REPORT

Final Scoping Report for the Proposed iMpunzi South Pit Coarse Discard Dump and Venture Co-disposal Facility Project

Glencore Operations South Africa (Pty) Ltd

DMR Ref. Number: (MP) 30/5/1/1/3/2/1 (375) EM

Submitted to:

Martha Seshweni
Mine Environmental Management: Mpumalanga Region
Saveways Crescent Centre
Mandela Drive
eMalahleni
1035

Submitted by:

Golder Associates Africa (Pty) Ltd.
P O Box 6001 Halfway House, 1685 Podium at Menlyn, Second Floor
43 Ingersol Road Menlyn Pretoria, 0181 South Africa

+27 11 254 4800

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ENVIRONMENTAL IMPACT ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT: Glencore Operations South Africa (Pty) Ltd: iMpunzi Mine Complex

TEL NO: 013 687 8299

POSTAL ADDRESS: Private Bag x7265, Witbank, 1035

PHYSICAL ADDRESS: Portion 31 IS Farm Blesbokfontein District Bethal, eMalahleni Local Municipality of the larger Nkangala District Municipality

FILE REFERENCE NUMBER: (MP) 30/5/1/1/3/2/1 (375) EM

SAMRAD: N/A

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an environmental authorisation can be granted following the evaluation of an Environmental Impact Assessment and an environmental management programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of Section 16(3)(b) of the Environmental Impact Assessment (EIA) Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the competent authority and in terms of Section 17 (1) (c) the competent authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is, therefore, an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the regulation and will lead to the refusal of the environmental authorisation.

It is furthermore an instruction that the environmental assessment practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The environmental assessment practitioner (EAP) must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un- interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The objective of the EIA process is to, through a consultative process—

(a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;

(b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;

(c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;

(d) determine the—-

(e)

(i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and

(ii) degree to which these impacts—

(aa)can be reversed;

(bb)may cause irreplaceable loss of resources, and (cc)can be avoided, managed or mitigated;

(f) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;

(g) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;

(h) identify suitable measures to manage, avoid or mitigate identified impacts; and

(i) identify residual risks that need to be managed and monitored.

PURPOSE OF THIS DOCUMENT

Glencore Operations South Africa (GOSA), is considering the expansion of the South Pit and Venture Dump discard facilities at their iMpunzi Mining Complex on the farms Kromfontein 30 IS, and Klipplaat 14 IS respectively, located in the Magisterial District of eMalahleni in the Mpumalanga Province. The proposed expansions require iMpunzi to submit an application for a Waste Management Licence and Environmental Authorisation, supported by an environmental impact assessment (EIA) in terms of the 2014 EIA Regulations, as amended April 2017, to the competent authority the Department of Mineral Resources and Energy (DMRE).

As part of the EIA process, iMpunzi is required to submit a scoping report, an EIA report and an environmental management programme report (EMPr), which describe the environmental impacts of the proposed development and how they will be managed and mitigated.

Golder Associates Africa (Pty) Ltd, an independent environmental assessment practitioner, has been appointed by iMpunzi to conduct the EIA and associated licensing processes.

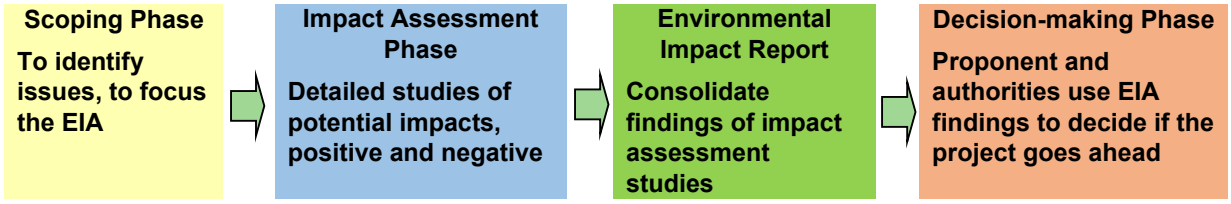
This draft scoping report was presented to stakeholders so that they were given the opportunity to comment on the project, the proposed activities and the proposed scope of the specialist studies. The comments received were recorded in the final scoping report (this report), which were submitted to the DMRE for approval. Further opportunity will be provided to stakeholders to comment during the impact assessment phase. Feedback will also be provided when a decision on the project has been made.

The due date for comment on the draft scoping report closed on **Monday, 9 December 2019**. Comments received during the public review period has been acknowledged and recorded in the final version of the scoping report, which will be submitted to the DMRE.

Summary of what the scoping report contains

This report contains:

- A description of the proposed mining related activities;
- An overview of the EIA process, including public participation;
- A description of the existing environment in the proposed project area;
- The anticipated environmental issues and impacts which have been identified;
- The proposed scope of specialist studies planned for the Impact Assessment phase; and
- A list of interested and affected parties and their comments.



The figure above shows the various phases of an EIA. This EIA is in the scoping phase, during which interested and affected parties comment on the proposed project.

