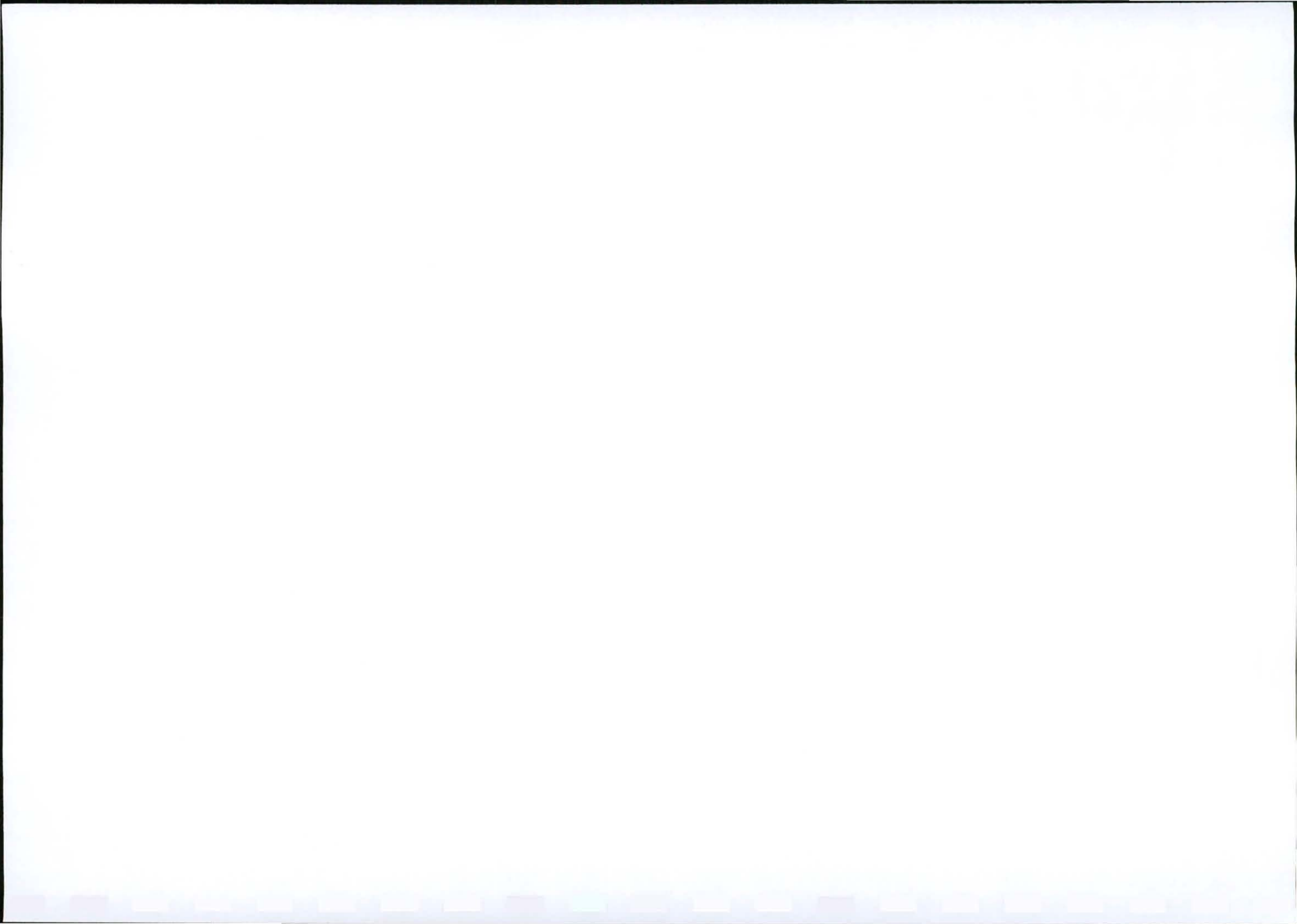
A factor or situation, which prevents the development of an environmentally acceptable project, except at prohibitive cost. These are critical issues with the ability to stop a project's implementation.

Existing Impacts

See Baseline Impacts.

Incremental Impact

This is the impact of an activity looked at in isolation (impact of an individual activity), thus not considering the combined, cumulative or synergistic impacts of the activity, or the cumulative impacts of the activity with other activities or the current level of degradation. For this report, incremental impacts refer to impacts of only the rail and associated infrastructure to be relocated.



Interested and Affected Parties (IAPs)

These are individuals or groups concerned with or affected by the environmental impacts and performance of a project. Interested groups include those exercising statutory environmental control over the project, local residents/communities (people living and/or working close to the project), the project's employees, customers, consumers, investors and insurers, environmental interest groups, the general public, etc.

Liquor

When the coal in the Char Manufacturing Plant is heated, and the tar has been removed from the coal off-gas, the remaining off-gas is cooled (condensed) to precipitate water which contains a small amount of hydrocarbon oils and sulphur. This precipitated water is known as liquor. The liquor is considered to be waste under NEMWA.

Manifold

A pipe or chamber having multiple apertures for making connections.

Microgram

One millionth (1/1 000 000) of a gram, or equivalently one thousandth (1/1 000) of a milligram.

Mineral (in terms of the Minerals and Petroleum Resources Development Act)

Any substance, whether in solid, liquid or gaseous form, occurring naturally in or on the earth or in or under water and which was formed by or subjected to a geological process, and includes sand, stone, rock, gravel, clay, soil and any material occurring in residue stockpiles or in residue deposits, but excludes:

Water, other than water taken from land or sea for the extraction of any material from such water; Petroleum; or Peat.

Mining

Mining is the making of any excavation for the purpose of winning a mineral, and it includes any other associated activities and processes (MPRDA).

Mining Area

The area for which a mining authorisation/permission to mine has been granted. It includes:

- Any adjacent surface of land;
- any non-adjacent surface of land, if it is connected to such an area by means of any road, railway line, power line, pipe line, cable way or conveyer belt; and
- any surface of land on which such road, railway line, power line, pipe line, cable way or conveyer belt is located, under the control of the holder of such permit or authorisation and which the holder is entitled to use in connection with the operations performed or to be performed under such permit or authorization (MPRDA).

PM10

Fine inhalable particles (smaller than 10 μm) found in the air. When inhaled, PM10s could cause damage to the lower airways and lungs.

Receptor

A receptor is the target or object on which the impact, stressor or hazard is expected to have an effect.

Reductant (Carbon based)

A reductant is a substance that is able to oxidise (donate an electron) to another substance. A carbon reductant (e.g. char) is used with heat to change the oxidation state of a metal ore. The carbon or carbon monoxide derived from it removes oxygen from the ore with the metal remaining.

Retort

A retort is an air tight vessel in which substances are heated for a chemical reaction.



Sensitive Area

A sensitive area or environment can be described as an area or environment where a unique ecosystem, habitat for plant and animal life, wetlands or conservation activity exists or where there is a high potential for eco-tourism. Sensitive environments are limited development areas in terms of Section 23 of the Environment Conservation Act 73 of 1989. These include:

- Protected natural environments and national heritage sites.
- National, provincial, municipal and private nature reserves.
- Conservation areas and sites of conservation significance.
- National monuments and gardens of remembrance.
- Archaeological and palaeontological sites.
- Graves and burial sites
- Lake areas, offshore islands and the admiralty reserve. Estuaries, lagoons, wetlands and lakes.
- Streams and river channels, and their banks.
- Dunes and beaches.
- Caves and sites of geological significance.
- Battle and burial sites.
- Habitat of Red Data Book species.
- Areas or sites of outstanding natural beauty.
- Areas or sites of special scientific interest.
- Areas or sites of special social, cultural or historical interest.

Significant Impact

An impact can be deemed significant if consultation with the relevant authorities and other interested and affected parties, on the context and intensity of its effects, provide reasonable grounds for mitigating measures to be included in the environmental management report. The onus will be on the proponent to include the relevant authorities and other interested and affected parties in the consultation process. Present and potential future, cumulative and synergistic effects should all be taken into account.

Spontaneous Combustion

A type of combustion which occurs without an external ignition source. Coal reacts with atmospheric oxygen, which results in an exothermic reaction and when the temperature reaches the ignition temperature of coal, the coal starts to burn.

Tar

The tar (coal tar) is a black liquid of high viscosity, which smells of aromatic hydrocarbons. Coal tar is a by-product, formed when coal is carbonised to produce char. When the coal in the Char Manufacturing Plant is heated, tar is produced as a liquid substance which has been removed (precipitated) from the coal off-gas. As the tar is currently sold, it is considered a by-product and thus does not fall within the definition of waste as stated in the NEMWA.

Waste

Any substance, whether or not that substance can be reduced, re-used, recycled and recovered—

- (a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
- (b) which the generator has no further use of for the purposes of production;
- (c) that must be treated or disposed of; or
- (d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but—
 - (i) a by-product is not considered waste; and
 - (ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste. (NEM:WA definition)



EXXARO REDUCTANTS (Pty) Ltd

Char Manufacturing Plant Expansion

Environmental Scoping Report

(Draft)

1. Introduction to the Project

1.1 Project Background and Location

Exxaro Reductants (Pty) Ltd (Exxaro Reductants) operate the existing Char Manufacturing Plant located on the Farm Daarby 458 LQ, within the boundaries of the Grootegeluk Coal Mine (Figure 3 and Figure 4), approximately 20 km west of Lephalale (formerly Ellisras) in the Limpopo Province. The mine is situated within the Waterberg Coal field and has been in operation since the early 1980's. It is adjacent to two major clients of the mine - the Matimba and Medupi Power Stations. Access to the mine is from an east-west aligned provincial tarred road, the D2001, between Lephalale and Stokpoort.

The Grootegeluk Mine is the country's largest single coal processing complex. Most of the production is thermal coal, which is sent to Eskom's Matimba and Medupi Power Stations by means of overland conveyor belt. About 18% of the mine's production consists of semi-soft coking and metallurgical quality coal, which is sold to local and international steel and ferro-alloy plants.

The existing Char Manufacturing Plant was built on an old coal stockpile area and has been operational since 2009. This plant is owned and operated by Exxaro Reductants which is a subsidiary of and separate entity to Exxaro Coal (Pty) Ltd, who own the Grootegeluk Coal Mine.

The construction of the existing Char Manufacturing Plant was completed in 2008 and has a production capacity of 140 ktpa of char. The existing plant occupies an area of approximately 5.5 ha. The entire area of land leased by the Char Manufacturing Plant from Grootegeluk Mine is approximately 13.9 ha and includes associated infrastructure such as the pollution control dam, the workshops and the offices. Exxaro Reductants now wishes to expand the Char Manufacturing Plant by increasing the number of retorts from 4 to a maximum of 12, thereby increasing their production capacity threefold. The majority of the infrastructure associated with the retorts will therefore also be expanded. This expansion will be located adjacent to the existing Char Manufacturing Plant, also on the Farm Daarby 458 LQ.

1.2 Project Motivation

Char is used in the metals industry to reduce oxygen from ore to produce the basic metal. Exxaro Reductants has entered into the reductants market with the existing Char Manufacturing Plant targeting the Ferrochrome market (see figure 1). Ferrochrome is the main constituent in the production of stainless steel. There is a demand for increased production of char within this market, which the Char Manufacturing Plant expansion aims to address. Exxaro Reductants is in a prime position with the



existing plant already in production, readily available coal feedstock and in close proximity to their customers.

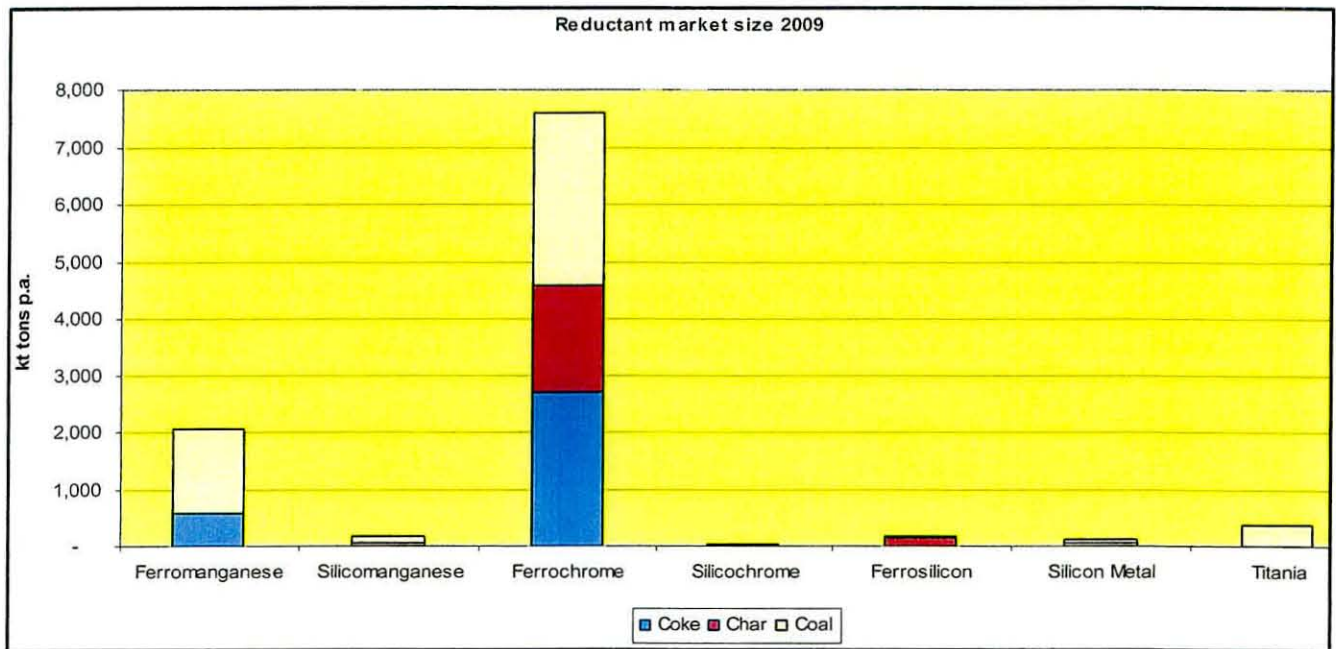


Figure 1: Reductant market size in 2009

In addition, Exxaro would like to invest more in char production opportunities due to the high profit margins on this product (as shown in figure 2).

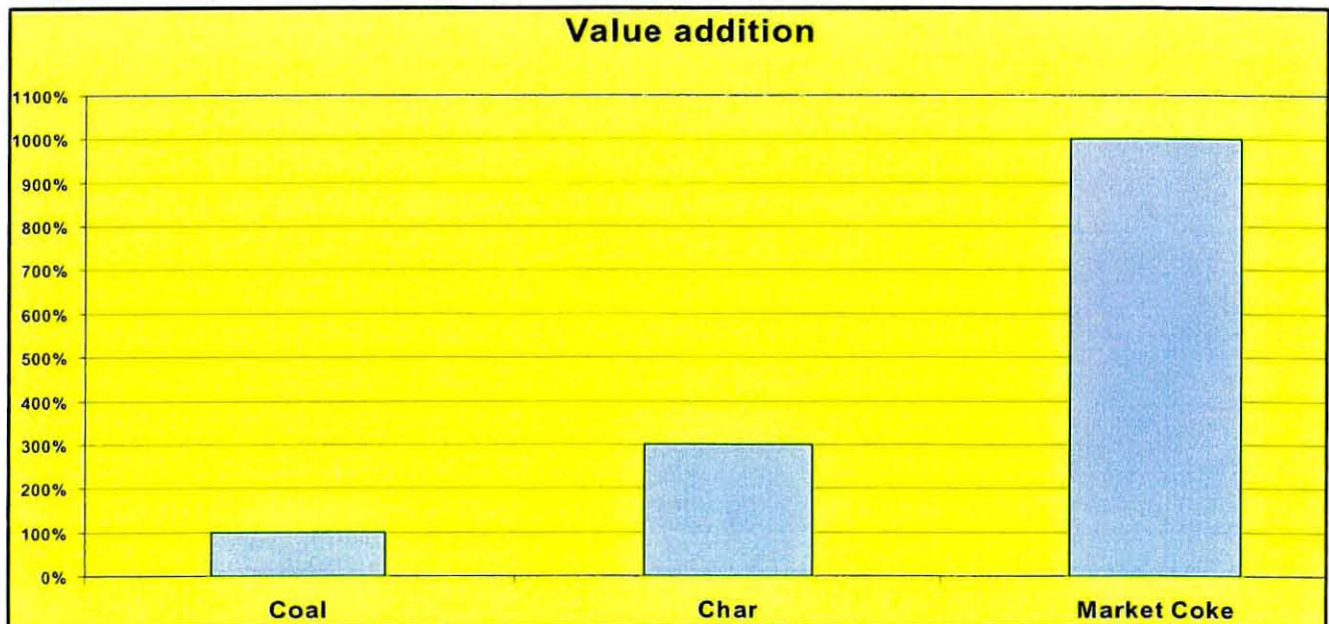
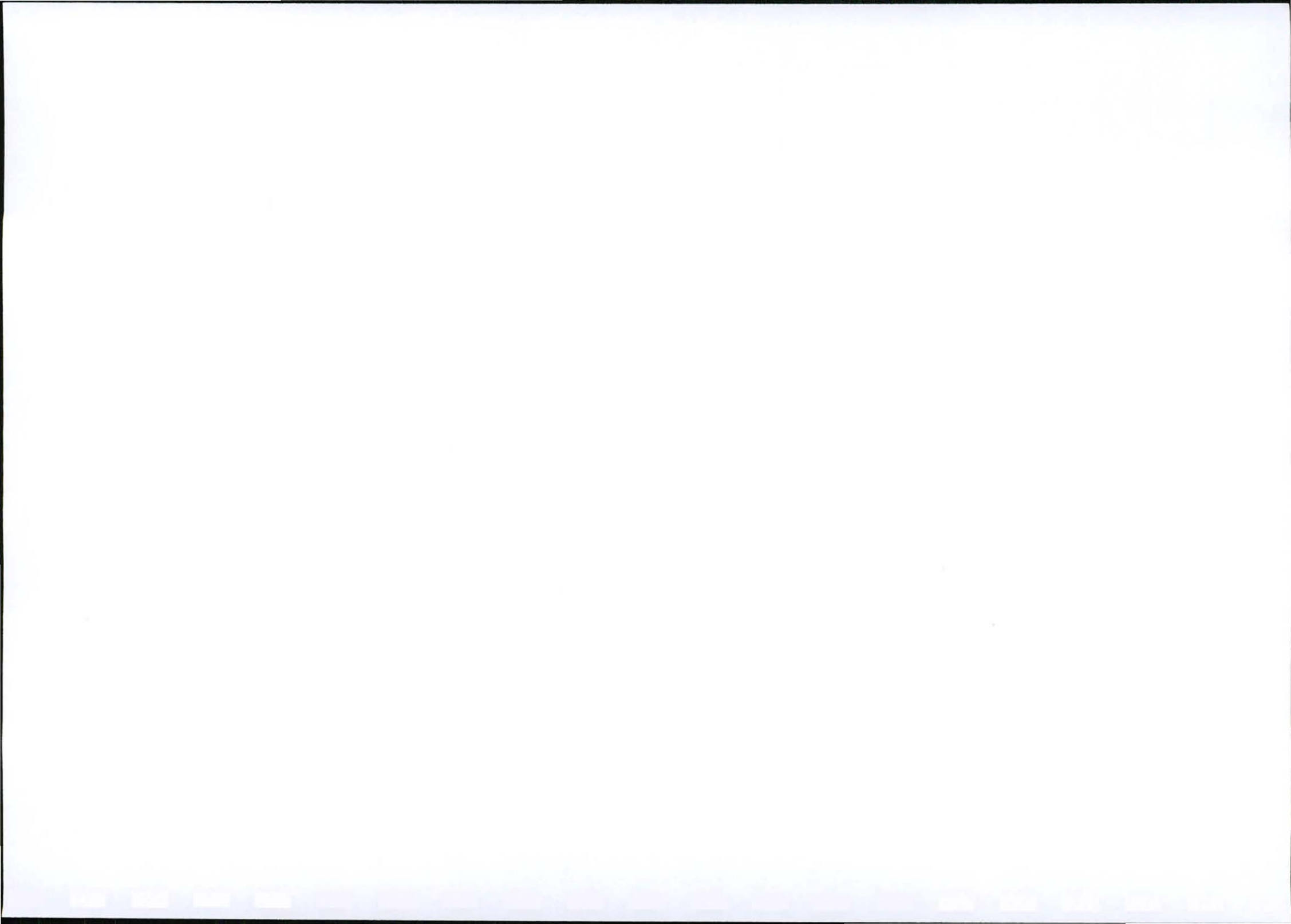


Figure 2: Increase in value addition created by downstream beneficiation of coal.

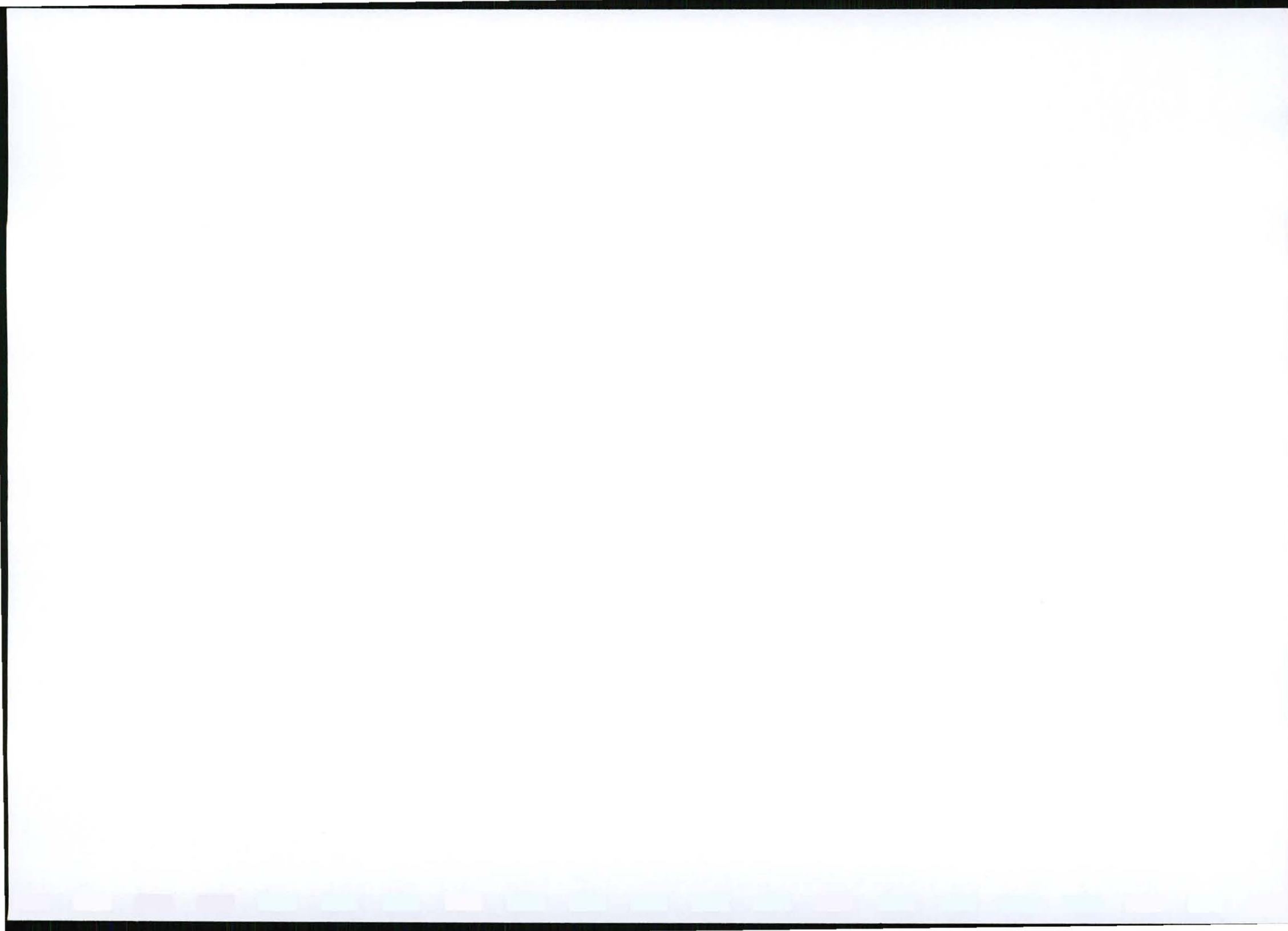
1.3 Project Need and Desirability

The expansion of the Char Manufacturing Plant is required in order to:

- Enable Exxaro Reductants to stay in operation and earn a profit.



- Enable Exxaro Reductants to produce a sufficient quantity of char, which is demanded by its clients.
- Ensure that South African char consumers source char from within South Africa and do not obtain it from overseas suppliers.
- Safeguard the employment and economic development opportunities created by the existing Char Manufacturing Plant.



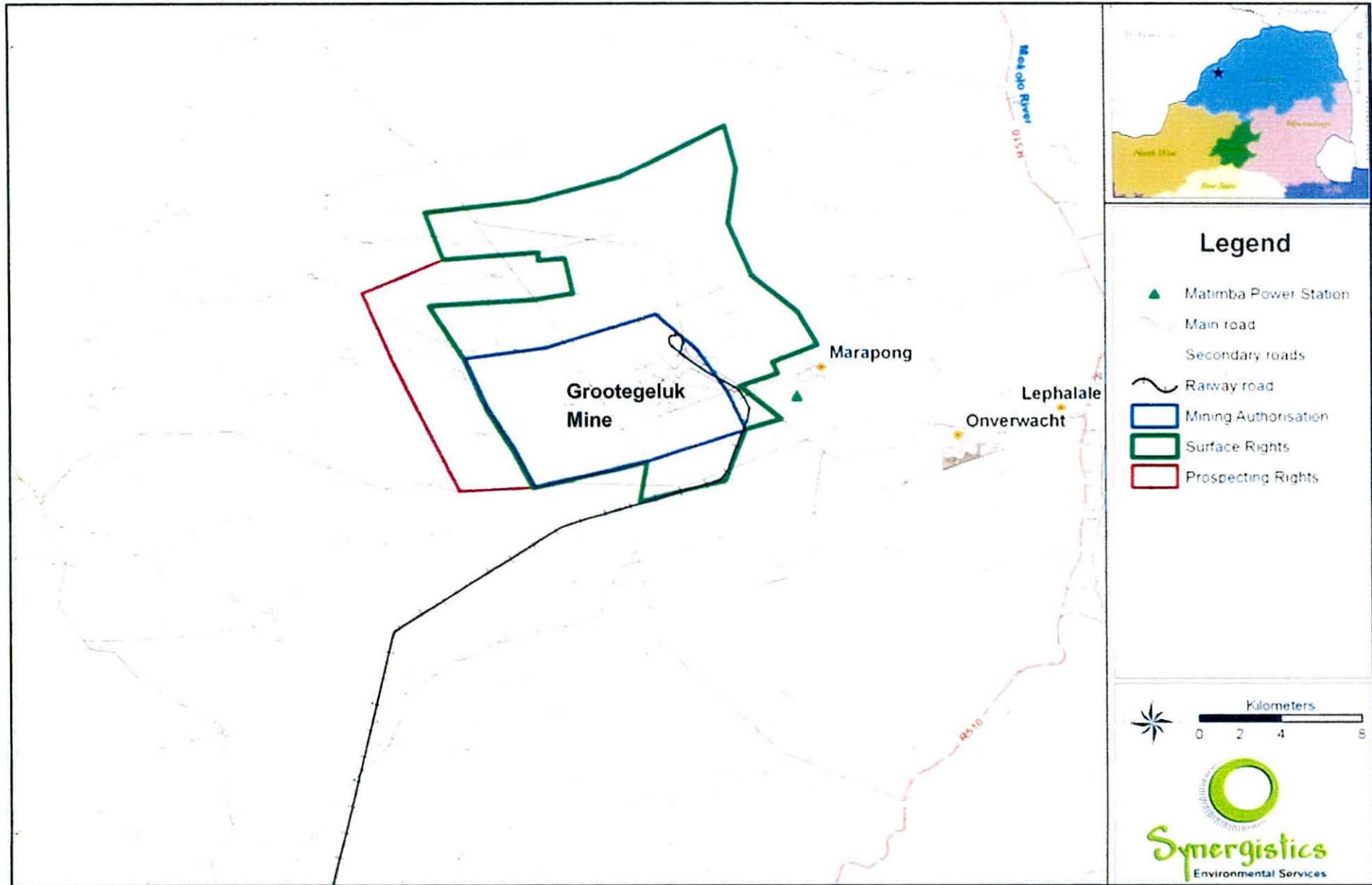
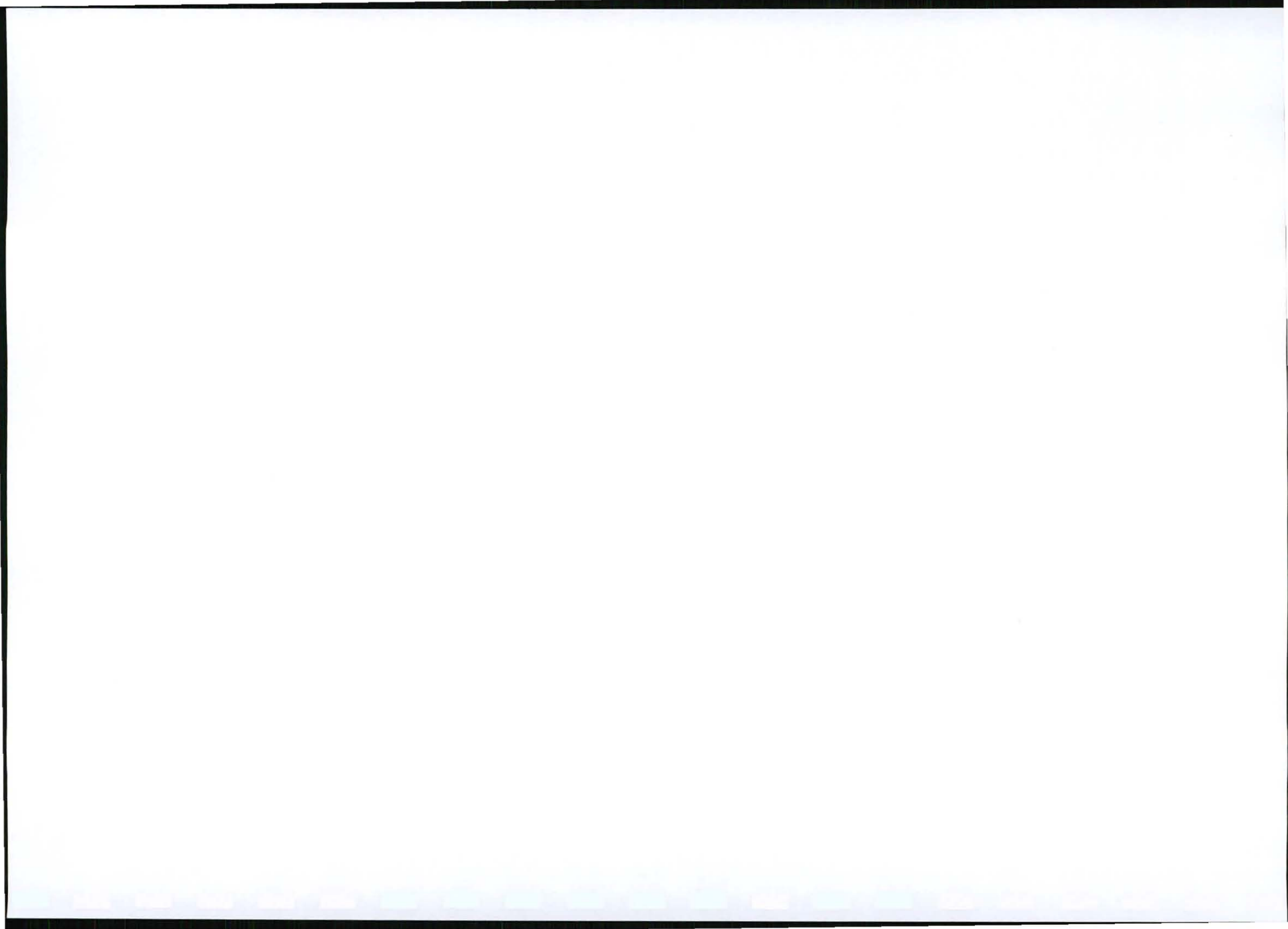


Figure 3: Regional location of the Grootegeluk Mine within which the Char Manufacturing Plant will be expanded



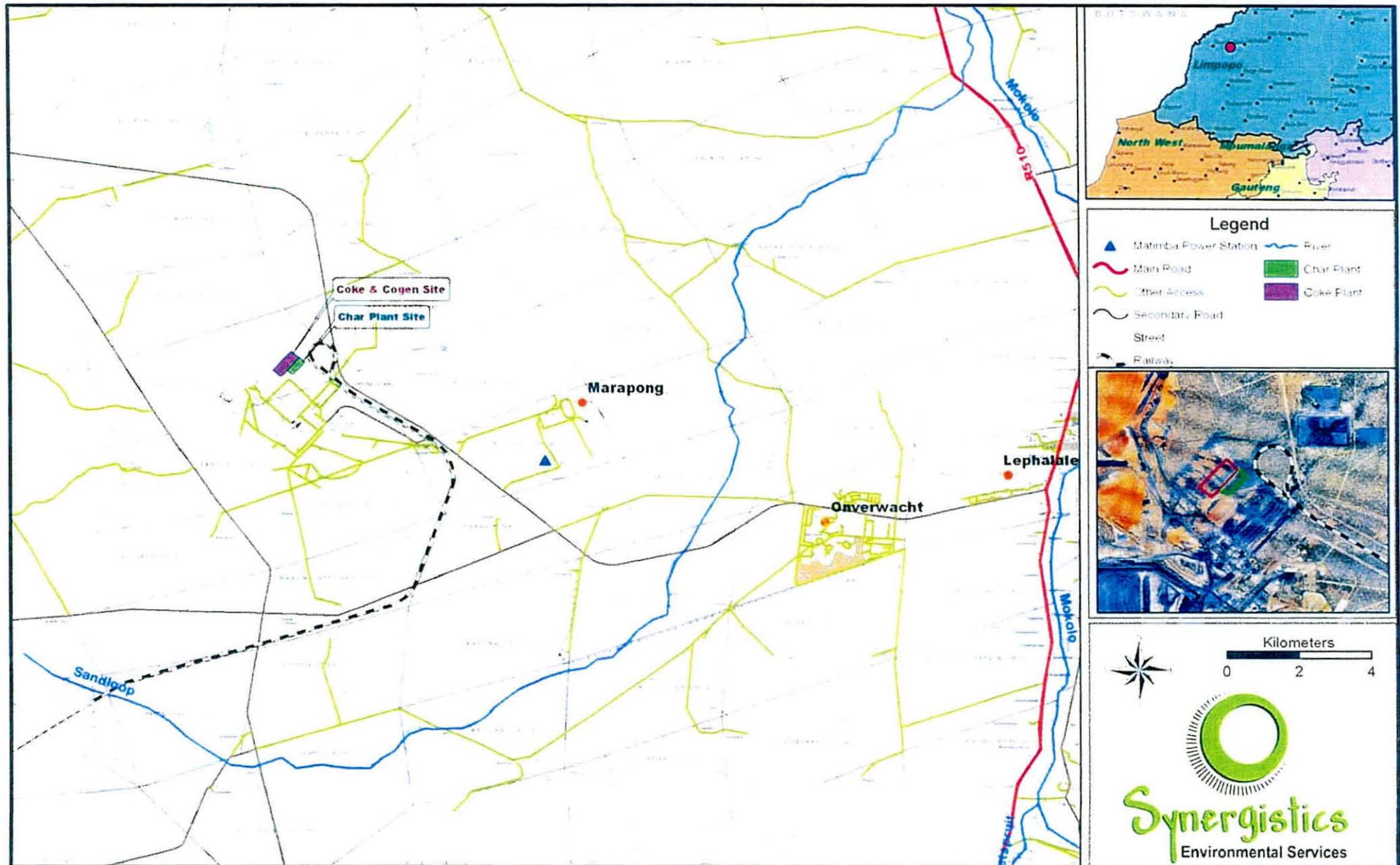
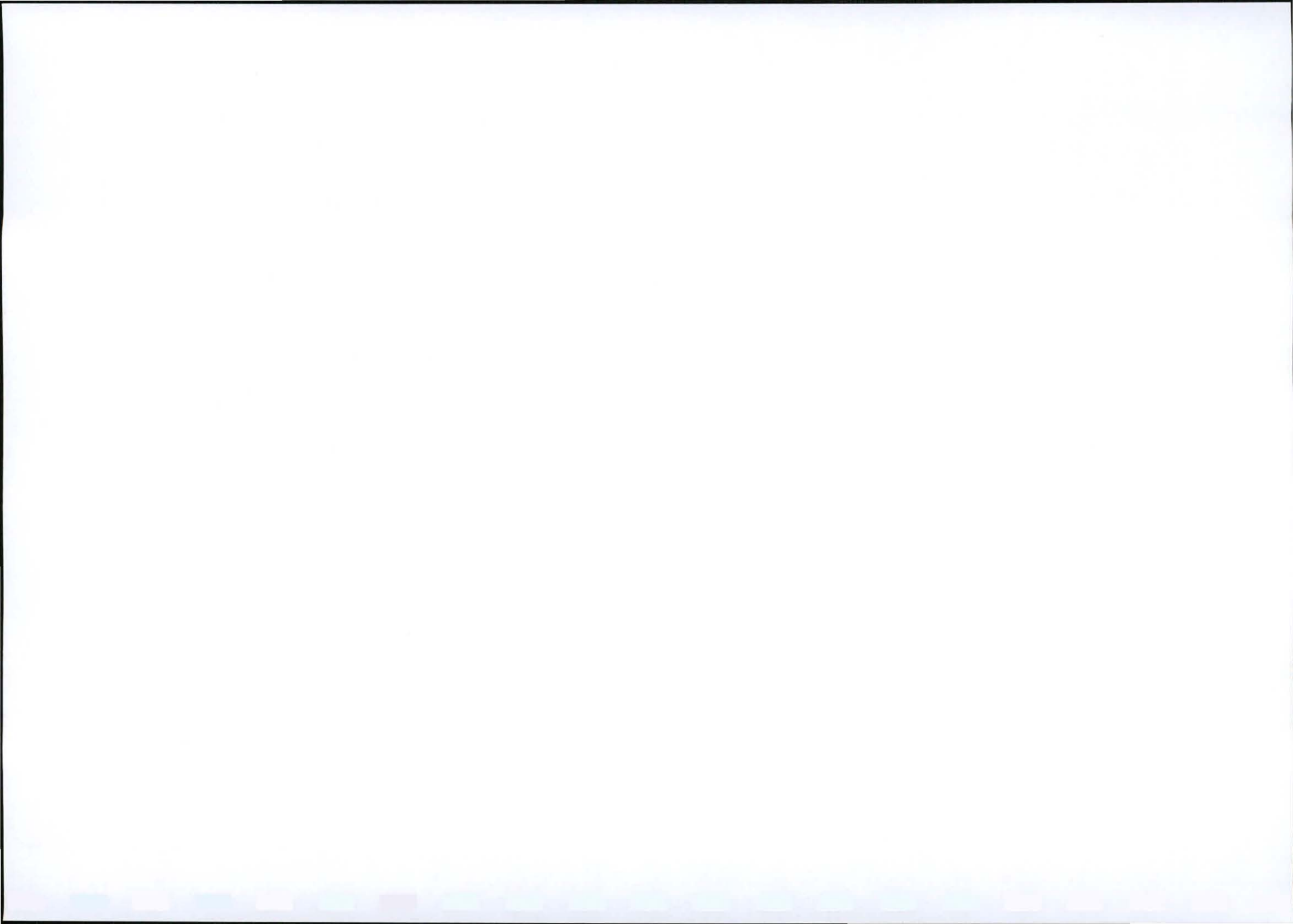


Figure 4: Location of the Char Manufacturing Plant at Grootegeluk Mine



1.4 Environmental Legal Requirements and Terms of Reference

An Environmental Impact Assessment (EIA) for the existing Char Manufacturing Plant was undertaken by Clean Stream Environmental Services in 2005/2006. Authorisation for the EIA was obtained in 2006 and the Char Manufacturing Plant operates in accordance with the existing authorisation (LEDET ref. no. 16/1/12-29). An Integrated Water Use Licence Application (IWULA) was compiled for the greater Grootegeluk Mine in 2007, which included the Char Manufacturing Plant. The authorisation for the IWULA was obtained in June 2010.

The key legislation applicable to the proposed Char Manufacturing Plant Expansion project includes:

- The National Environmental Management Act (No. 107 of 1998) (NEMA);
- The Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA);
- The National Water Act (No. 36 of 1998) (NWA);
- The National Environmental Management: Waste Act (No. 59 of 2008) (NEMWA); and
- The National Environmental Management: Air Quality Act (No. 39 of 2004) (NEMAQA).