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TABLE OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
BEE	Black Economic Empowerment

Acronym	Definition
ATC	Arthur Taylor Colliery
ATCOM	Arthur Taylor Colliery Opencast Mine
BA	Basic Assessments
CRR	Comments and response report
CV	Curricula Vitae
DMRE	Department of Mineral Resources and Energy
DSR	Draft scoping report
DHSWS	Department of Human Settlements, Water and Sanitation
EA	Environmental authorisation
EAP	Environmental assessment practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
EMPR	Environmental Management Programme reports
ESHIA	Environmental social and health impact assessment
FSR	Final Scoping Report
GAA	Golder Associates Africa
GOSA	Glencore Operations South Africa
I&AP	Interested and affected party
LoM	Life of Mine
MAR	Mean Annual Recharge
MPRDA	Mineral and Petroleum Resources Development Act No. 28 of 2002
NAAQS	National Ambient Air Quality Standards;
NEMA	National Environmental Management Act No. 107 of 1998
NEMAQA	National Environmental Management: Air Quality Act No. 39 of 2004
NEMWA	National Environmental Management: Waste Act No. 59 of 2008.

Acronym	Definition
NWA	National Water Act No. 36 of 1998
PCD	Pollution control dams
PES	Present ecological status
RWD	Return water dam
SP	Significance points
VDD	Vandyksdrift
VOC	Volatile organic compounds
WMA	Water Management Area
WML	Waste Management Licence

1.0 INTRODUCTION AND BACKGROUND

Glencore Operations South Africa's (GOSA) iMpunzi Mine Complex is located 27 km south-east of eMalahleni in the Mpumalanga Province, near the towns of Ogies and Kriel. The complex consists of four (4) sections, namely: Arthur Taylor Colliery (ATC), Phoenix (decommissioned), Arthur Taylor Colliery Opencast Mine (ATCOM), and ATCOM East (Figure 1).

GOSA has appointed Golder Associates Africa (Pty) Ltd (Golder) as an independent environmental assessment practitioner (EAP) to undertake the regulatory application process for the proposed the expansion of the South Pit and Venture Dump discard facilities at their iMpunzi Mining Complex. The proposed South Pit Discard Dump will receive course discard from the Phoenix Plant. The South Pit is a previously mined-out area and has been partially rehabilitated. The existing Venture Discard Dump footprint will be expanded, and the facility will be modified into a co-disposal facility to accommodate both coarse and fine (slurry) discard. A new return water dam (RWD) will be constructed as part of the development of the Venture Co-disposal Facility. The co-disposal facility will receive coarse discard and slurry from the ATC Plant, which sources coal from opencast workings and from discard dump reprocessing. As part of the proposed discard expansion project, an existing haul road from the ATCOM Discard Dumps to the ATC Coal Processing Plant will be widened.

The above activities require authorisation in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) (as amended), the National Water Act, 1998 (Act 36 of 1998) (NWA), and the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEMWA) (as amended). The application process must be supported by an environmental impact assessment (EIA) in terms of the 2014 EIA Regulations, as amended in April 2017, to be submitted to the competent authority, the Department of Mineral Resources and Energy (DMRE).

As part of the EIA process, this report (Final scoping report) has been compiled, to document the proposed activities and proposed scope of the specialist studies.

1.1 Contents of this report

The main purpose of this scoping report is to provide a description of the current baseline environmental conditions within the proposed project area and to present the proposed scope of work to develop the EIA for the proposed activities.

This document has been structured as follows to meet the requirements of the 2014 EIA Regulations, as amended in April 2017:

- **Introduction and overview** – Introduce the project and the project proponent, provides an overview of the Project, provides the details of the environmental practitioner, and explains the EIA process;
- **Project Motivation** – Motivates the need for and desirability of the project;
- **EIA Process** – Summarises the process being undertaken with respect to the EIA for the project, inclusive of the methodology utilised for scoping;
- **Description of the Proposed Project** - Provides a summary of the key project components, the project location, scale, nature and design, production process, main inputs and outputs, schedule and activities during different phases of the project, inclusive of a description of the project location and the properties on which the project will take place;
- **Project Alternatives** – Summarises alternatives considered by the project proponent;
- **Policy, Legal and Administrative Framework** – Discusses the environmental policy, legal, and administrative framework applicable to the proposed project. This framework includes a summary of relevant South African regulations, the applicable administrative framework, and the environmental permitting process;

- **Description of the Environment that may be affected** – Describes the current pre-project biophysical, socio-economic, and cultural status of the area, key characteristics (sensitive or vulnerable areas), important heritage resources, current land use and livelihoods;
- **Environmental Issues and Potential Impacts of the Project -** Summarises the identified impacts and issues and potential mitigation measures that will be assessed further in the EIA. This section also includes the plan of study for the impact assessment;
- **Public Consultation** – This section provides a summary of the public consultation activities proposed and carried out as part of the EIA/EIA processes;
- **Next Steps in the Process** – Indicates what the next steps in the process are;
- **References** – References to literature consulted; and
- **Appendices** – Technical material supporting the scoping report, including the Curricula Vitae (CV) of the EAP, stakeholder comments and supporting information, and document limitations.