There will be five key deliverables for the Char Manufacturing Plant Expansion project, each of which will be submitted to the relevant government department. These are:

- An Environmental Impact Assessment (EIA) in accordance with NEMA will be submitted to the Limpopo Department of Economic Development, Environment and Tourism (LEDET) for activities that are listed in terms of the EIA Regulations;
- An EIA and Environmental Management Programme (EMP) in accordance with the MPRDA will be submitted to the Department of Mineral Resources (DMR) for approval;
- An amendment to the Integrated Water Use Licence Application (IWULA) will be submitted to the Department of Water Affairs (DWA);
- A Waste Management Licence in accordance with NEMWA may be submitted to the National Department of Environmental Affairs (DEA) or LEDET for approval (depending on the type of waste produced); and
- An Atmospheric Emissions Licence in accordance with the NEMAQA will be submitted to LEDET for approval.

Synergistics Environmental Services has been appointed as the independent consultants to undertake the required environmental work on behalf of Exxaro Reductants (Pty) Ltd, as required by the applicable environmental legislation.

1.4.1 Environmental Impact Assessment (EIA) Process and Listed Activities

The National Environmental Management Act, 1998 (No. 107 of 1998) and the Environmental Impact Assessment Regulations (GN R 543, 544, 545 and 546, 18 June 2010) published thereunder, set out a schedule of listed activities that may not be undertaken without environmental authorisation from a competent authority. The EIA Regulations (GN R 543) define the requirements for the submission, processing, consideration and decision of applications for environmental authorisation of listed activities. Any activity that is captured in these lists requires environmental authorisation from the competent authority.

In accordance with the legislation, the listed activities in Table 1 below require approval from the LEDET.

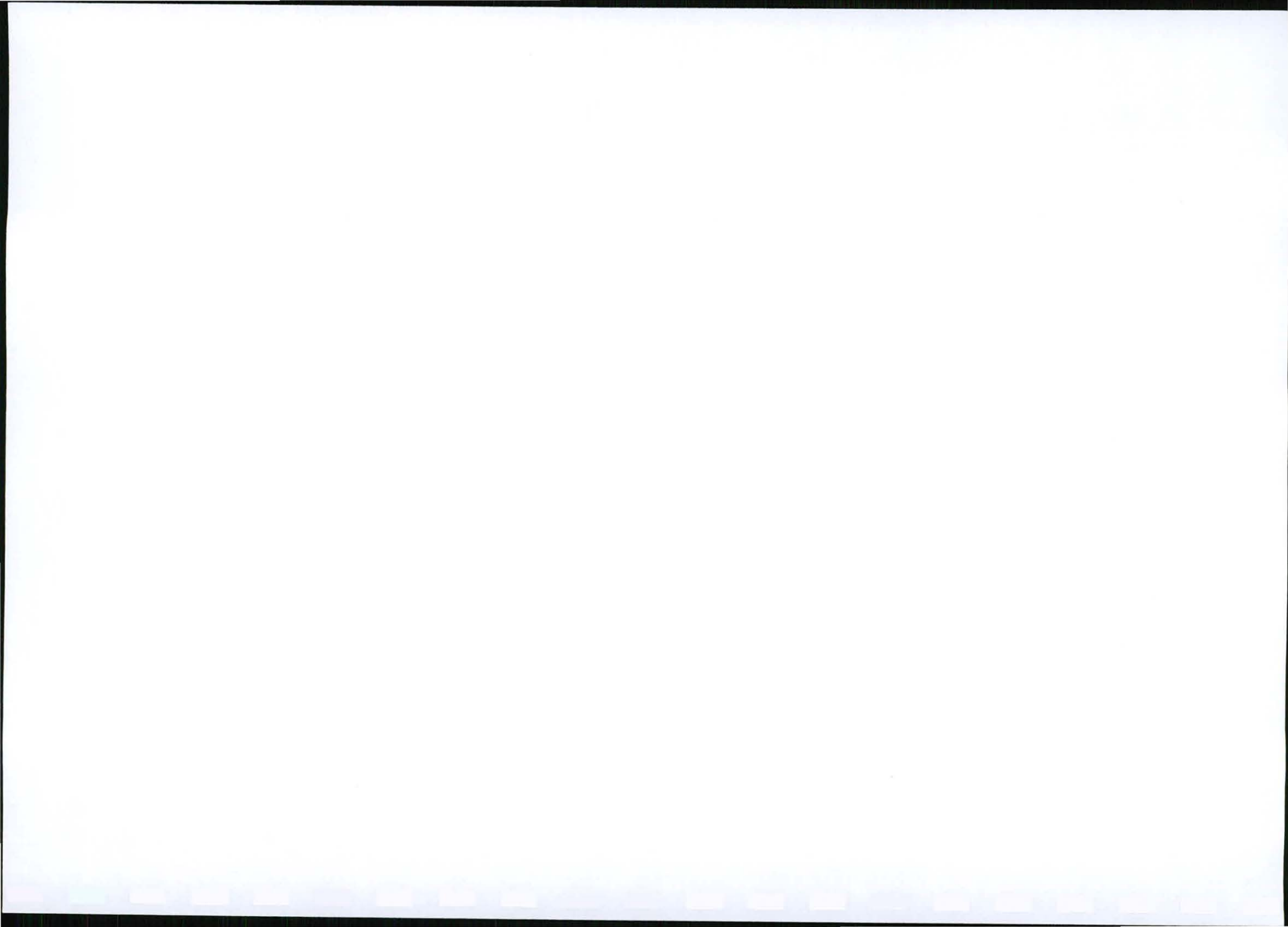
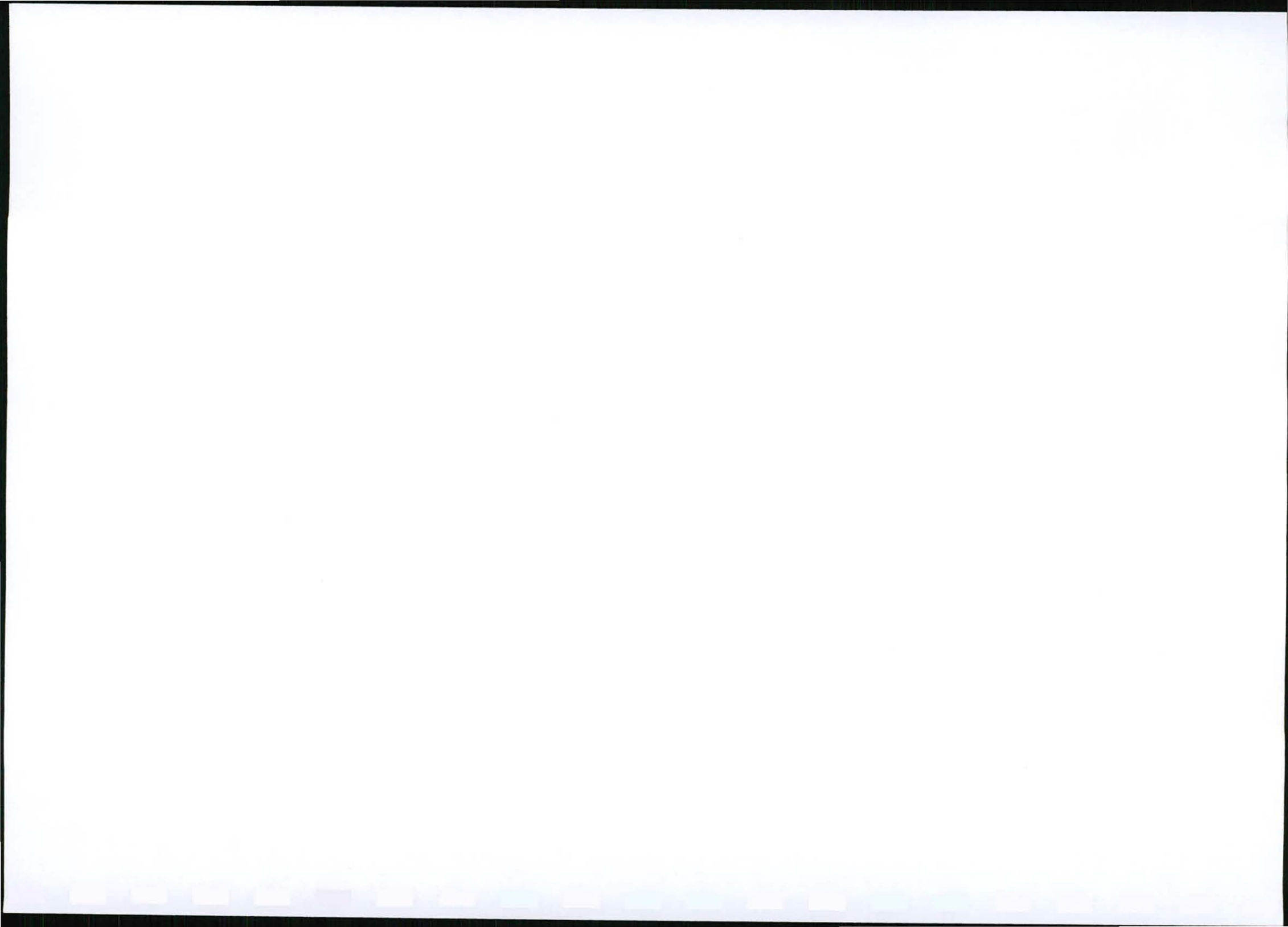
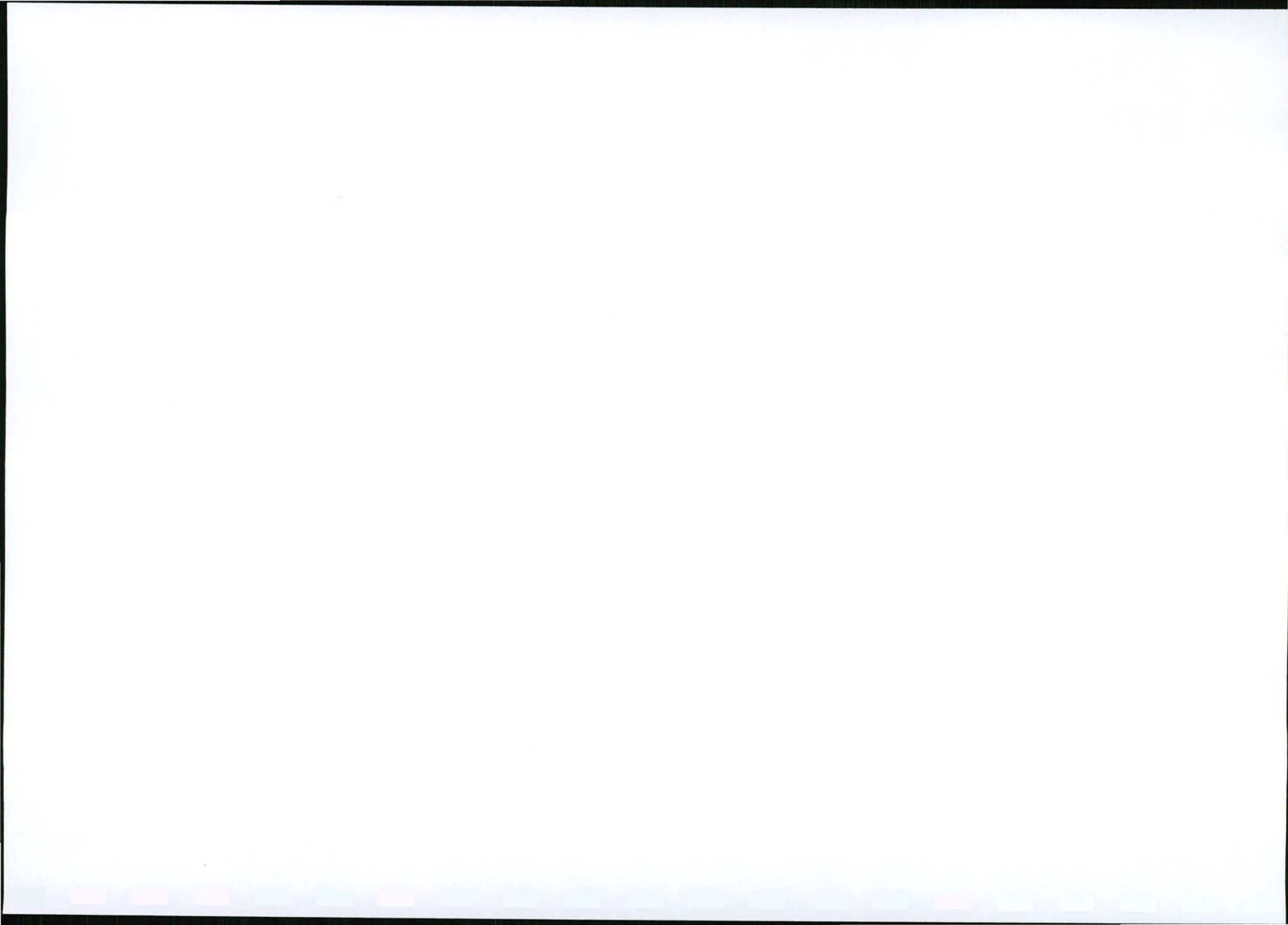


Table 1: NEMA Listed Activities Applicable to the Char Manufacturing Plant Expansion (GNR 544, GNR 545 and GNR 546)

Government Notice	Activity No.	Listed Activity	Applicability to the Char Manufacturing Plant Expansion
Activities requiring a Basic Assessment in terms of GNR 544 (Listing 1)			
R544, 18 June 2010	Activity No. 9	<p>The construction of facilities or infrastructure exceeding 1 000 meters in length for the bulk transportation of water, sewage or storm water –</p> <ul style="list-style-type: none"> (i) with an internal diameter of 0.36 meters or more; or (ii) with a peak throughput of 120 liters per second or more, excluding where: <ul style="list-style-type: none"> (a) such facilities or infrastructure are for bulk transportation of water, sewage or storm water or storm water drainage inside a road reserve; or (b) where such construction will occur within urban areas but further than 32 meters from a watercourse, measured from the edge of the watercourse. 	<p>The Char Manufacturing Plant Expansion project will involve constructing pipe lines and channels for the bulk transportation of storm water which will be approximately 1500m long and have an internal diameter of 0.5m.</p> <p>The exact details will be determined during the EIA.</p>
R544, 18 June 2010	Activity No. 12	<p>The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic meters or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010;</p>	<p>The Char Manufacturing Plant Expansion project will involve the construction of a pollution control dam, a settling pond, and a raw water storage dam and the combined capacity will be approximately 70 000 cubic metres.</p> <p>The exact details will be determined during the EIA.</p>
R544, 18 June 2010	Activity No. 22	<p>The construction of a road, outside urban areas,</p> <ul style="list-style-type: none"> (i) with a reserve wider than 13,5 meters or, (ii) where no reserve exists where the road is wider than 8 meters, or <p>for which an environmental authorization was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Notice 545 of 2010.</p>	<p>The Char Manufacturing Plant Expansion project will require the construction of a new road which will be approximately 9m wide and 400m long.</p> <p>The exact details will be determined during the EIA.</p>



Government Notice	Activity No.	Listed Activity	Applicability to the Char Manufacturing Plant Expansion
Activities requiring a Basic Assessment in terms of GNR 544 (Listing 1)			
R544, 18 June 2010	Activity No. 23	<p>The transformation of undeveloped, vacant or derelict land to –</p> <p>(i) residential , retail, commercial, recreational, industrial or institutional use, inside an urban area, and where the total area to be transformed is 5 hectares or more, but less than 20 hectares, or</p> <p>(ii) residential, retail, commercial, recreational, industrial or institutional use, outside an urban are and where the total area to be transformed is bigger than 1 hectare but less than 20 hectares;-</p> <p>except where such transformation takes place for linear activities.</p>	<p>The Char Manufacturing Plant Expansion project will involve the transformation of undeveloped mine land, outside an urban area, into an expanded industrial mine plant approximately 8 hectares in size.</p> <p>The exact details will be determined during the EIA.</p>
R544, 18 June 2010	Activity No. 28	<p>The expansion of existing facilities for any process or activity where such an expansion will result in the need for a new or amendment of, an existing permit or license in terms of national or provincial legislation governing the release of emissions or pollution, excluding where the facility, process or activity is included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste act, 2008 (Act No. 59 of 2008) in which case that Act will apply.</p>	<p>The Char Manufacturing Plant Expansion project will require an amendment to the existing and approved Grootegeluk Mine Water Use License. The license includes information controlling polluted water and this project will increase the amount of polluted water to be controlled.</p> <p>The Char Manufacturing Plant Expansion project will also require a new Atmospheric Emissions License. The license includes information governing the release of emissions and this project will increase atmospheric emissions.</p>
R544, 18 June 2010	Activity No. 37	<p>The expansion of facilities or infrastructure for the bulk transportation of water, sewage or storm water where:</p> <p>(a) the facility or infrastructure is expanded by more than 1000 meters in length; or</p> <p>(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more-</p> <p>excluding where such expansion:</p> <p>(i) relates to transportation of water, sewage or storm water within a road reserve; or</p> <p>(ii) where such expansion will occur within urban areas but further than 32 meters from a watercourse, measured from the edge of the watercourse.</p>	<p>The Char Manufacturing Plant Expansion project will involve increasing the capacity of pipelines and channels for the bulk transportation of storm water which will be expanded by approximately 1500m.</p> <p>The exact details will be determined during the EIA.</p>



Government Notice	Activity No.	Listed Activity	Applicability to the Char Manufacturing Plant Expansion
Activities requiring a Basic Assessment in terms of GNR 544 (Listing 1)			
R544, 18 June 2010	Activity No. 42	The expansion of facilities for the storage or storage and handling, of a dangerous good, where the capacity of such storage facility will be expanded by 80 cubic metres or more.	The Char Manufacturing Plant Expansion project will involve the expansion of storage and handling facilities for dangerous goods (waste and or by-products from the coal processing, including liquor and tar). The existing capacity of the storage tanks will be expanded by approximately 700 cubic metres. The exact details will be determined during the EIA.
Activities requiring a full Environmental Impact Assessment in terms of GNR 545 (Listing 2)			
R. 545, 18 June 2010	Activity No. 3	The construction of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic meters.	The Char Manufacturing Plant Expansion project will involve the storage and handling of dangerous goods (waste and or by-products of the coal processing, including liquor and tar). The combined capacity of the storage tanks will be approximately 1010 cubic metres. The exact details will be determined during the EIA.
Activities requiring a Basic Assessment in terms of GNR 546 (Listing 3)			
None			

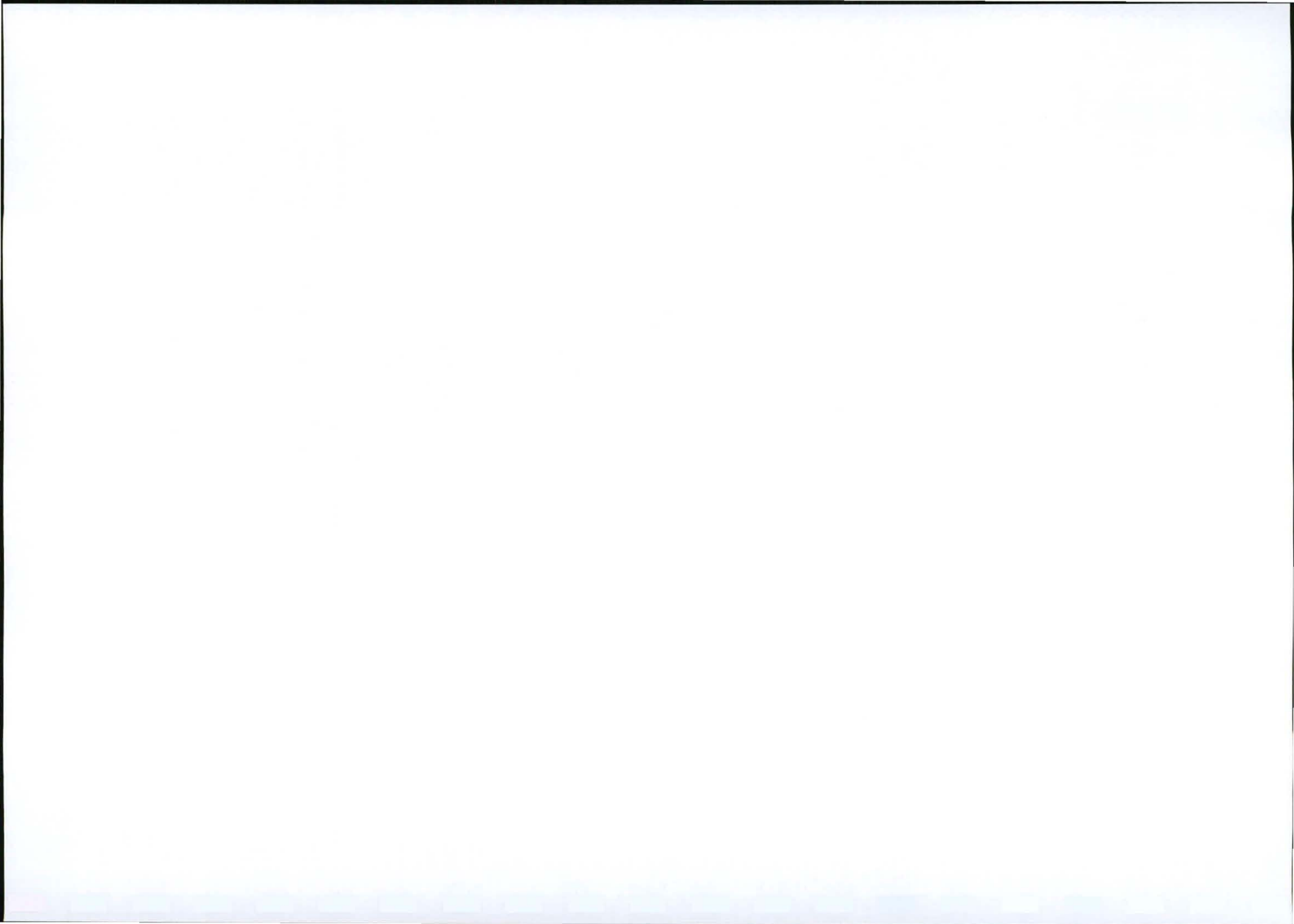
This scoping report forms the first phase of the EIA process and aims to highlight the significant environmental impacts, both bio-physical and socio-economic, to consult with interested and affected parties (IAPs), and to define the extent of further investigations and consultation required to complete the EIA report.