2.0 PROPONENT AND PRACTITIONER DETAILS

2.1 Details of the proponent and environmental assessment practitioner

2.1.1 Details of the proponent

For this EIA, the following person may be contacted at Glencore:

Table 1: Proponents contact details

Proponent Contact Details	
Contact person	Tebogo Chauke
Address	Glencore Operations South Africa (Pty) Ltd: iMpunzi Mine Complex Private Bag x7265, Witbank, 1035
Telephone number	013 687 8299
Cell Phone number	073 765 0999
E-mail	Tebogo.Chauke@glencore.co.za

2.1.2 Details of environmental assessment practitioner

GOSA has appointed Golder Associates Africa (Pty) Ltd as an independent environmental assessment practitioner (EAP) to undertake the EIA that is required to support the EA application for the proposed extension of the Venture discard facility, establishment of a new RWD and the establishment of the South Pit coarse discard dump.

Golder Associates Africa is a member of the world-wide Golder Associates group of companies, offering a variety of specialised engineering and environmental services. Employee owned since its formation in 1960, the Golder Associates group employs more than 8 000 people who operate from more than 180 offices located throughout Africa, Asia, Australasia, Europe, North America and South America. Golder Associates Africa (GAA) has offices in Midrand, Pretoria, Florida, Durban, Rustenburg, Cape Town, Maputo and Accra. GAA has more than 300 skilled employees and can source additional professional skills and inputs from other Golder offices around the world.

GAA has no vested interest in the proposed project and hereby declares its independence as required by the South African EIA Regulations.

For purposes of this EIA, the following persons may be contacted at GAA:

Table 2: Contact details of the environmental assessment practitioner

Contact persons:	Mariëtte Weideman	Antoinette Pietersen
Purpose:	Technical	Public Participation
Address:	P.O. Box 6001 Halfway House 1685	P.O. Box 6001 Halfway House 1685
Telephone:	011 254 4883	011 254 4805
Fax:	086 582 1561	086 582 1561
Cell phone:	084 515 6965	083 280 5024
E-mail:	mweideman@golder.co.za	apietersen@golder.co.za

2.1.3 Expertise of environmental assessment practitioner

2.1.3.1 Qualifications of EAP

Education

- B.Sc. Biological Sciences in Botany and Biochemistry - North West University (Potchefstroom Campus)
- B.Sc. (Hons) Environmental Sciences and Development - North West University (Potchefstroom Campus)
- B.Sc. (Hons) Environmental Management - University of South Africa (UNISA)
- AVCASA Crop Protection Diploma - Tshwane University of Technology

Career Enhancing Courses

- Planning for Effective Public Participation - IAP2
- Communications for Effective Public Participation - IAP2
- Microsoft Project 2007 Essentials - BYTES Technology Group
- Project Management Fundamentals - Golder Associates (internal training)
- Environmental Law for Environmental Managers - Centre for Environmental Management, Potchefstroom.
- ISO 14001:2015 Environmental Management Systems Lead Auditors course based on ISO 19011 and 17021 Requirements - South African Bureau of Standards (SABS), 12-16 November 2018
- Implementation and Facilitation of Environmental Management Systems based on ISO 14001:2015 Requirements - South African Certification and Auditing Services (SACAS), 27-29 March 2017.

Professional Affiliations

- Professional Natural Scientist (Pr.Sci.Nat) (Reg. No.400107/17) - South African Council for Natural Scientific Professions.

2.1.3.2 Summary of experience

Mariëtte Weideman has worked in environmental consultancy for over eight years. She joined Golder in 2011 in the Mine Environment Division, gaining work experience in Environmental Management, specialising in Environmental Performance and Legal Compliance auditing, Environmental and Social Impact Assessments, Basic Assessments (BAs), Environmental Management Programme reports (EMPRs) for mining and industry, Section 24G applications, the Public Participation Processes, and Mine Closure Planning. Mariëtte has experience with Southern African legislation as well as International Finance Corporation Performance Standards and Equator Principles. Mariëtte has completed the SAATCA approved EMA Lead Auditors examination through the completion of the ISO 14001:2015 Environmental Management Systems Auditing course (a copy of the EAP's CV is attached in APPENDIX B).

2.2 Description of the property

The extent of the iMpunzi Complex mining right area (MRA) is 6835 ha Figure 3. The proposed activities will be located over sections of various farm portions within the MRA, as summarised in Table 3 and Figure 2 below.