LEDET is the competent authority in terms of the NEMA and EIA Regulations. An application form for environmental authorisation was submitted to the LEDET on 11 March 2011 and accepted by LEDET on 20 April 2011. The reference number for the project is 12/1/9/2 – W07. This scoping report will be submitted to LEDET in terms of the NEMA and EIA Regulations.

Please note that an EIA process is also underway for two additional plants which are proposed to be constructed adjacent to the Char Manufacturing Plant Expansion, to the north west. These additional plants are the Coke Manufacturing Plant and Electricity Co-generation (Co-gen) Plant.

1.4.2 National Environmental Management Waste Act (No. 59 of 2008)

The requirements of the National Environmental Management: Waste Act (No. 59 of 2008) (NEM:WA) came into effect on 1 July 2009. The Act makes provision for the identification of various waste management activities which may have a detrimental effect on the environment. A waste management activity identified in terms of the Act may not commence, be undertaken or conducted except in accordance with published standards or a Waste Management Licence.



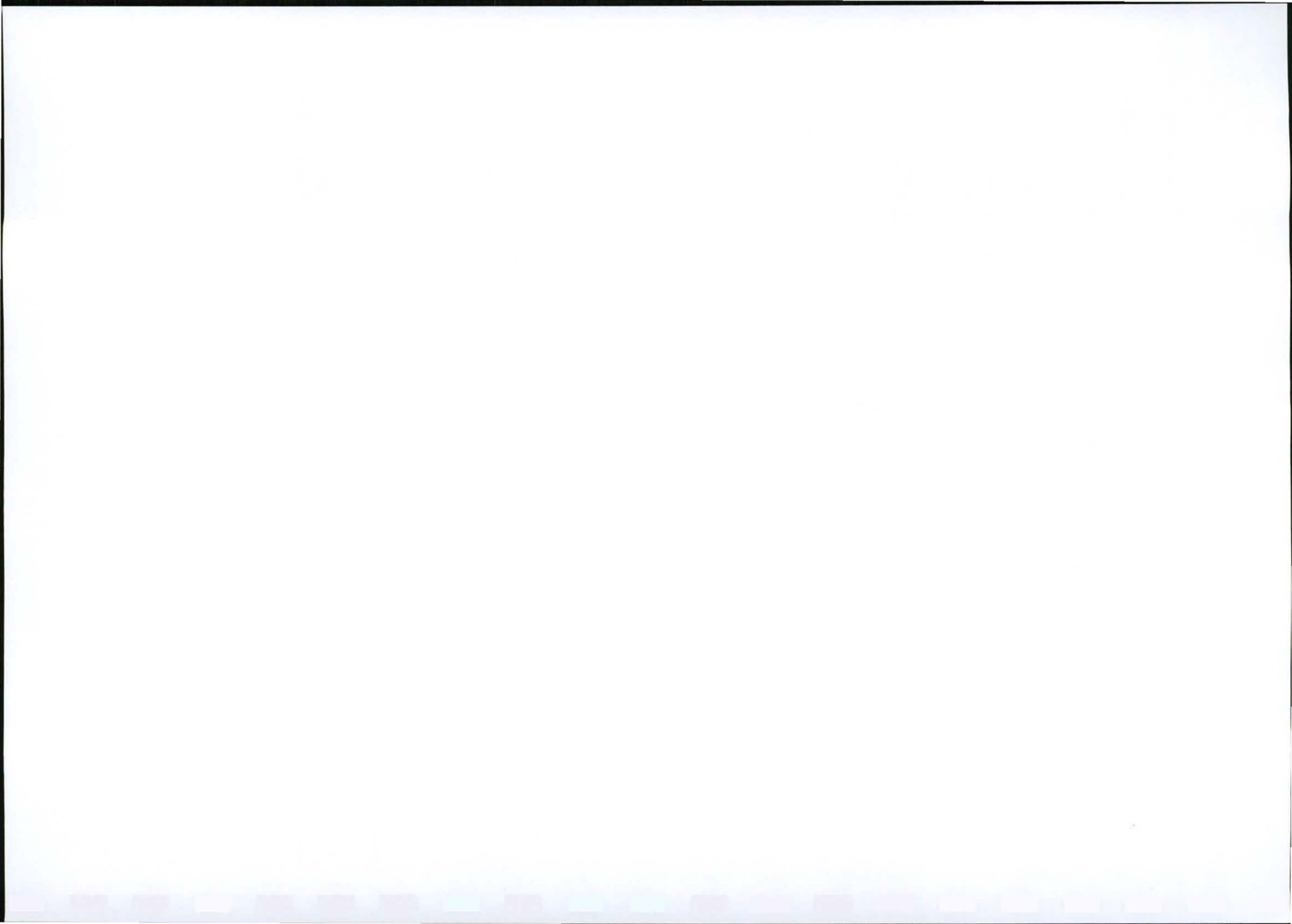
On 3 July 2009 the list of waste management activities requiring a Waste Management Licence from a competent authority were published (GN 718). Listed waste management activities are divided into Category A and Category B in the schedule. Activities identified in Category A require a Basic Assessment process, as stipulated in the Environmental Impact Assessment Regulations, while activities identified in Category B require an EIA process, as stipulated in the EIA Regulations (GN 543, 18 June 2010) of the NEMA, in order to inform an application for a waste management licence.

A waste specialist has been engaged to conduct a classification of the wastes which will be produced at the Char Manufacturing Plant (refer to section 7.5). It is likely that the tar produced in the Char Manufacturing Plant can be considered a by-product, as it can be used directly without further processing. The liquor is considered a waste and not a by-product as the concentrated liquor is destructed because the Char plant has no further use for it.

Once the waste classification is complete, the Waste License Application can be completed and the appropriate listed activities can be accurately identified. The activities which may be applicable to the Char Manufacturing Plant (depending on the final waste classification) include:

Table 2: NEM:WA Listed Activities Applicable to the Char Manufacturing Plant Expansion (GN 718)

Government Notice	Activity No.	Listed activity	Applicability to the Char Manufacturing Plant Expansion
GN 718 of 3 July 2010	Category A (1)	The storage, including the temporary storage, of general waste at a facility that has the capacity to store in excess of 100m ³ of general waste at any one time, excluding the storage of waste in lagoons.	Liquor may be stored in storage tanks on site, approximately 402 m ³ in size.
GN 718 of 3 July 2010	Category A (2)	The storage including the temporary storage of hazardous waste at a facility that has the capacity to store in excess of 35m ³ of hazardous waste at any one time, excluding the storage of hazardous waste in lagoons.	Liquor may be stored in storage tanks on site, approximately 402 m ³ in size.
GN 718 of 3 July 2010	Category A (9)	The biological, physical or physico-chemical treatment of general waste at a facility that has the capacity to process in excess of 10 tons of general waste per day.	Liquor will be treated through incineration.
GN 718 of 3 July 2010	Category A (18)	The construction of facilities for activities listed in Category A of this Schedule (not in isolation to associated activity).	Construction of liquor storage tanks and liquor destructors.
GN 718 of 3 July 2010	Category A (19)	The expansion of facilities or changes to existing facilities for any purpose or activity, which required an amendment of an existing permit or licence or a new permit or licence in terms of legislation governing the release of pollution, effluent or waste.	Construction of liquor storage tanks and liquor destructors as part of the Char Manufacturing Plant expansion project.
GN 718 of 3 July 2010	Category B (4)	The biological, physical or physico-chemical treatment of hazardous waste at a facility that has the capacity to receive in excess of 500 kg of hazardous waste per day.	Liquor will be treated through incineration.



Government Notice	Activity No.	Listed activity	Applicability to the Char Manufacturing Plant Expansion
GN 718 of 3 July 2010	Category B (5)	The treatment of hazardous waste using any form of treatment regardless of the size or capacity of such a facility to treat such waste.	Liquor will be treated through incineration.
GN 718 of 3 July 2010	Category B (8)	The incineration of waste regardless of the capacity of such a facility.	Liquor will be incinerated.
GN 718 of 3 July 2010	Category B (11)	The construction of facilities for activities listed in Category B of this Schedule.	Construction of liquor storage tanks and liquor destructors.

A Waste Management Licence for the Expansion of the Char Manufacturing Plant will therefore be undertaken in accordance with the EIA Regulations (GN R543). This scoping report forms the first phase of the EIA process as required in terms of the EIA Regulations.

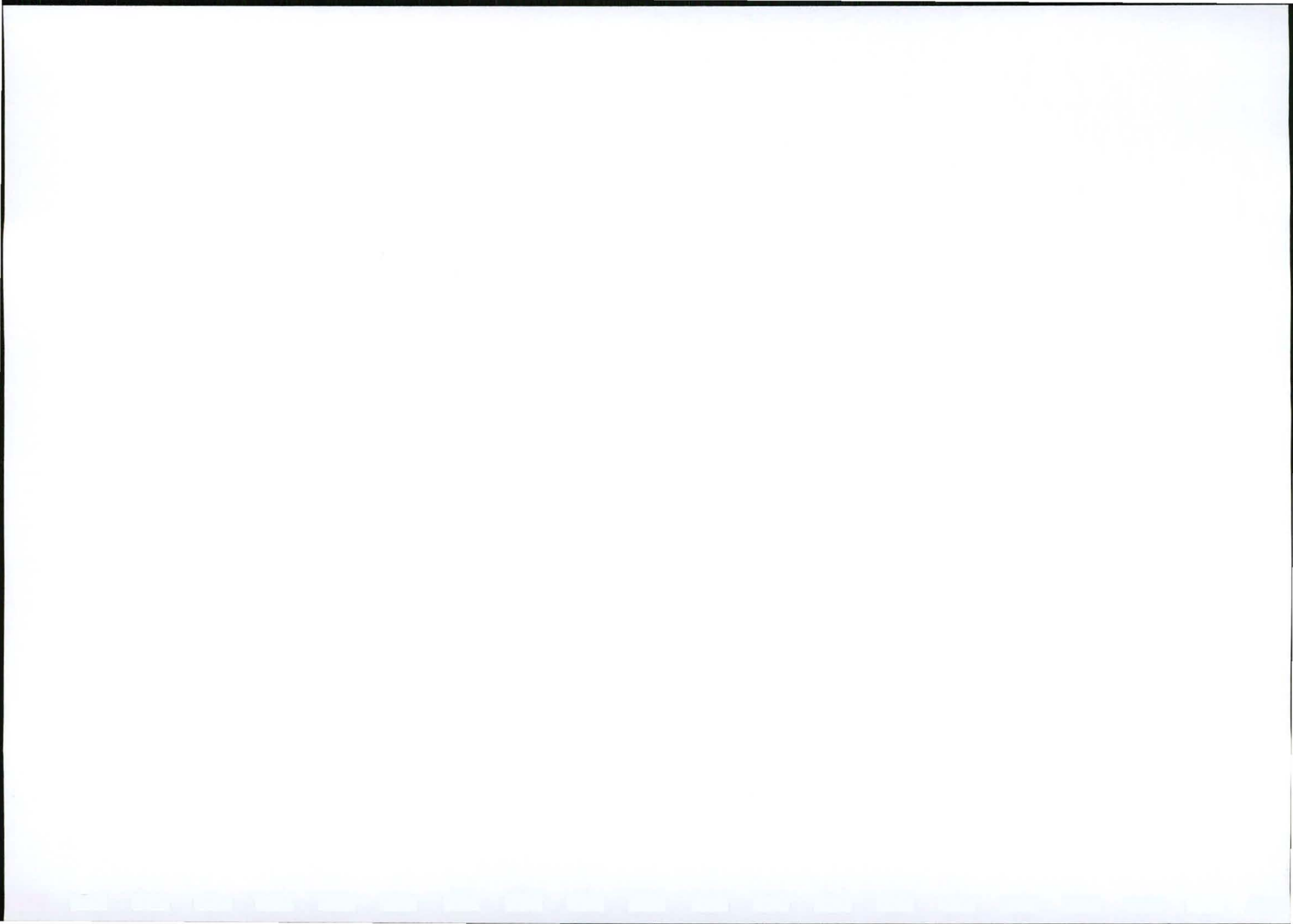
1.4.3 Mineral and Petroleum Resources Development Act (No. 28 of 2002)

An EIA and EMP will be undertaken in accordance with the MPRDA legislation, as the Char Manufacturing Plant is located within the boundaries of Grootegeluk Mine and is therefore classified as being on mining land.

Section 39 of the MPRDA requires that an EIA be undertaken and an EMP submitted for mining activities. The EIA/EMP will be undertaken in accordance with Sections 48 – 52 of the MPRDA Regulations, which stipulate the requirements and contents of the Scoping and EIA reports. The EIA/EMP will be submitted to the Limpopo Department of Mineral Regulations (DMR) for their approval.

Table 3: Structuring of the Scoping Report in terms of Section 49 of GNR 527 (MPRDA)

Legal and Regulatory Requirement	Cross Reference to Report Section
(a) describe the methodology applied to conduct scoping;	See Sections 2 and 7.
(b) describe the existing status of the environment prior to the mining operation;	See Section 4 - Description of the Affected Environment.
(c) identify and describe the anticipated environmental, social and cultural impacts, including the cumulative effects, where applicable;	See Section 6.
(d) identify and describe reasonable land use or development alternatives to the proposed operation, alternative means of carrying out the proposed operation and the consequences of not proceeding with the proposed operation;	See Section 3.2.4 and Section 6.
(e) describe the most appropriate procedure to plan and develop the proposed mining operations;	See description of the project (Section 3).
(f) describe the process of engagement of identified interested and affected persons, including their views and concerns; and	See Section 2 (steps taken and process followed), and Section 5 (results of process followed with summary of issues raised).
(g) Describe the nature and extent of further investigations required in the environmental impact assessment report.	See Section 7.



1.4.4 National Water Act (No. 36 of 1998)

Section 21 of the National Water Act (No. 36 of 1998) (NWA) lists water uses for which a Water Use Licence must be obtained. In terms of the NWA, the following water uses are applicable for the Char Manufacturing Plant:

- Section 21 b 'storing of water'. A raw water storage dam will be constructed to store water to ensure that the plant will not be affected by water supply interruptions.
- Section 21 g 'disposing of waste in a manner that may detrimentally impact on a water resource'. A settling pond, central collection dam and pollution control dam will be constructed or expanded as part of this project.

A Water Use Licence (amendment) will be submitted to the Limpopo Department of Water Affairs for their approval. The scoping report will be submitted to the DWA as the first phase in the water use license application process.

1.4.5 National Environmental Management Air Quality Act (No. 39 of 2004)

In terms of Section 37 of the National Environmental Management Air Quality Act (No. 39 of 2004) (NEM:AQA) an Atmospheric Emissions Licence is required for the Char Manufacturing Plant. This Licence will be an amendment/update of the approved Permit in terms of the Atmospheric Pollution Prevention Act (No. 45 of 1965) (APPA).

The Atmospheric Emissions Licence will be submitted to the LEDET for authorisation and approval.

Table 4: NEM:AQA Listed Activities Applicable to the Char Manufacturing Plant Expansion (GN 718)

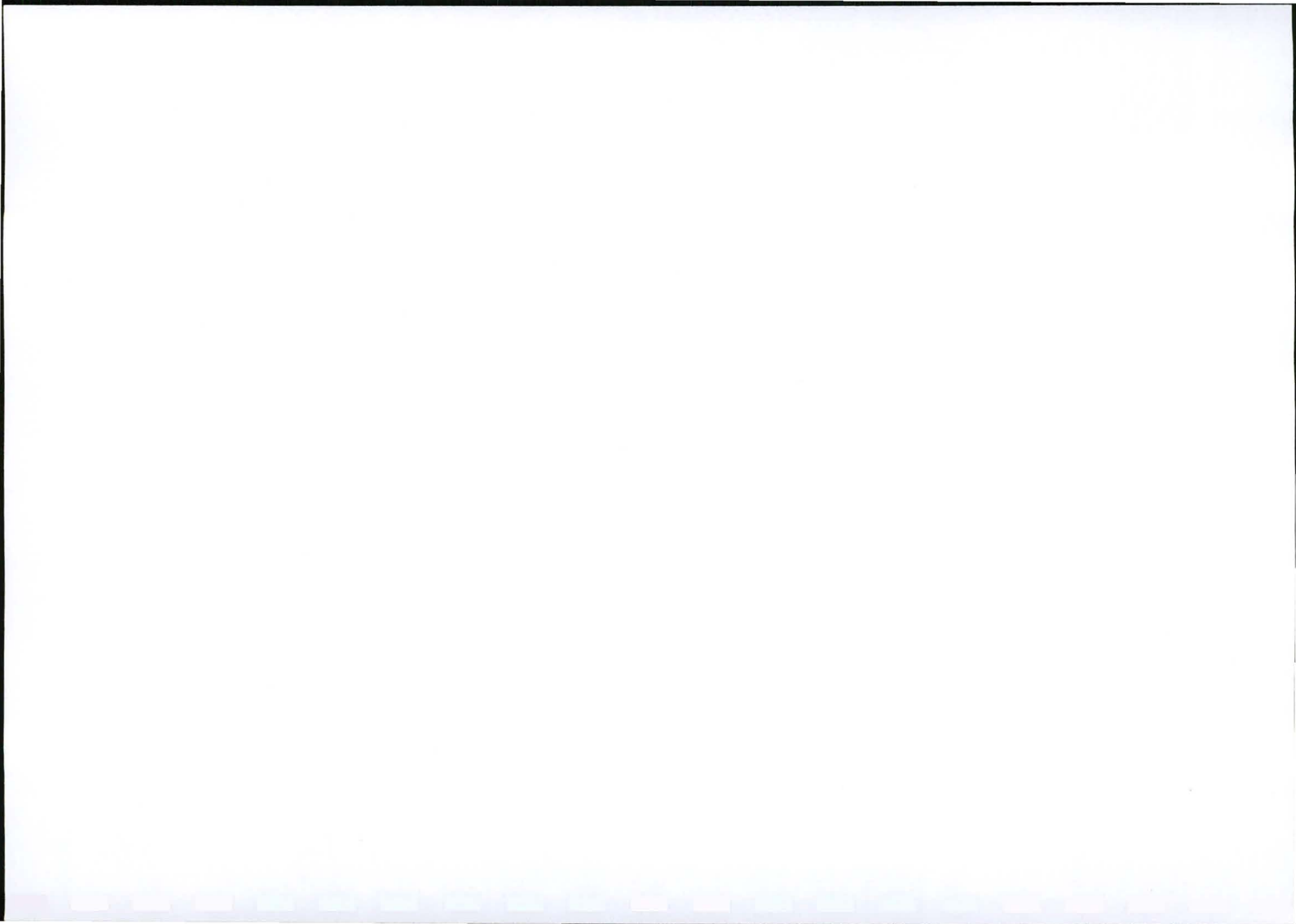
Government Notice	Activity No.	Listed activity
GN 248 of 31 March 2010	Subcategory 3.4	Char, charcoal and carbon black production

1.4.6 National Heritage Resources Act (No. 25 of 1999)

The National Heritage Resources Act provides for the protection of all archaeological and paleontological sites and meteorites. Section 38 of the Act defines the categories of development for which the responsible heritage resources authority must be notified. Under Section 38 [(c) 'any development or other activity which will change the character of a site-(i) exceeding 5000 m²] the responsible heritage authority must be informed of a development larger than 0.5 ha.