Table 3: Details of the properties associated with the project

Farm names:	Klipplaats 14 IS Portions 1 and 14; Kromfontein 30 IS Portions 2, 3, 12, 14, 20, 22, 23, and 28; Blesbokfontein 31 IS Portion 2	
Application area (Ha):	267Ha	
Magisterial district:	eMalahleni Local Municipality of the larger Nkangala District Municipality	
Distance and direction from nearest town:	110 km east of Johannesburg and 27 km south of the town of eMalahleni	
SG codes:	■ T0IS00000000001400001 ■ T0IS00000000001400014 ■ T0IS00000000003000002 ■ T0IS00000000003000002 ■ T0IS00000000003000003 ■ T0IS00000000003000003 ■ T0IS00000000003000012	■ T0IS00000000003000014 ■ T0IS00000000003000020 ■ T0IS00000000003000022 ■ T0IS00000000003000023 ■ T0IS00000000003000028 ■ T0IS00000000003100002

2.3 Locality map

The iMpunzi Complex is located 27 km south-east of eMalahleni in the Mpumalanga Province, near Ogies and Kriel towns and forms part of both the eMalahleni and Steve Tshwete Local Municipalities of the Nkangala District Municipality. The Nkangala District around eMalahleni is known as a diversified mining region, the dominant activity within the region are mining and manufacturing (eMalahleni Local Municipality, 2015).

Figure 1 below illustrates the locality of the proposed Venture Co-disposal Facility, the new RWD, expanded haul road and the proposed South Pit Discard Dump in relation to the surrounding towns, roads and regional watercourses.

The proposed facilities are located in the B11E and B11F quaternary catchments (Figure 14) of the Olifants River Water Management Area (WMA), which are located within Catchment Management Units (CMU) 5, 7 and 9a of the Witbank Dam catchment.

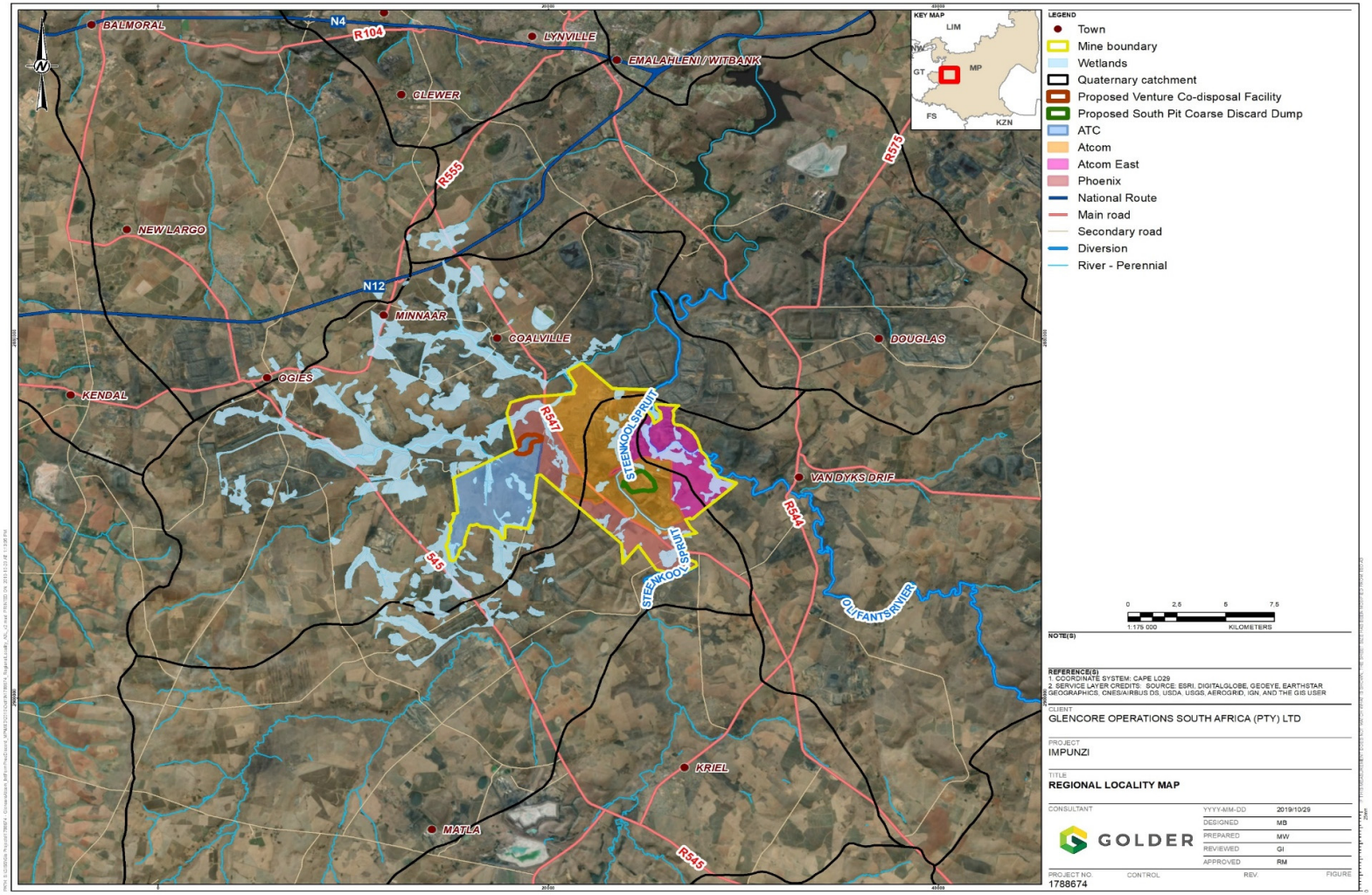
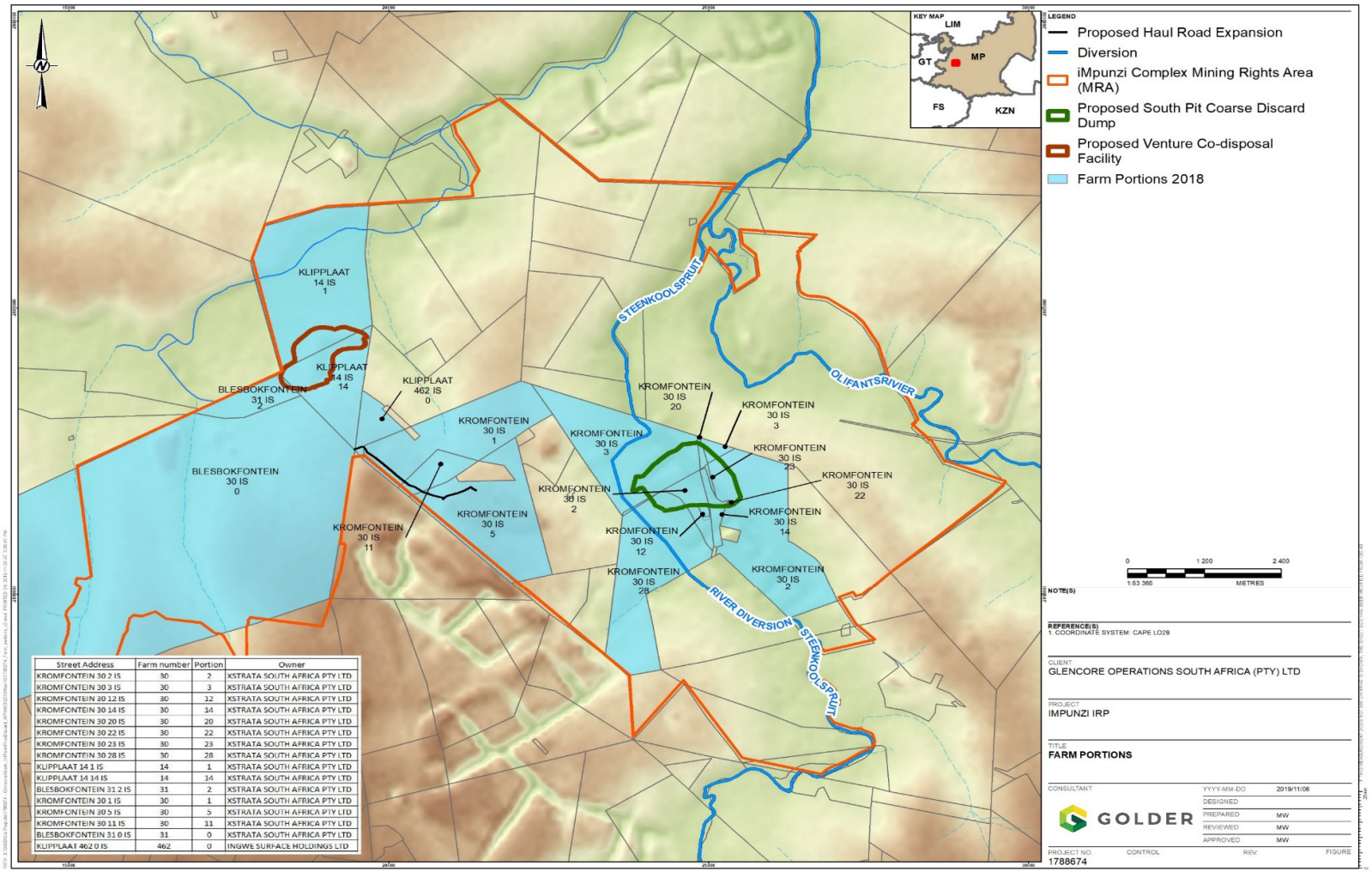


Figure 1: Regional Locality of the iMpunzi Complex and the proposed disposal facilities



Street Address	Farm number	Portion	Owner
KROMFONTEIN 30 2 IS	30	2	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 3 IS	30	3	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 12 IS	30	12	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 14 IS	30	14	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 20 IS	30	20	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 22 IS	30	22	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 23 IS	30	23	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 28 IS	30	28	XSTRATA SOUTH AFRICA PTY LTD
KLIPPLAAT 14 1 IS	14	1	XSTRATA SOUTH AFRICA PTY LTD
KLIPPLAAT 14 14 IS	14	14	XSTRATA SOUTH AFRICA PTY LTD
BLESBOKFONTEIN 31 2 IS	31	2	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 1 IS	30	1	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 5 IS	30	5	XSTRATA SOUTH AFRICA PTY LTD
KROMFONTEIN 30 11 IS	30	11	XSTRATA SOUTH AFRICA PTY LTD
BLESBOKFONTEIN 31 0 IS	31	0	XSTRATA SOUTH AFRICA PTY LTD
KLIPPLAAT 462 0 IS	462	0	INGWE SURFACE HOLDINGS LTD