The footprint of the Char Manufacturing Plant expansion will be approximately 3.2 ha. However, the proposed site has been previously disturbed by coal stockpiling undertaken for the past 40 years. The possibility of artefacts of cultural or heritage significance being located at the site is therefore considered to be negligible.

A phase one Heritage Impact Assessment has been conducted for the entire mining rights area for the Exxaro Grootegeluk Mine (previously owned by Kumba Resources Ltd), which includes the proposed



site of the Char Manufacturing Plant Expansion (refer to Appendix 7). The investigation was conducted by J. van Schalkwyk of the National Cultural History Museum, who also wrote the report. The results of this report indicate that the closest archaeological site to the proposed development is 3.16km away. For this reason, it is assumed that no additional heritage mitigation is required for these developments.

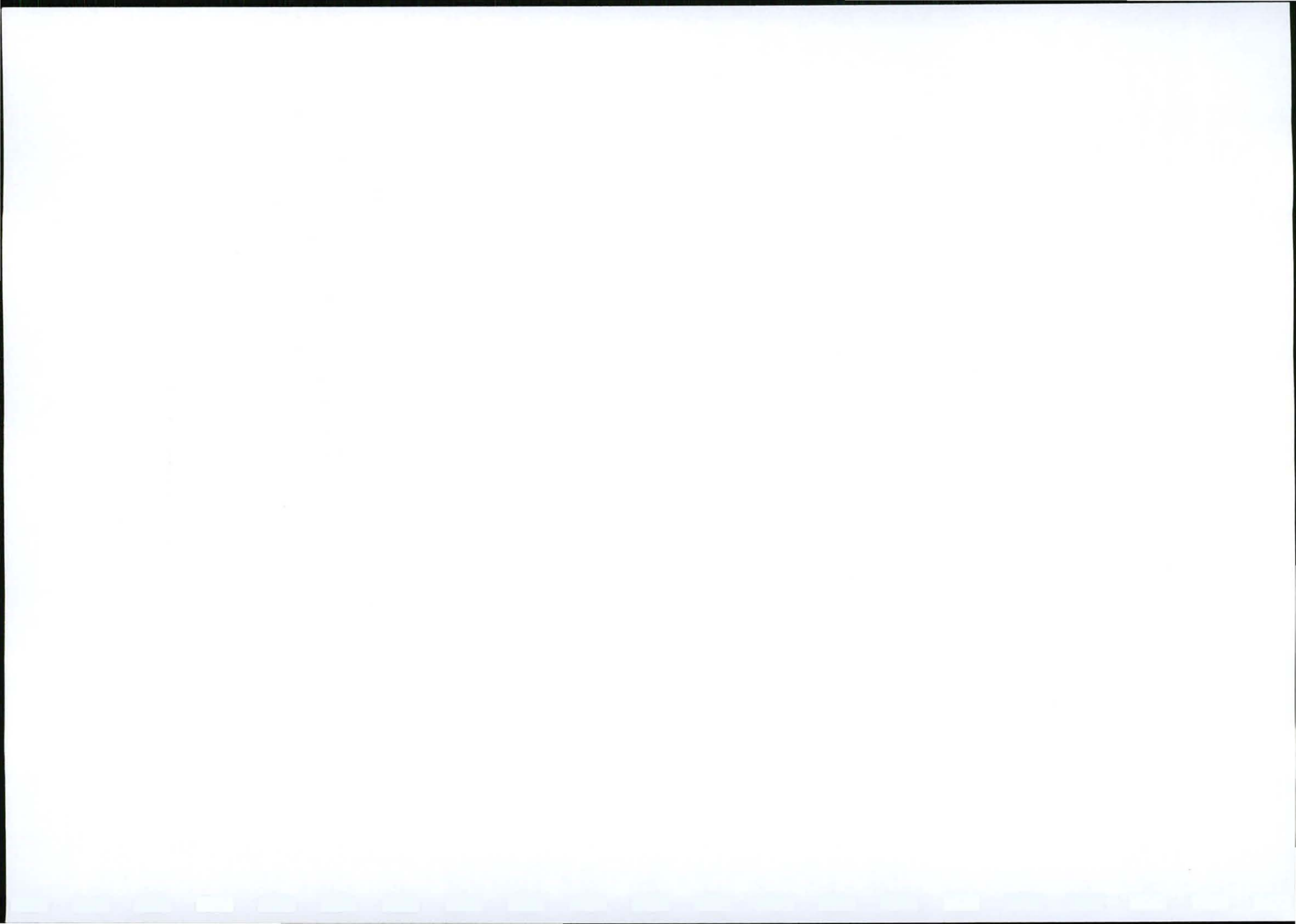
A letter and a copy of the report has been sent to the South African Heritage Resources Agency (SAHRA) (refer to Appendix 7).

1.4.7 Structure of the Scoping Report

The scoping report was structured in accordance with GNR 543 and includes the consolidated results of the public participation and authority consultation processes conducted to date. Table 5 provides a summary of the requirements of GNR 543, with cross references to the report sections where these requirements have been addressed.

Table 5: Structuring of the Scoping Report in terms of GNR 543 Requirements

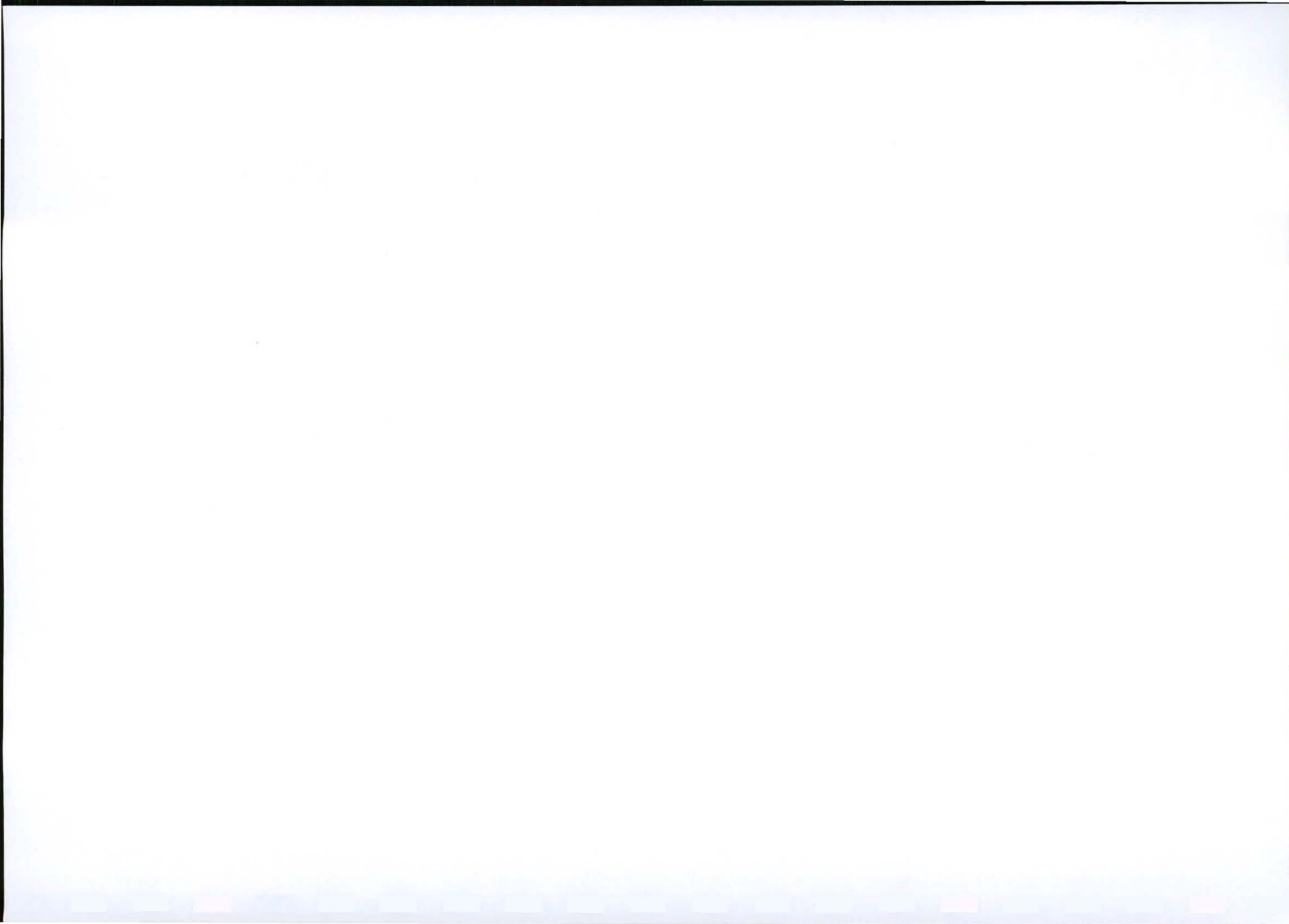
Legal and Regulatory Requirement	Cross Reference to Report Section
GNR 543 Section 27	
After having submitted an application, the EAP managing the application must:	
(f) Prepare a scoping report in accordance with regulation 28	This Report.
GNR 543 Section 28(1)	
A scoping report must contain all information that is necessary for a proper understanding of the nature of the issues identified during scoping and must include:	
a) Details of: (i) the EAP who prepared the report; and (ii) the expertise of the EAP to carry out scoping procedures;	See Project Information Sheet in front of the report.
b) A description of the proposed activity ;	See Section 3.2
c) A description of any feasible and reasonable alternatives that have been identified;	See Section 3.2.4.
d) A description of the property on which the activity is to be undertaken and the location of the activity on the property, or if it is: (i) a linear activity, a description of the route of the activity; or (ii) an ocean-based activity, the coordinates where the activity is to be undertaken;	See Section 1.1
e) A description of the environment that may be affected by the activity and the manner in which activity may be affected by the environment;	See Section 4
f) An identification of all legislation and guidelines that have been considered in the preparation of the scoping report;	See Section 1.4
g) A description of environmental issues and potential impacts, including cumulative impacts , that have been identified;	See Section 5 and Section 6



Legal and Regulatory Requirement	Cross Reference to Report Section
h) Details of the public participation process conducted in terms of regulation 27(a), including: <ul style="list-style-type: none"> (i) The steps that were taken to notify potentially interested and affected parties of the application; (ii) Proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the application have been displayed, placed or given; (iii) A list of all persons or organisations that were identified and registered in terms of regulation 55 as interested and affected parties in relation to the application; and (iv) A summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues; 	See Section 2.5 (steps taken and process followed), and Section 5 (results of process followed with summary of issues raised), as well as Appendices 2 to 5 for copies of all relevant documentation and correspondence).
i) A description of the need and desirability of the proposed activity;	See Section 1.3
j) A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;	See Section 3.2.4 and Section 6.
k) Copies of any representations, and comments received in connection with the application or the scoping report from interested and affected parties;	See Appendix 4
l) Copies of the minutes of any meetings held by the EAP with interested and affected parties and other role players which record the views of the participants; and	See Appendix 5 and 6
m) Any responses by the EAP to those representations and comments and views;	See Sections 2.5.7, 2.5.8 and 5
n) A plan of study for environmental impact assessment which sets out the proposed approach to the environmental impact assessment of the application, which must include:	See Section 7.
(i) A description of the tasks that will be undertaken as part of the environmental impact assessment process, and the manner in which such tasks will be undertaken;	See Section 6 and 7
(ii) An indication of the stages at which the competent authority will be consulted ;	See Section 7.6
(iii) A description of the proposed method of assessing the environmental issues and alternatives , including the option of not proceeding with the activity;	See Section 7.2
(iv) Particulars of the public participation process that will be conducted during the environmental impact assessment;	See Section 7.6
o) Any specific information required by the competent authority; and	No request received to date.
p) Any other matters required in terms of sections 24(4)(a) and (b) of the Act.	None identified.
GNR 543 Section 28(2):	
In addition, a scoping report must take into account any guidelines applicable to the kind of activity which is the subject of the application.	None identified.
GNR 543 Section 28(3):	
The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation (1)(c), exist.	Alternatives discussed in scoping report and alternatives taken further to the EIA phase listed in Section 3.2.4



The EIA process that was executed for this project to date is described in Section 2 (Study Approach and Methodology) of this report.



2. Study Approach and Methodology

2.1 Study Objectives

Scoping is widely regarded as a critical step in the environmental assessment process. Through scoping, significant issues, which require further investigation, are identified. Issues that are identified as having a potentially significant impact are carried forward into the environmental impact assessment phase and subsequently addressed in the environmental management programme.

The objectives of the scoping study were to:

- Collate project and baseline environmental information;
- Review existing information and past studies undertaken;
- Define the alternatives for the proposed project;
- Identify surrounding landowners, interested and affected parties (IAPs), local authorities and environmental authorities as well as other stakeholders that may have an interest in the project;
- Inform landowners, authorities, stakeholders, interested and affected parties of the proposed project;
- Engage stakeholders and identify their issues and concerns;
- Engage environmental authorities and confirm legal and administrative requirements;
- Identify and describe the potential environmental issues associated with the proposed project; and
- Identify the nature and extent of further investigations and specialist input required for the EIA.

The draft scoping report will be submitted to interested and affected parties for review and their comments will be addressed in the final version of the scoping report for submission to the LEDET, DMR and DEA.

2.2 Consideration of Alternatives

Development alternatives considered are discussed in Section 3.2.4.

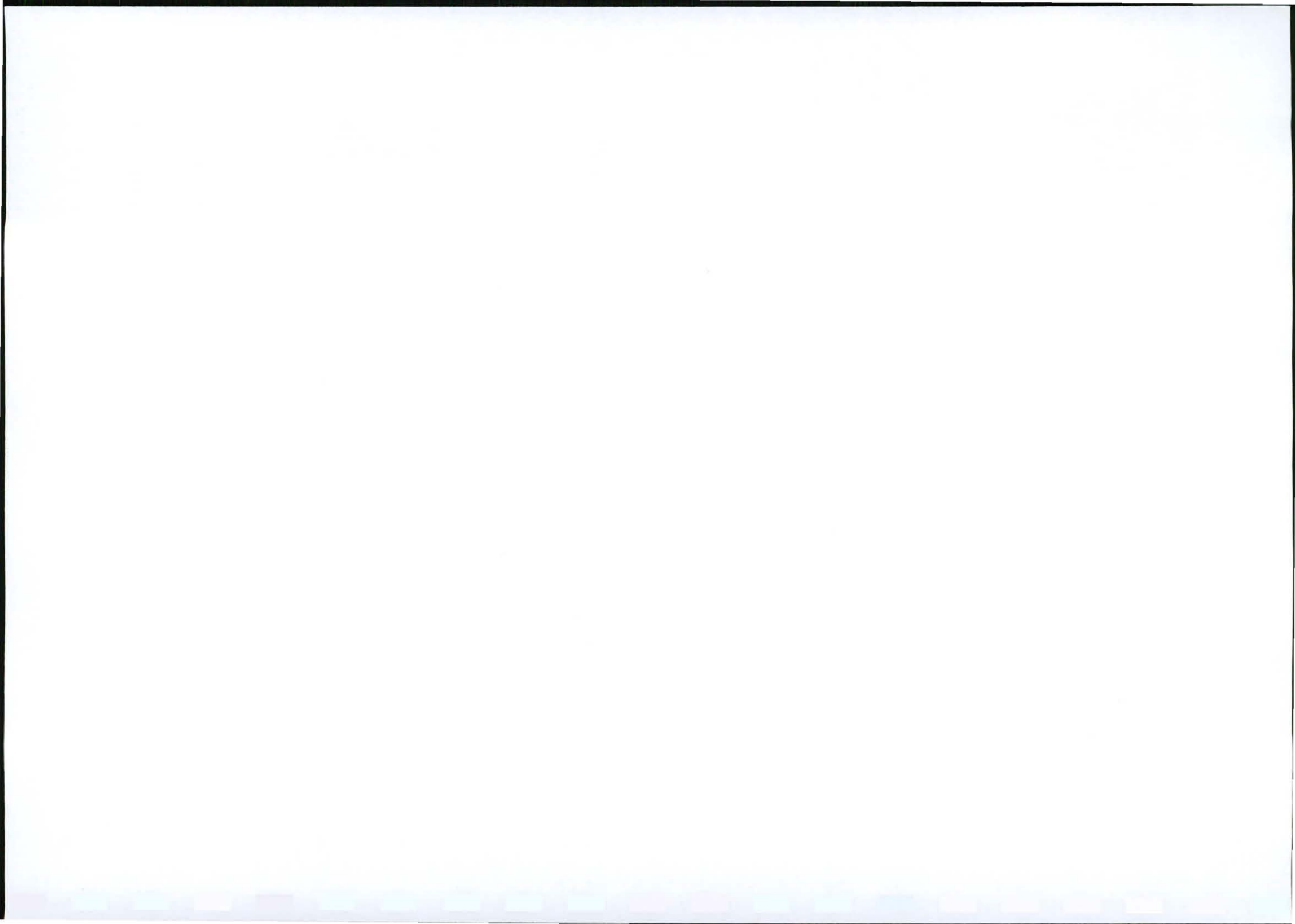
2.3 Study Area

The study area can be roughly defined as the existing Char Manufacturing Plant whose footprint will be expanded by approximately 3.2 ha to the south, north and west. This area of land is on the Grootegeluk Mining rights area, on an old coal stockpile which has been cleared as shown in Figure 7.

2.4 Baseline Environmental Description

Baseline information has been sourced primarily from the existing EIA undertaken in 2006 for the Char Manufacturing Plant. Baseline information will largely remain the same as for the original EIA/EMP, as the expansion will be located directly adjacent to the existing plant.

The baseline environment represents the current prevailing environmental conditions prior to the



construction of the proposed Char Manufacturing Plant Expansion. It is indicative of the level of environmental degradation due to existing human activities such as mining, and existing infrastructure such as railway lines and roads.

2.5 Public Participation and Authority Consultation Process

2.5.1 Identification of Interested and Affected Parties (IAPs) - Compilation of IAP Database

The IAP database has been compiled using the existing IAP database at Grootegeluk Mine, as well as databases used for other projects in the area. These lists were updated telephonically to obtain the correct stakeholder contact details. Grootegeluk Mine undertakes regular meetings with the surrounding IAPs and farmers. The existing IAP list is therefore fairly recent and most details were found to be correct.

These stakeholders were informed about the project via the Background Information Document, which was sent to everyone on the database via registered mail or email.

The IAP database is attached in Appendix 1.

2.5.2 Notifications to Interested and Affected Parties

Two rounds of public participation were conducted for the project, due to changes which took place in the project description and delays to the project progress. The first round of public participation was carried out in August 2010 (this round of public participation was conducted in English) and the second round in March 2011 (this round of public participation was conducted in English and Afrikaans).

Potential IAPs were notified about the project and the public participation process by means of:

- Direct letters to neighbouring and nearby landowners.
- Press advertisements and site notices (see section 2.5.4).
- Individual notifications to other people who may be affected by the proposed development.
- Individual written notifications to all registered IAPs (by registered mail), in accordance with sub-regulation 54 2(b) of GNR 543.