Figure 2: Affected farm portions linked to the proposed disposal facilities

2.4 DESCRIPTION AND SCOPE OF THE PROPOSED OVERALL ACTIVITY

2.4.1 Current iMpunzi mining operations

The iMpunzi Complex consists of four (4) collieries or sub-sections, namely: ATC, Phoenix Colliery, ATCOM, and ATCOM East. Coal mining within the complex was initiated at the Phoenix Colliery in 1936 (Figure 3). Operations at all four colliers have historically been underground. However, all underground operations ceased in 2008, and all remaining operations are opencast.

All opencast mining is undertaken using the strip-mining method using draglines, and truck and shovel at the smaller open pits. All hard overburden (shale/sandstone) and coal are blasted using bulk explosives (heavy ammonium nitrate and fuel oil emulsion). The coal is transported by a fleet of trucks to the crushing and pillar screening plant (Golder, 2016b).

The physical extent of the entire iMpunzi Complex for which there is a mining right extends over approximately 6 835 ha.

The existing infrastructure at the iMpunzi Complex includes the following:

- Primary river / stream diversion;
- Secondary water management in the form of canals;
- Various in-pit channels;
- Stockpiles (ROM and product);
- Tipping and crushing facilities;
- Discard and co-disposal facilities;
- Coal processing plants;
- Water treatment plant (potable water);
- Sewage treatment plants;
- Offices;
- Workshop areas;
- Stores;
- Water management canals and pipeline systems;
- Pollution control dams (PCDs);
- Settling dam facilities;
- Stores;
- On site roads (tar and gravel which also allow access to the neighbouring farms);
- Power lines that pass from east to west through the mine lease area;
- Roads which include the R547, local road to Onverwacht which links the R547 and R545 north / south, a local road to Frischgewaagd which links the R547 and R545 east/ west, and local road between Klipplaat and Leslie;
- The main Richards Bay coal transporting railway line; and
- Eskom 132, 88, 33, 21 and 11 kV power lines with substations.

2.4.1.1 Arthur Taylor Colliery

Operations at ATC traditionally consisted of underground workings but also included an opencast operation called the Butterfly Pit. The operation has its own coal processing plant and has rail load-out facilities for coal transportation, via the adjacent Transnet railway. Underground mining of the No. 2 and No. 4 seams at ATC ceased in 2008. Opencast strip-mining operations at Butterfly Pit commenced in 2009 but have since concluded and now has been rehabilitated (Golder a, 2016).

Additional opencast strip mining is proposed at the ATC Office and Phoenix Pits. Coal will be mined from these pits utilising the truck and shovel method. The ATC Office Pit 1 is located on the site of the iMpunzi Complex offices, and the office will have to be demolished before operations can commence. The coal mined at the ATC Office and Phoenix Pits will be processed at the ATC and ATCOM Central Plant.

2.4.1.2 Arthur Taylor Colliery Opencast Mine

The ATCOM area consists of both opencast and underground coal mining operations. Operations at the ATCOM area commenced in 1991, and the extent of the South Pit covered the original course of the Steenkoolspruit. A permanent river diversion was constructed to divert the Steenkoolspruit around the South Pit (Jones & Wagener, 2014).

Current mining activities at ATCOM comprise of opencast mining of the North Pit (pillar extraction from old underground workings). Mining at ATCOM is expected to cease in 2025. The coal mined at ATCOM is transported to the ATCOM Central Plant where it is washed and conveyed to the linear stockpile at ATC. From there, it is conveyed to a rapid load-out silo situated at ATC, from where it is transported via rail to Richards Bay for export (Jones & Wagener, 2014).

2.4.1.3 Phoenix Colliery

The Phoenix area is situated to the south-west of ATCOM and east of the ATC, and coal has been mined here since 1936. The Phoenix area consists of the slurry lagoon area, discard facility (extension of the ATCOM/Phoenix dump located on the old Phoenix Plant area) and underground areas. Mining activities at the Phoenix Colliery ceased in 2008 (Jones & Wagener, 2014). All of the facilities at the Phoenix Colliery are inactive except for the Phoenix 1 seam, where mine affected water is stored.

2.4.1.4 Arthur Taylor Colliery Opencast Mine East

The mining operation includes opencast mining of historical underground bord and pillar operations, previously owned by BHP Billiton Energy Coal South Africa (Jones & Wagener, 2014). The new mining operations are situated near Vandyksdrift (VDD) and are known as ATCOM East. Mining at ATCOM East makes use of truck and shovel as well as dragline operations. The ATCOM East mining operations are divided into five areas, namely:

- Steenkoolspruit Pit: Mining by GOSA commenced at the Steenkoolspruit Pit in January 2009. The current LoM plan indicates that mining will resume in 2025 and end in 2029. This pit will be mined by dragline;
- River shaft South Pit: It is proposed to commence mining at river shaft South Pit in 2021 and mining will continue until 2031. Due to the restricted area of this pit, it will most likely be mined using the truck and shovel method;
- VDD South Pit: This is the largest pit and will be mined concurrently with the River South Pit. Mining is anticipated to continue until 2035. The pit will be mined by dragline;
- River shaft West Pit: Mining of this pit was scheduled to commence in 2014 and continue until 2024; and
- VDD West Pit: This pit will be mined using the truck and shovel method from 2024 until around 2033.

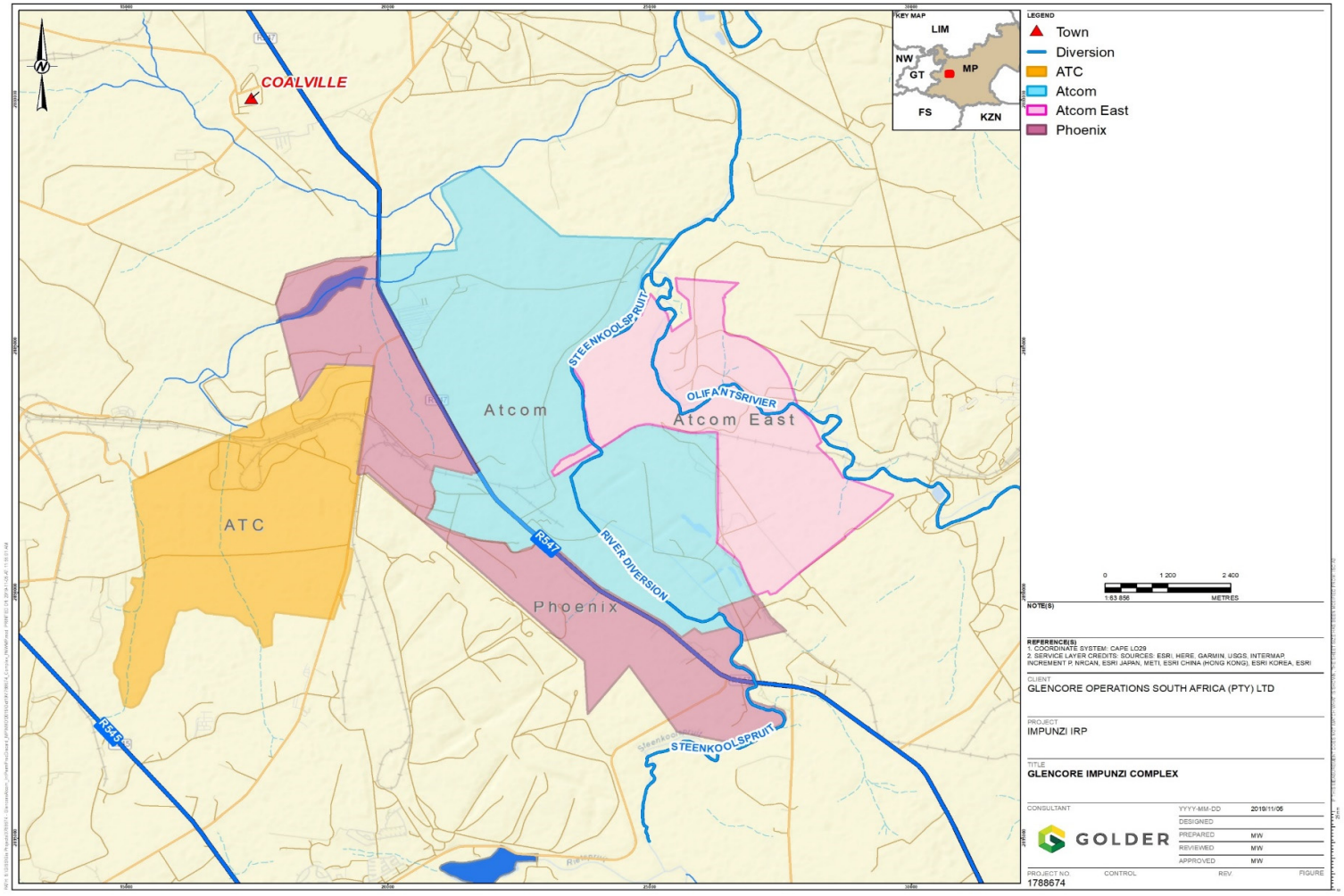


Figure 3: iMpunzi Complex – Sub-sections