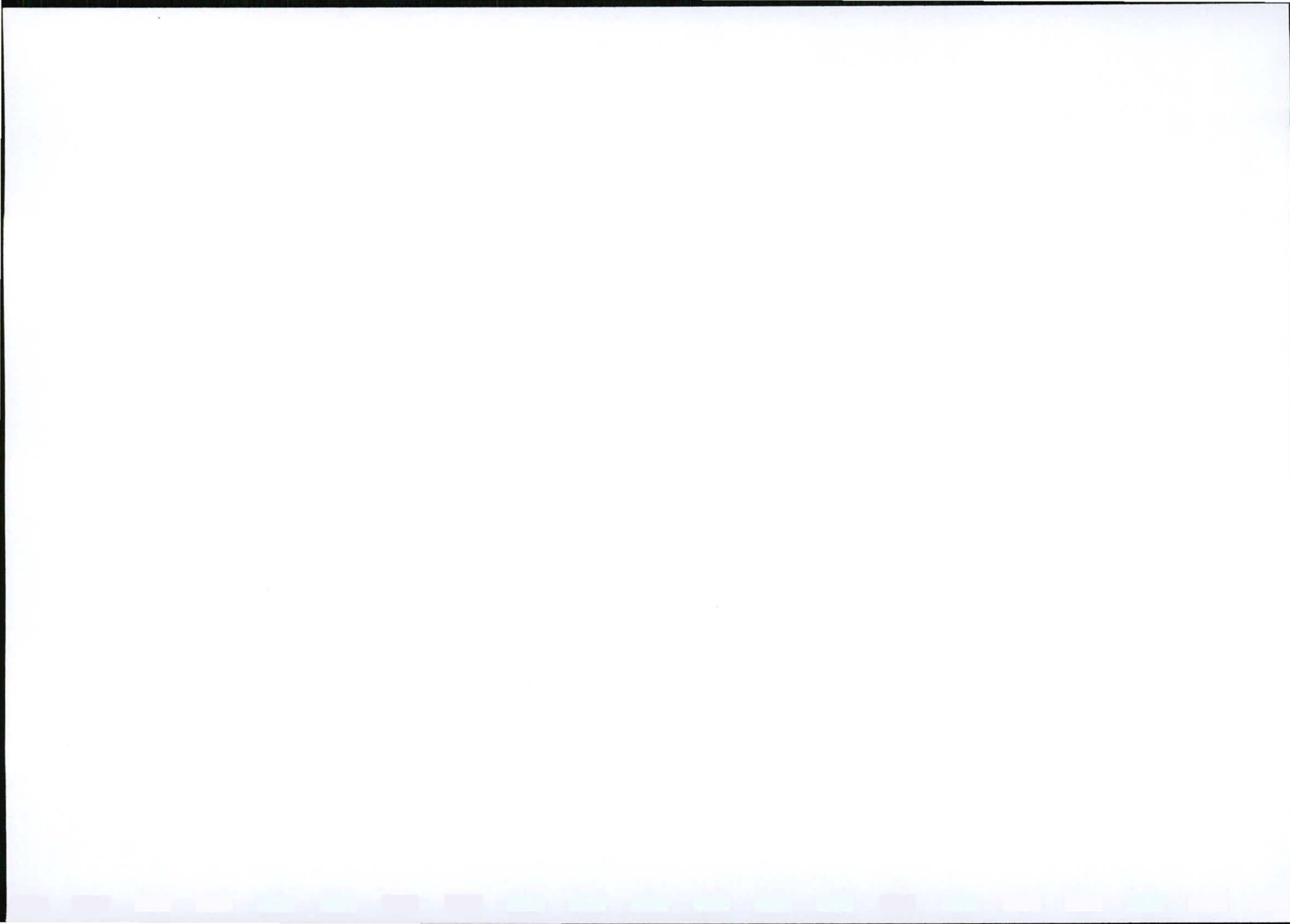
Refer to Appendix 2 and 3 for copies of the notifications.

2.5.3 Notifications to Relevant Authorities

Two rounds of authority consultation were also conducted for the project, due to the reasons mentioned above. The first round of authority consultation was carried out in August 2010 and the second round in March 2011.

In accordance with the regulations, notification was sent to the authorities by registered mail, email and in person at the information sharing meetings. The following authorities were sent information regarding the project and invited to attend information sharing meetings:

- Limpopo Department of Mineral Regulations (DMR);



- Limpopo Department of Economic Development, Environment and Tourism (LEDET);
- Department of Water Affairs (DWA);
- Department of Agriculture, Fisheries and Forestry;
- Department of Land Affairs;
- Lephhalale Local Municipality; and
- Waterberg District Municipality.

In addition, the following government agencies were also notified about the project:

- The South African Heritage Resources Agency (SAHRA).

Refer to Appendices 2, 3 and 7 for copies of the notifications.

2.5.4 Press Advertisements and Site Notices

During the August 2010 and the March 2011 rounds of public consultation, advertisements were placed in three newspapers, the Mogol Post (August 2010 and March 2011), the Bosveld Bulletin (August 2010), and the Beeld (March 2011), to advertise the project and to invite interested and affected parties (IAPs) to the information sharing meetings.

Copies of the adverts are attached in Appendix 2.

Site notices were also placed at the following locations during the August 2010 and March 2011 rounds of public consultation, to advertise the project and information sharing meetings:

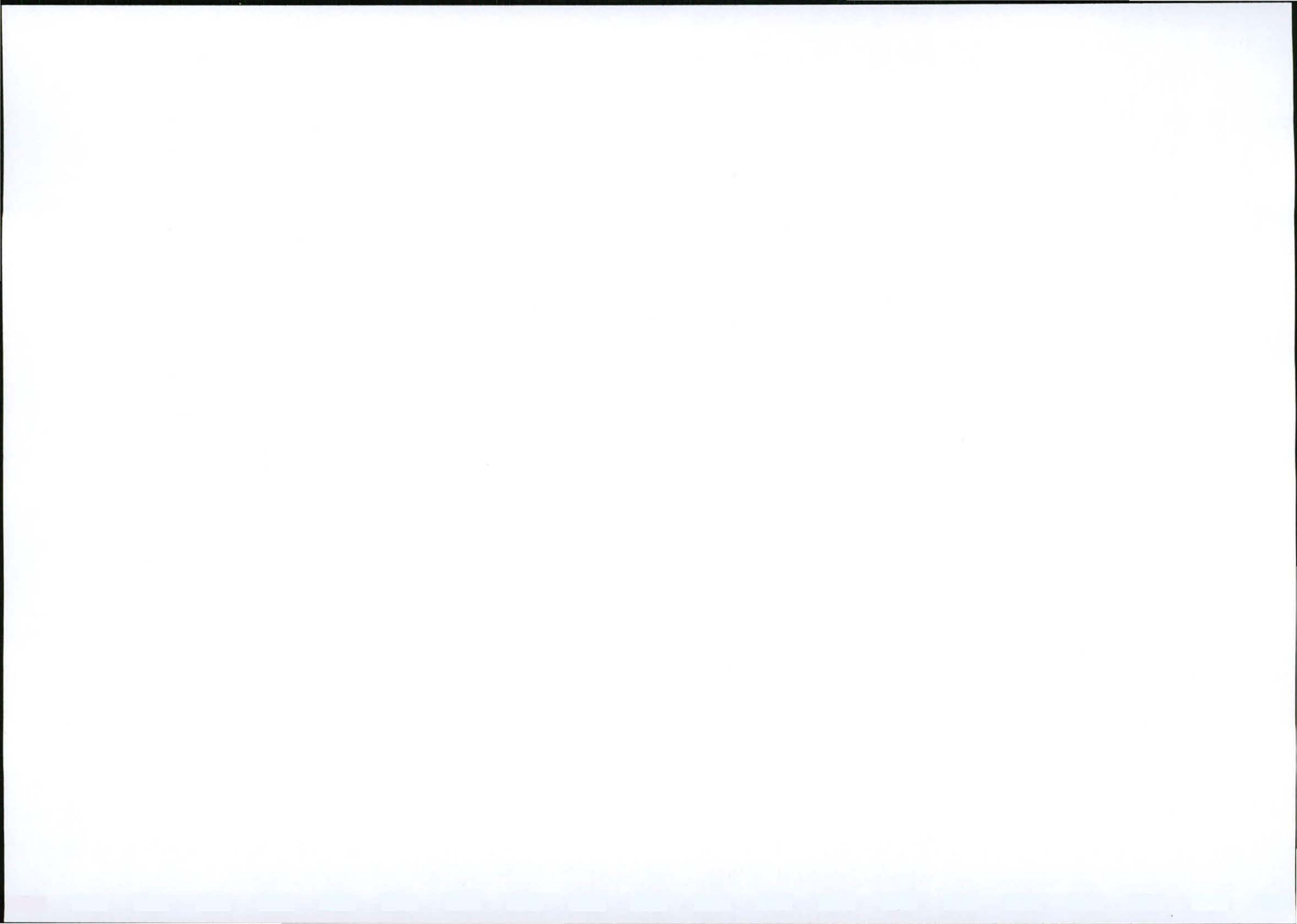
- The main gate notice board at Grootegeluk Mine (August 2010 and March 2011)
- The entrance to the Char Manufacturing Plant (August 2010)
- The entrance to the Grootegeluk Medupi Expansion Project (March 2011)
- The entrance to the Lephhalale Local Municipality (March 2011)
- Lephhalale Shoprite notice board (August 2010 and March 2011)
- Lephhalale Spar notice board (March 2011)
- Lephhalale Pick n Pay notice board (March 2011)
- Lephhalale Wholesale Dealer notice board (March 2011)
- Marapong Spar complex (August 2010 and March 2011)
- Onverwacht Marula shopping complex (August 2010)
- Department of Labour notice board (August 2010)

Photographs of the site notices are attached in Appendix 2. The site notices contained the same text as the newspaper advertisements.

2.5.5 Registration of Interested and Affected Parties

People and/or organisations were registered as IAPs for the project if they:

- Attended one of the consultation meetings.
- Responded to notification letters and documentation, press advertisements or site posters.
- Own land adjacent to the Grootegeluk Mine.
- Contacted Synergistics telephonically, via fax, e-mail or post.



2.5.6 Background Information Document

During the August 2010 and the March 2011 rounds of public consultation, background information documents (BIDs) were compiled and circulated to the list of IAPs on each occasion. The time and date for the information sharing meetings were also included in the BIDs. Response sheets were attached to the documents, requesting written responses and any comments the IAPs had regarding the project.

Copies of the August 2010 and the March 2011 BIDs are attached in Appendix 3.

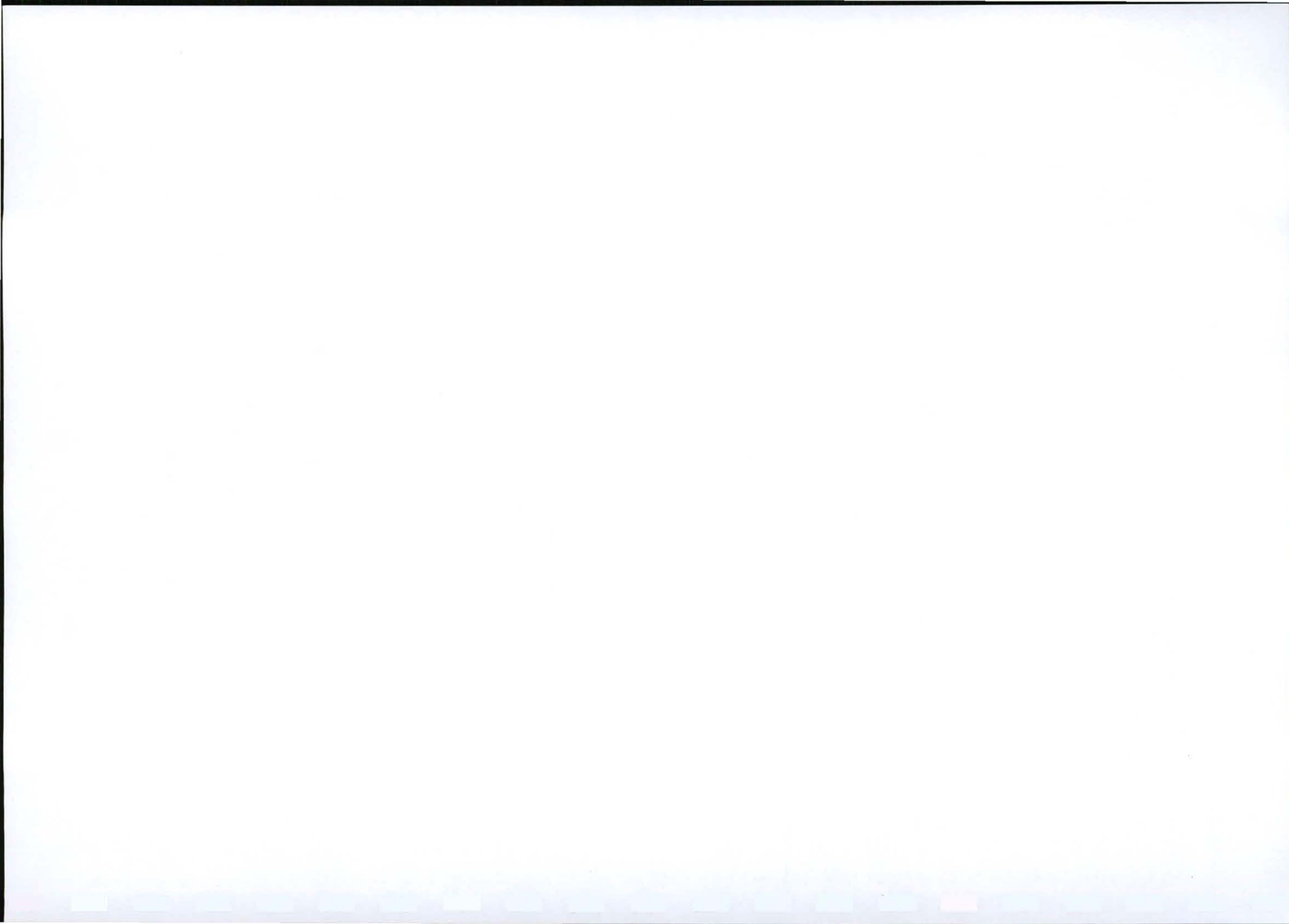
2.5.7 Public Information Meetings

Two meetings were held for the public on the 11th of August 2010 and the 17th of March 2011. The purpose of the meetings was to give more detailed information about the project, to present the environmental processes to be followed and to provide an opportunity for attendees to ask questions and raise concerns.

A summary of the questions and/or issues raised at the public meetings are included in the tables below:

Table 6: Questions/Issues Raised at the first Public Meeting on 11 August 2010

Question/Issue Raised:	Answer:
When will the construction of the expansion project begin?	Guillaume de Swart – Exxaro (GS) answered that construction is scheduled to begin in the third quarter of 2011.
Will the pollution control dam remain the same size? Is the capacity adequate for the expansion project?	GS answered that the pollution control dam is currently sized for 8 retorts and the size will therefore be sufficient for an additional 4 retorts. Vivienne Vorster – Synergistics (VV) added that the surface water specialist study, undertaken by Jones and Wagner Engineers will verify whether the size is sufficient.
Will any additional water be required for the expansion project?	GS said that potable water requirements will remain roughly the same, as employment numbers will only increase slightly. Raw water required for use in the boilers will also remain as per the original water balance since the boiler system will not be expanded for this project.
A statement was made by Filomaine Swanepoel - IAP (FS) that the water service agreement between Char Manufacturing Plant and Grootegeluk Mine will need to be amended, should water use increase.	GS answered that the agreement will be looked into and any changes required will be done accordingly. Charles Linstrom - Exxaro (CL) added that the water balance will be updated as part of the surface water specialist study.
Will the existing Atmospheric Pollution Prevention Act (APPA) Permit be amended?	VV answered that an Atmospheric Emissions License (in terms of the new National Environmental Management Air Quality Act No. 39 of 2004) will be undertaken to amend the existing APPA permit.
There have been complaints about odours from the Char Manufacturing Plant at Grootegeluk Mine. There are also rumours amongst employees that	Edwin Mogoane - Char Manufacturing Plant (EM) answered that air quality monitoring is undertaken bi-annually and assessed according



the phenol levels are harmful to people's health and affect the mine personnel. What air quality monitoring is being undertaken at Char Manufacturing Plant?	to the conditions within the APPA permit.
What is being done about the waste 'sludge' which is currently being stored?	<p>GS answered that coal fines that accumulate in the cyclones and tar precipitators of the recycle gas system are removed on a scheduled basis to avoid negative impacts on the process. The coal fines mixed with tar are removed as a sludge and stored in 210ℓ drums. These drums were initially sent to Holfontein, but this alternative was stopped due to excessive cost.</p> <p>Testing, with positive results, has been obtained by mixing the sludge with char fines to a dry consistency suitable for blending with Power Station coal. Sludge production volumes +/- 0.04% of coal used.</p>
The Grootegeluk Water Use License (WUL) states that the pollution control dam needs to be monitored for phenols. The mine is worried that this is not being done and it is a bad reflection on them.	EM answered that monitoring is being done at boreholes up and downstream from the pollution control dam. There have been no phenols detected in these monitoring boreholes.

Table 7: Questions/Issues Raised at the second Public Meeting on 17 March 2011

Question/Issue Raised:	Answer:
Tendani Mufamadi of the Grootegeluk Mine (TM): Are you going to extend the capacity of the pollution control dam?	<p>GS: Yes we are.</p> <p>Charles Linstrom of Exxaro (CL): It is currently under investigation by Jones and Wagener (surface water specialists). We will update the public on the results of the specialists' studies.</p>
Elijah Mabogo (EM): How long will construction of the plant take?	Lomeus Konradie of Exxaro (LK): We use special materials, and thus it can take two years, up to the end of 2014.
TM: Will you need a permit for emissions and electricity generation from the Department of Energy?	SH: We are applying for an Atmospheric Emissions License. With regard to the Department of Energy, I don't think a permit is needed, but we will confirm it.
TM: With regard to water use licenses required, a Section 21 A license is missing. Are you making provision for it?	CL: No, section 21 A applies to the Mokolo and Crocodile Water Augmentation Project (MCWAP). We already have an allocation from MCWAP for the Grootegeluk Mine. We will use the allocated water for the Char, Coke and Co-gen Plants as well.

The minutes of the public meetings and attendance registers are attached in Appendix 5.

2.5.8 Focussed Authority Meetings

A general meeting was held with the relevant authorities on the 12th of August 2010.

In addition, the following meetings were held with individual authorities:

- Limpopo Department of Mineral Regulations (DMR) on 16 March 2011;
- Limpopo Department of Economic Development, Environment and Tourism (LEDET) on 16 March 2011;
- Department of Water Affairs (DWA) on 16 March 2011;
- Lephalale Local Municipality on 17 March 2011; and
- Waterberg District Municipality on 17 March 2011.



The purpose of the meetings was similar to that of the public meetings, giving more detailed information about the project, presenting the environmental processes to be followed and to provide an opportunity for the authorities to ask questions.

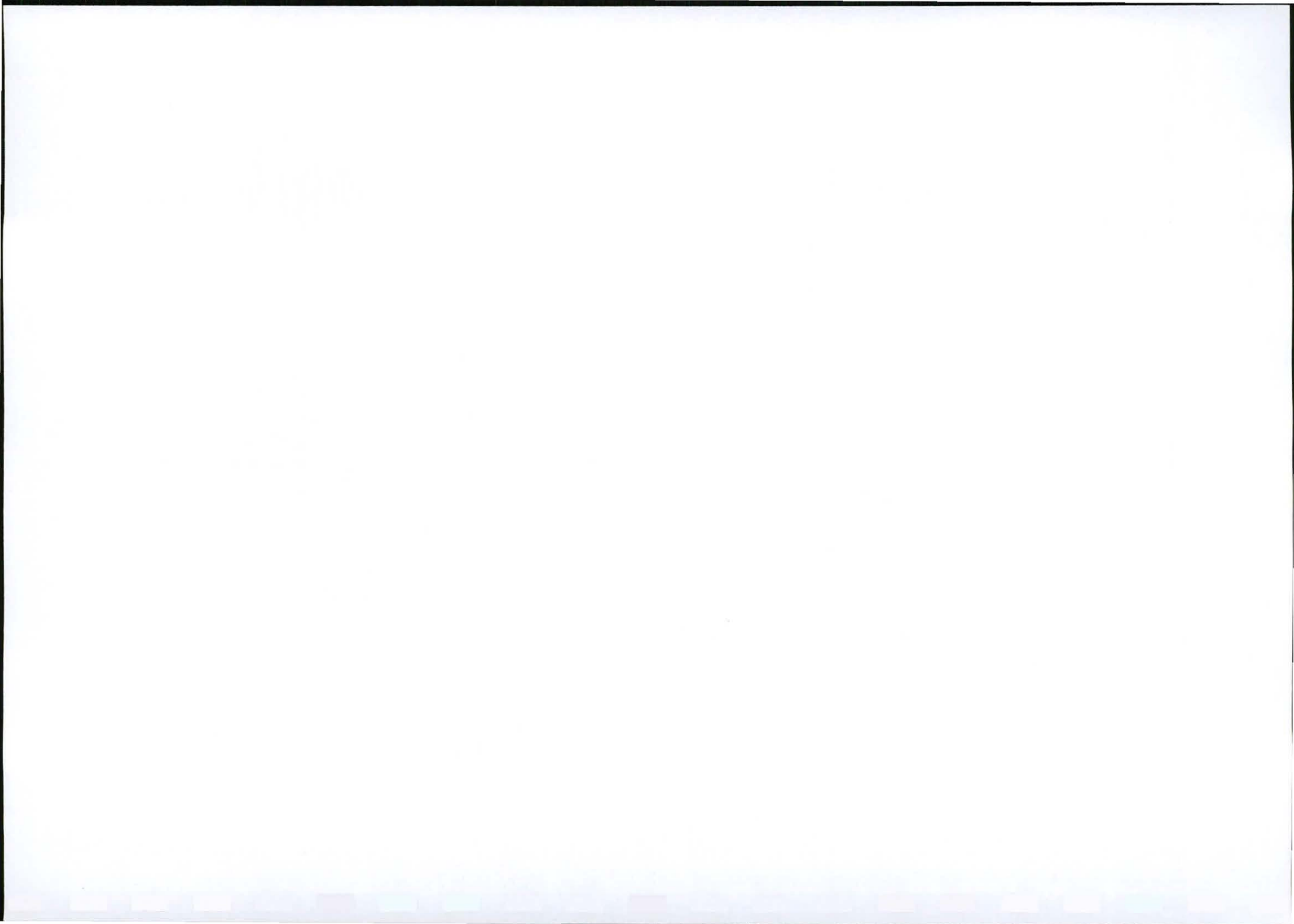
A summary of the questions and/or issues raised at the authorities meetings are included in the tables below:

Table 8: Questions/Issues Raised at the Authorities Meeting held on the 12th of August 2010

Question/Issue:	Answer:
Masemola Mailitse - Department of Agriculture, Forestry and Fisheries (MM) asked where the water that the Char Manufacturing Plant uses comes from.	Guillaume de Swart – Exxaro (GS) answered that raw, process and potable water is supplied from the Grootegeluk Mine via dedicated pipe lines.
MM asked whether the Char Manufacturing Plant has a Water Use License and how much water is extracted?	GS answered that the Char Manufacturing Plant is approved under the existing Grootegeluk Mine Water Use License. The Char Manufacturing Plant does not extract water for any purpose.
MM enquired when construction will begin and when the expansion will be operational.	GS answered that construction is anticipated to start in the 3 rd quarter of 2011 and the expanded plant should be operational by October 2012.

Table 9: Questions/Issues Raised at the Meeting with the DMR held on 16 March 2011

Question/Issue Raised:	Answer:
Azwi Malaudzi – DWA (AM): What do you produce?	Charles Linstrom – Exxaro (CL): Char. We want to expand our plant and add a coking process (explained process).
AM: Are you using waste coal?	CL: No, we are using coal product from bench 11 and 13 at Grootegeluk Mine which is ideal for process.
AM: So the current plant is a Char Manufacturing Plant, and now you want to expand Char and construct Coke and Co-Generation plants?	Shelley Holt - Synergistics (SH) and CL: Yes, (explained process).
SH: We will do EMP amendment, update closure costing etc. This will be a separate document (from the current EMP update of the entire Grootegeluk Mine). This is due to different pollutants. Do you think this will be acceptable?	AM: For administrative purposes, we want one EMP and not several amendments to the EMP. CL: We will try to align the Char, Coke and Co-gen EMP with the whole Grootegeluk Mine EMP update.
AM: DMR requires the a scoping report, then the EMP. When submitting reports, submit in parallel to DWA, DEA etc. so ensure that you meet all legislation.	SH: We will do this.
AM: What is Coke? Whom are you selling it to?	CL: Coke is formed by compressing coal and then heating it to remove impurities. Coke is used to produce steel. CL: We sell it to many clients, such as chrome producers and smelters.
AM: Will there be water pollution as a result of these plants?	CL: We are decreasing existing water pollution on the mine property. The groundwater pollution plume is being reduced. In our water use license there are stipulations to manage this. We have written a water and waste management plan.



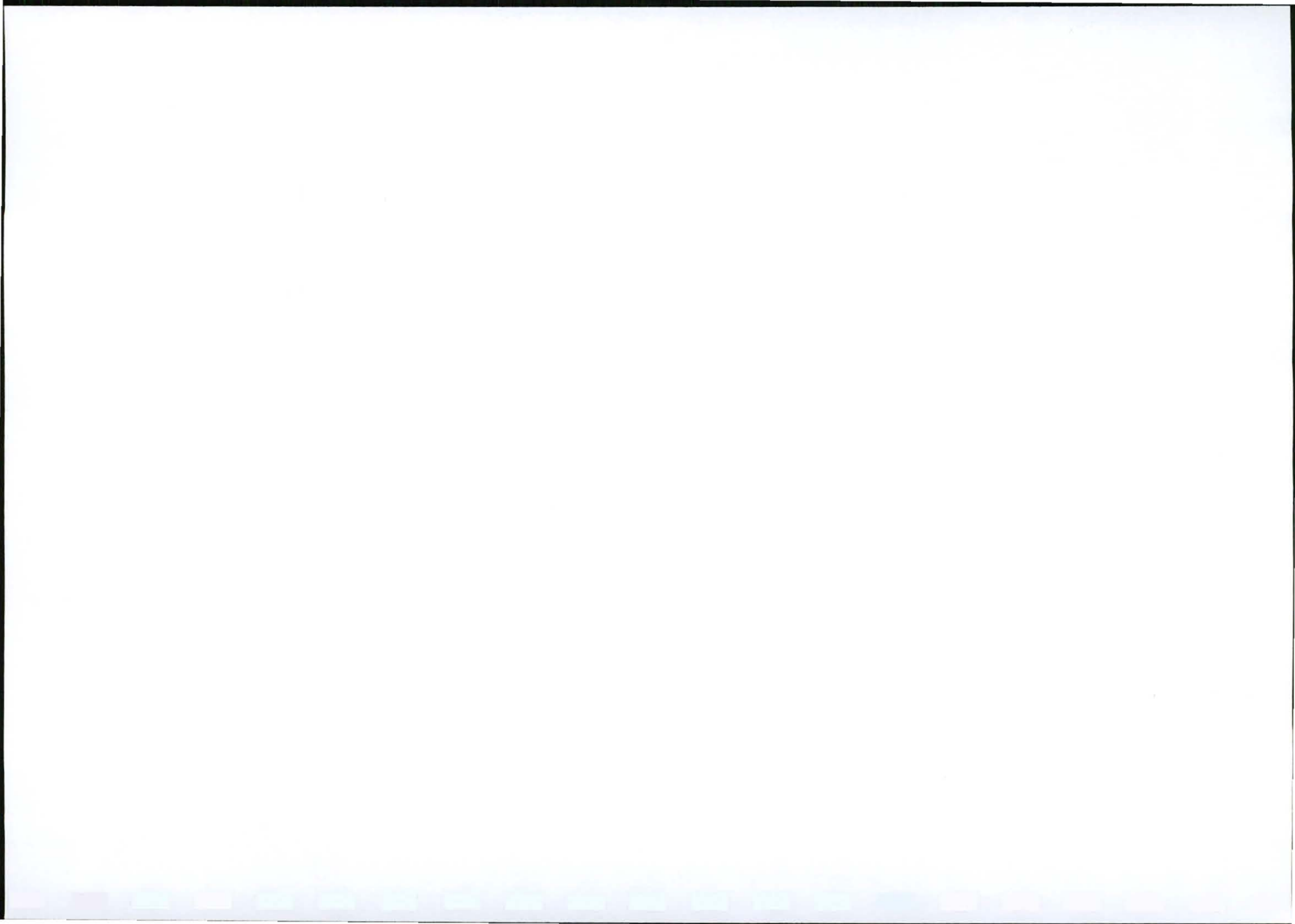
	<p>SH: The new construction is not likely to have a significant detrimental impact on ground water.</p> <p>CL: Construction is to take place on old coal stockpile site used in the 1970s. We have taken out all coal from the construction area, so no further pollution will leach from this coal to the groundwater.</p>
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Table 10: Questions/Issues Raised at the Meeting with the LEDET held on 16 March 2011

Question/Issue Raised:	Answer:
Vactor Mongwe – LEDET (VM): Will you burn the coal?	Mike Plaskitt – Exxaro (MP): There are volatile gas in the coal. We heat the coal to remove volatiles to produce Char or Coke. The gas is then combusted and fed into a boiler, producing steam which drives a generator.
VM: How will you deal with the sulphur from the coal?	MP: 1% of the sulphur is released as SO ₂ . When tar is precipitated, SO ₂ goes into the tar and later in the precipitated water called liquor.
Tinyiko Malungani – LEDET (TM): Are you doing separate applications?	SH: Yes, the applications are for the Char, Coke and Co-gen plants. We are also doing AEL applications and an air quality study. Once done we will engage with AEL officers at LEDET.
VM: We must confirm whether the waste is hazardous waste or not. Waste management licensing is not the core of the project. If it is a by-product LEDET will deal with it.	<p>MP: We think it is likely to be hazardous. We may add the tar to the gas for burning, to produce electricity. Tar is a by-product, not waste, as it can also be sold. We will also burn the liquor to produce heat and generate electricity.</p> <p>SH: We do have a waste specialist who is working on the project.</p> <p>MP: The specialist will classify the waste. All our "waste" will be converted to energy. The only "waste" will be atmospheric emissions. No solid or liquid waste will be left.</p>
TM: With PPP, language gaps must be addressed. The dominant language of the area should be identified.	SH: We will do this.
TM: Is it our competency to run with electricity production, or do we need to delegate to DEA?	VM: We must focus on the main process, in this case, to produce Char by erecting the facility.
TM: If applications are submitted separately, the processes should be separate. If it is one process, applications should possibly be combined.	MP: Coke and Co-Gen are interdependent.
TM: How will you align the MPRDA and NEMA processes? If you submit the reports to the DMR and LEDET at the same time, and the report is inadequate, there could be issues.	<p>VM: Let's follow the NEMA process. If we are satisfied, we will give authorisations.</p> <p>TM: I would advise submitting the reports to DMR after we have approved the reports.</p>

Table 11: Questions/Issues Raised at the Meeting with the DWA held on 16 March 2011

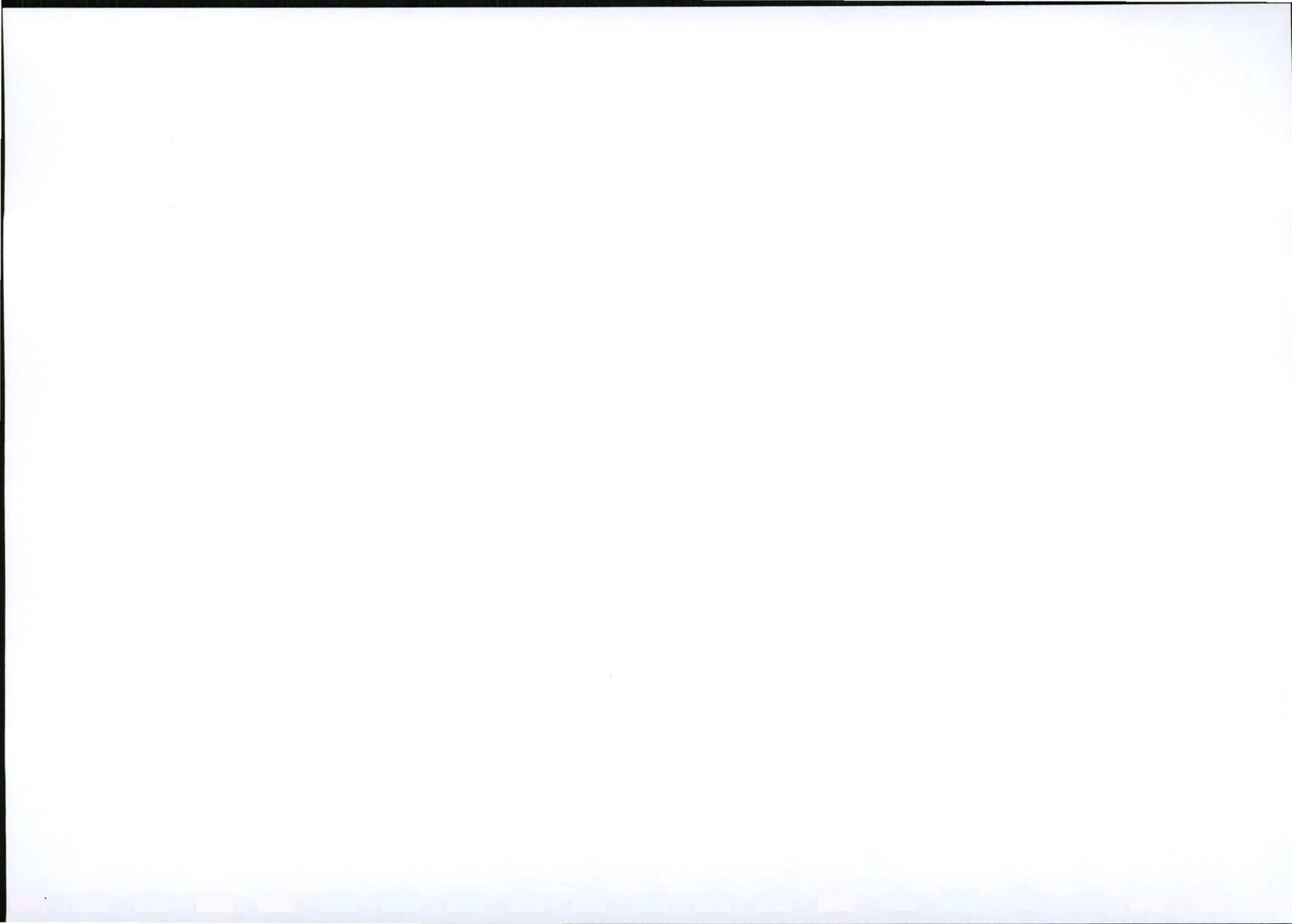
Question/Issue Raised:	Answer:
V.B. Sengani – DWA (VBS): Will the level of CO ₂ released be minimal?	Mike Plaskitt – Exxaro (MP): Yes, much less than a normal coal boiler stack. In our case, only 15% of coal (volatiles) is burnt off, therefore we burn one sixth of the amount of a normal boiler. Thus we have cleaner stacks.
VBS: What is the potential for acid rain from SO ₂ .	MP: We will design the plant to minimise SO ₂ and CO ₂ . We will



Question/Issue Raised:	Answer:
	comply with regulations. Shelley Holt - Synergistics (SH): We are applying for an AEL,
Charles Linstrom – Exxaro (CL): We will apply for a WULA under section 21 G and B of the NWA. We have a surface water specialist and a groundwater specialist, whose data we will use in the application. We will also update the Integrated Water and Waste Management Plan (IWWMP) for the mine.	
VBS: Can we see a presentation of the results of the surface and groundwater monitoring?	CL: Yes, however we are in the early stages. We can give you the results at a later stage.
MP: Waste water dams will also be constructed.	CL: Does DWA still require a 2 mm HDPE lining on the pollution control dams? Animals at our plant damage the HDPE lining. We may need to make a concrete lining. MM: Give us different 3 options for dam lining and we will recommend the most appropriate one.
VBS: Will there only be section 21 G and B applications?	MP: Regarding section 21 A, the Grootegeluk Mine has a current allocation from the Mokolo and Crocodile Water Augmentation Project (MCWAP).
CL: Does dust suppression fall under section 21 G?	VBS: It is still a section 21 E activity. MP: Some dust may occur, but not large amounts. No crushing or screening takes place at the Char Manufacturing Plant.
CL: Under the stockpile areas, what must we use to mitigate ground water pollution from the stockpiles? We will also ask the groundwater specialist to recommend suitable measures.	VBS: Concrete. The leaching of sulphates, can affect the ground water. We will check the application and whether the mitigation measures will reduce/prevent impacts.
MM: Will you factor in the water balance and salt balance?	CL: The water balance will dictate storm water constraints, thus we may need to expand the pollution control dam, and ensure that it can withstand a 1:50 year flood. The water specialists will come up with a water monitoring programme. MP: The water specialist's water balance will ensure we recycle as much water as possible and that we have enough water.
MM: There have been issues with the public regarding water in the area, so please include water issues in the public participation.	CL: Water issues will be included in public participation from the start.

Table 12: Questions/Issues Raised at the Meeting with the Waterberg District Municipality held on 17 March 2011

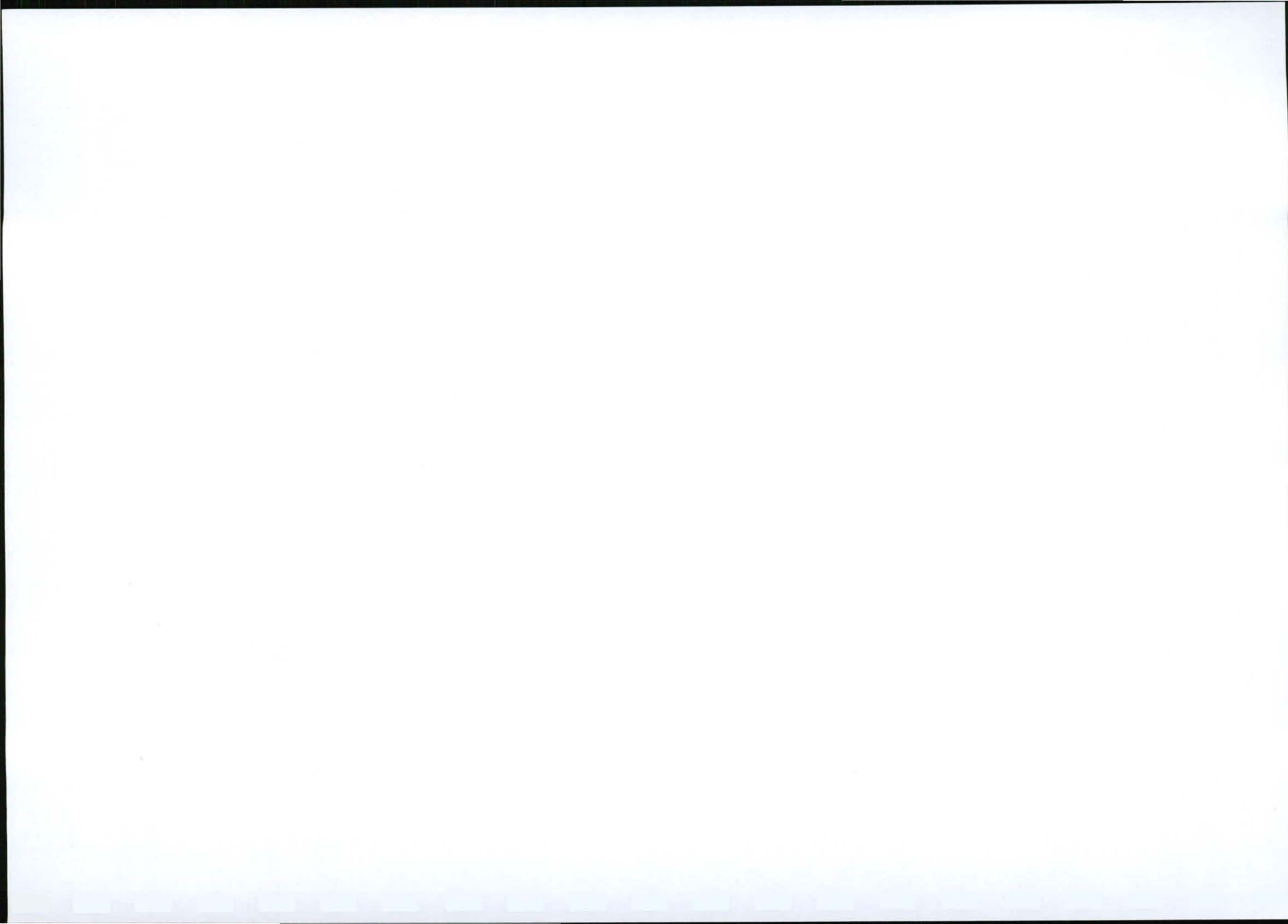
Question/Issue Raised:	Answer:
Lily Mokonyane – Waterberg Municipality (LM): We have Integrated Water and Waste Management (IWWM) plans, Air management plans, and EMPs for our municipal area. The Environmental Management Framework combines all three. You should also consider the health impacts.	Shelley Holt - Synergistics (SH): We would like to obtain copies of those reports. Health impacts will be assessed during the EIA process.



Question/Issue Raised:	Answer:
Peter Mphela – Waterberg municipality (PM): What is the potential for air pollution?	SH: We will do an air quality study. There is existing emissions data from the Char Manufacturing Plant. We will send you our reports, and you will be able to comment on them.
Charles Linstrom – Exxaro (CL): Do you want the Char Manufacturing Plant data in the report? Should we include Medupi Power station in the baseline?	PM: Yes, it makes sense to include Medupi. If not included, it will not give a true idea of impacts. Mike Plaskitt – Exxaro (MP): Our plant will have less than 1 % of impact compared to Medupi and Matimba power stations. They contribute 99 % of air pollution due to their size.
PM: How have water issues been considered?	CL: We will compile water balances for the plants. If we don't have sufficient water, we will not go ahead with project. We will update water balances to try save water. I think the water in the Mokolo Dam has been 100 % allocated. DWA has taken over management of the Mokolo Dam, so they allocate the water now. They indicated to us that our existing allocation is the maximum we will receive. MP: We will use the allocated water for the Grootegeluk Mine.
LM: How does the development benefit the community? Short term construction jobs do not sustain people. Ensure the community is included.	SH: We will assess the socio-economic benefits, and jobs that will be created. We haven't assessed this in detail yet. MP: We have a social manager at Grootegeluk Mine. He arranges and deals with all social issues and community projects. SH: We will put those details in the report. MP: We need a lot of labour for these plants, up to 130 jobs will be created at Char and 230 at Coke and Co-Gen.
Edwynn Louw – Synergistics (EL): Would you like to know whether unskilled, local people will be able to be trained to fill the employment opportunities at Char, coke and Co-generation plants?	MP: Yes, we will train the local unskilled people.
PM: You are aware of Waterberg being declared a priority area in terms of NEM:AQA, therefore there may be stricter air quality standards for the area in future. Suitable abatement technology should be in place.	SH: We will take note of this.

Table 13: Questions/Issues Raised at the Meeting with the Lephalale Local Municipality held on 17 March 2011

Question/Issue Raised:	Answer:
Joshua Hlapa – Lephalale (JH): The waste and air specialists should ensure that the applicable regulations are complied with. We would like a waste management plan, air monitoring plans and water monitoring plans. I spoke to Filomaine Swanepoel at Grootegeluk mine, they have an IWWMP. Is it not a good idea to incorporate the new plants into the IWWMP?	Shelley Holt - Synergistics (SH): Once the specialist studies are done, we will send you the reports and will update the Grootegeluk Mine IWWMP to include these plants.
JH: What will you use to burn the coal?	Mike Plaskitt – Exxaro (MP): We will use coal gas. Once the coal is in the retort, we use LPG gas to start the process. After that, coal gas will heat the coal. We add a little air to burn the gas. Once the



Question/Issue Raised:	Answer:
	process runs, only coal gas is used.
JH: We will have more questions once you have the draft reports for us.	

The minutes of the meetings and attendance registers are attached in Appendix 6.

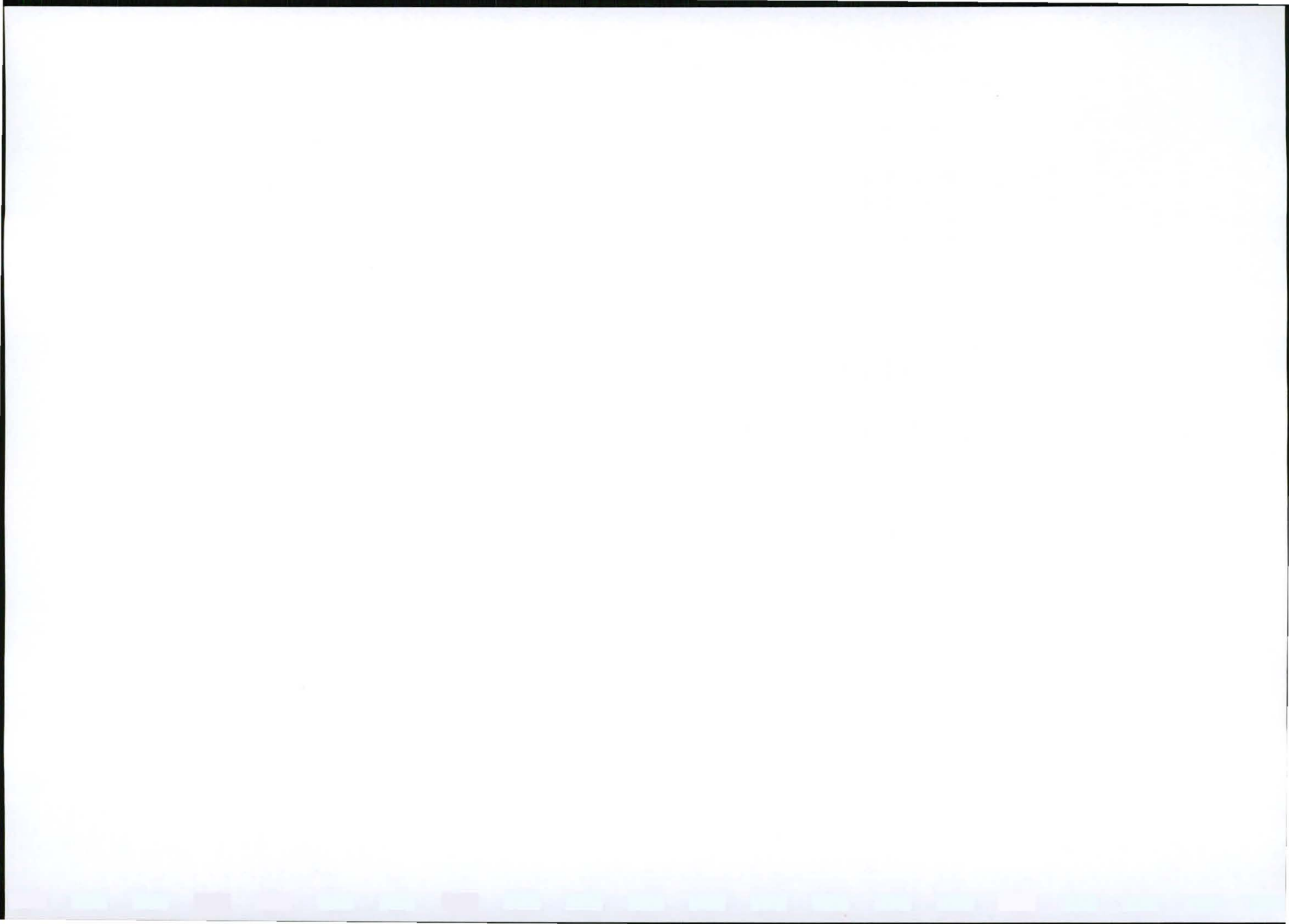
2.5.9 Review of the Draft Scoping Report

The draft scoping report will be made available for public and authority review. The public and relevant authorities will be given a 40 day period to review the report and to add any comments. It will also allow them the opportunity to assess whether all their issues have been correctly captured.

Registered IAPs will be notified that the draft report is available for review, as well as where it will be available. Electronic copies of the report will be e-mailed or delivered on CD-ROM to registered IAPs or sent by means of registered mail.

2.5.10 Scoping Report Finalisation

Following the closure of the review period, final modifications will be made to the scoping report. The final scoping report will then be submitted to the public for comment and to the relevant authorities for assessment. The authorities will give any input on the way forward during the EIA phase.



3. Project Information

3.1 Scope of Work

The proposed project entails the expansion of the existing Char Manufacturing Plant (Figure 7) by increasing the number of retorts from 4 to a maximum of 12. This expansion, in essence, involves an increase in size of the existing plant and thus also expansion the existing infrastructure (Figure 6).

The expansion to the Char Manufacturing Plant will be located directly adjacent to the existing plant and will therefore also be located within the Old Middling Stock Pile area. This area was previously used by Grootegeluk Mine for the stockpiling of coal resources. The existing Char Manufacturing Plant infrastructure covers an area of approximately 5.5 ha and the expanded infrastructure will be approximately 3.2 ha. The Char Manufacturing Plant lease area in total is approximately 13.9 ha in size.

As previously mentioned, a separate EIA process is being conducted for two additional plants which are proposed to be constructed adjacent to the Char Manufacturing Plant Expansion - the Coke Manufacturing Plant and Electricity Co-generation (co-gen) Plant (Figure 6).

3.2 Project Description

3.2.1 Char Process

Char is a metallurgical carbon reductant and is increasingly used to supplement market coke due to the limited availability of imported coking coal. The Char Manufacturing Plant is therefore in a prime position, as it has access to suitable coal feedstock as well as being close to major consumers (ferro-chrome, ferro-manganese and platinum producers).

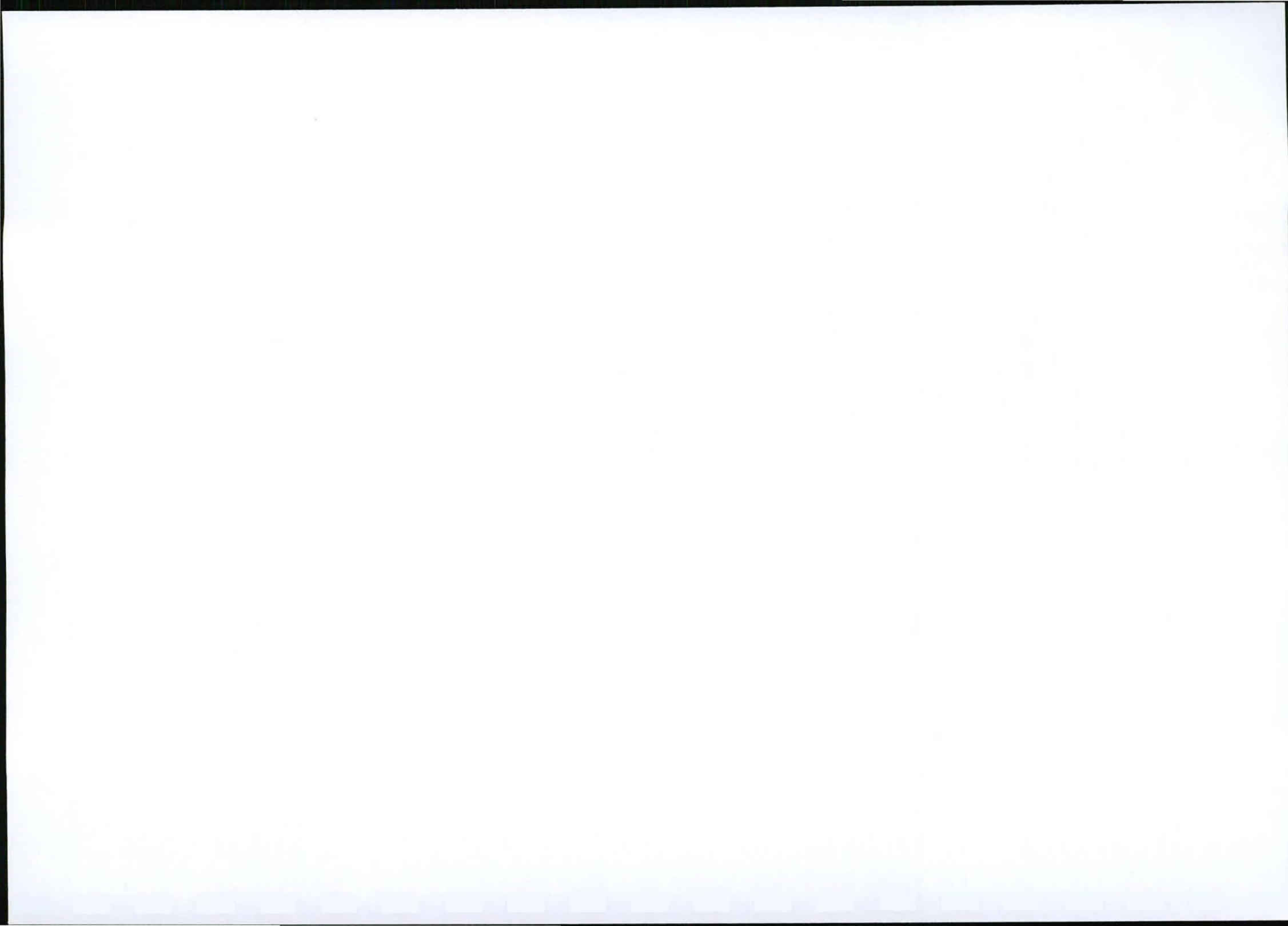
The Char Manufacturing Plant involves the conversion of lumpy coal blends to high quality carbon reductants (char) through de-volatilization by releasing volatile compounds through heating the coal at approximately 900°C. The process takes place in a closed circuit and involves the re-application of gaseous heat in the absence of oxygen, which maximises the recovery of lumpy carbon – this reaction takes place in vertical retort. Refer to for a detailed description of the Char process.

The Char process can essentially be broken down into 4 process streams:

- The coal feed system,
- The retort system,
- The gas system, and
- Liquors.

Coal feedstock from Grootegeluk Mine is transported to the Char Manufacturing Plant via an overland conveyor system. The feedstock is then washed and sized. Fine pieces of coal, less than 15 mm in size are discarded and transported back to Grootegeluk Mine. The feedstock is fed into the retorts via a double seal/lock mechanism, to prevent gas escaping and oxygen ingress into the retort. The coal is heated within the retort system to a temperature of 950 °C which drives off the tar and volatile gas.

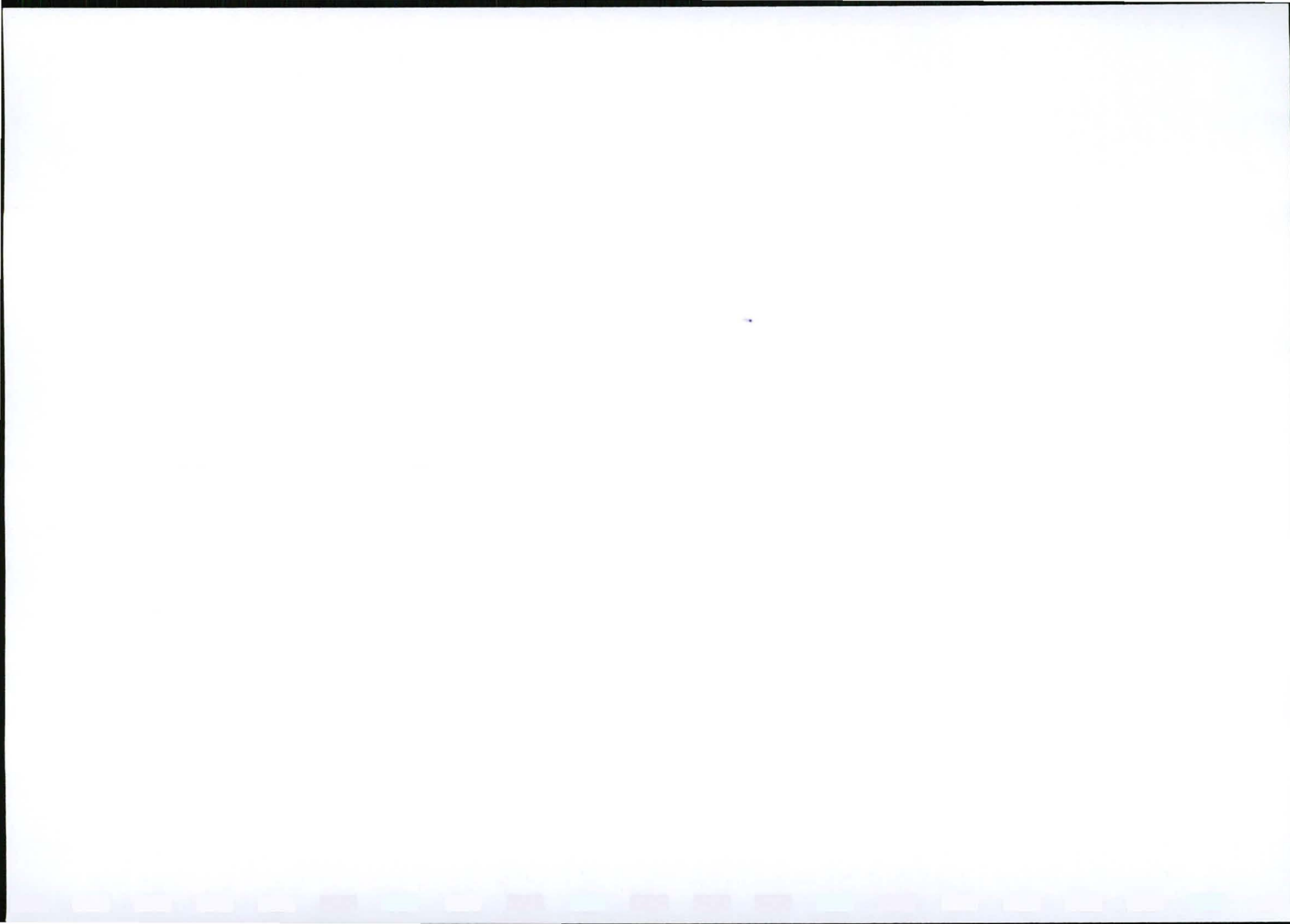
The volatile gas leave the top of the retort and contain methane, hydrogen, tar and oil gas and a small quantity of sulphur dioxide. This coal off-gas is then cleaned by first precipitating the tar into tar tanks.



The volatile gas from the retort system is passed through electrostatic precipitators, which remove the tar and light oils from the gas. Tar is transported to storage tanks, from where it is collected by a contractor.

The remaining coal off-gas is then cooled to 10 °C above ambient temperature to precipitate water, which will contain a small amount of hydrocarbon oils and sulphur. The volatile gas is then flared into the atmosphere from the flare stacks. The precipitated water from the gas cooling systems and gas booster fans is termed liquor due to fact that it still contains some hydrocarbons and sulphur. The liquor is destroyed in a liquor destructor by burning it with coal gas produced by the Char Manufacturing Plant to form primarily CO₂ and H₂O, which then exit the stack. Refer to the process diagram in Figure 5.

Currently the emmitted gas from the Char Manufacturing Plant is wasted energy, and at a later stage the Char Manufacturing Plant intends to convert this wasted energy into steam to generate electricity by means of a Circulating Fluidized Bed boiler.



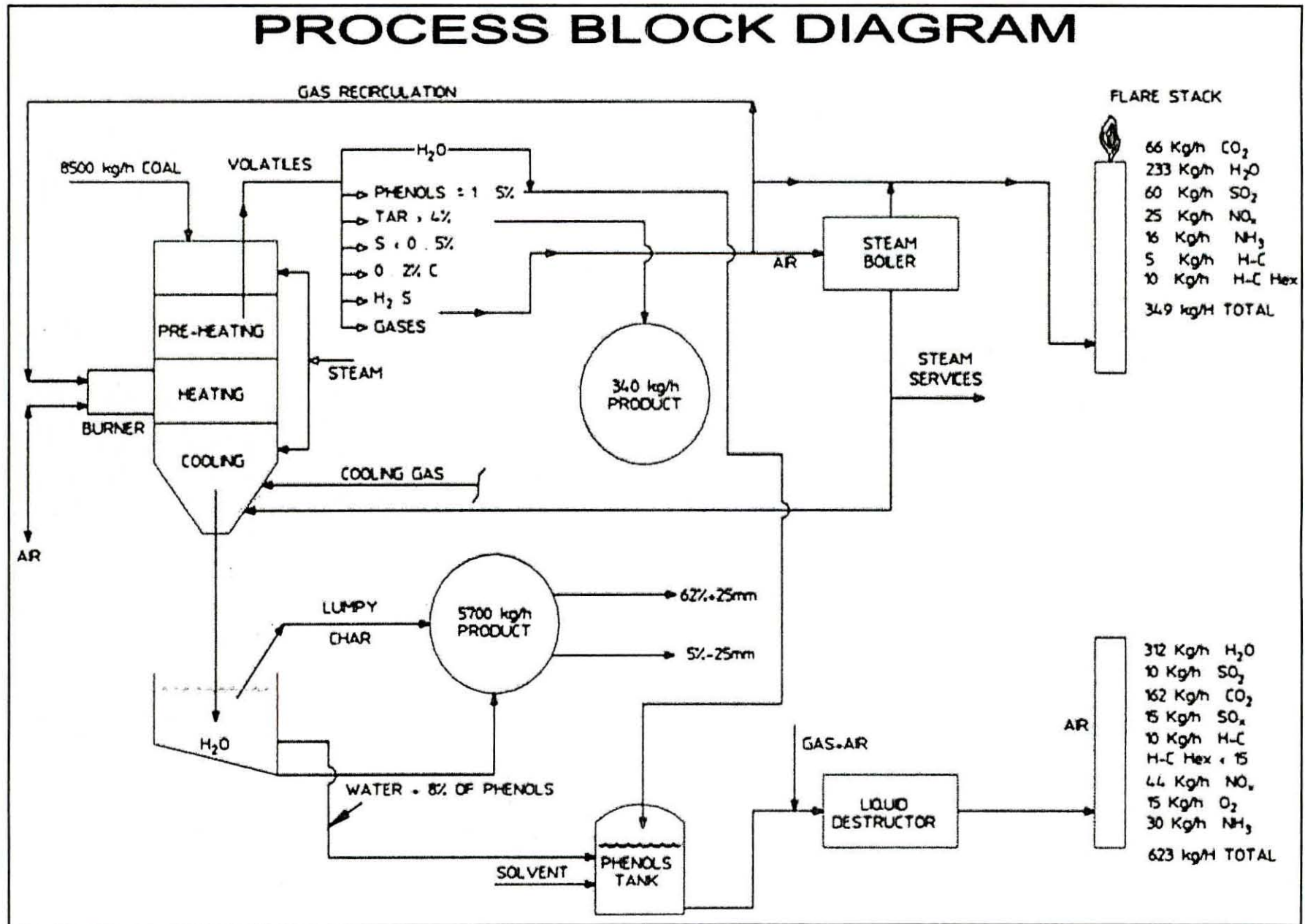


Figure 5: Process block diagram of Char Manufacturing Plant (per Retort)