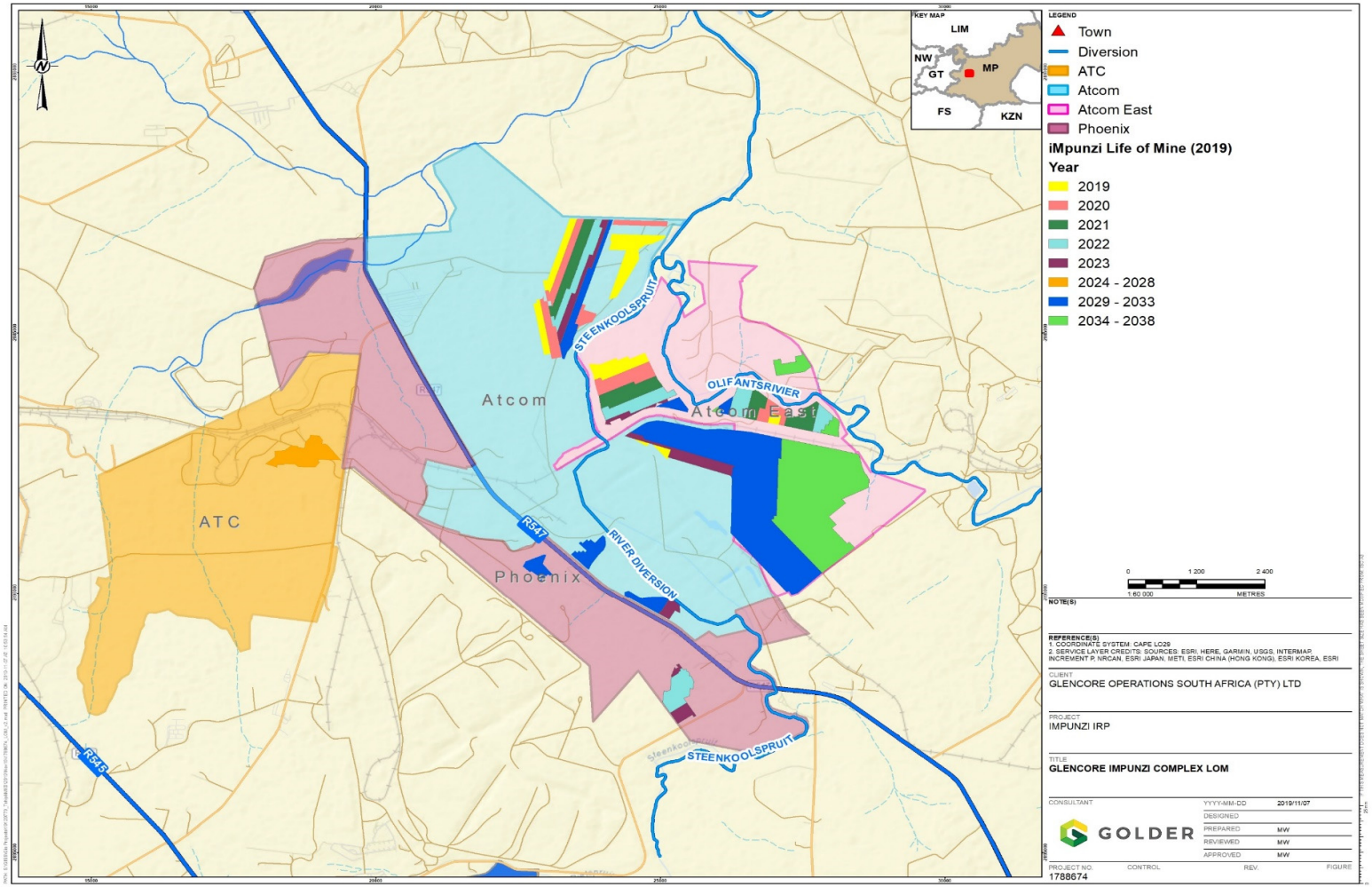


Figure 4: iMpunzi Complex Life of Mine Plan

2.4.1.5 Life description of the existing operations

The remaining life of mine (LoM) for the entire iMpunzi is approximately 17 years. Production is anticipated to cease in 2036 (Figure 4). The LoM schedule is governed by qualitative and quantitative requirements in the market, and future amendments to the overall mining schedule may be included in the LoM plan.

2.4.2 Proposed activities

2.4.2.1 Proposed Venture co-disposal facility

The current Venture Discard Dump is used for the disposal of coal discard which originates from the processing of coal at the ATC Plant. The facility is located on the mined-out ATC Venture Pit. The current discard dump is expanding at a notable pace, and needs to be expanded upon to accommodate additional volumes of discard and be modified into a co-disposal facility to also accommodate fine discard (slurry). The facility will have a lifespan of approximately 13 years and footprint area of maximum 1.3 Mm^2, which is limited to the remainder of the backfilled historic ATC Venture Pit footprint area. The slurry will be piped from the ATC Plant to the facility via pipeline (see Figure 5). Excess mined affected water from the facility will be managed at a new proposed RWD.

2.4.2.1.1 Proposed return water dam

There is a pollution control dam (PCD) currently located to the north of the existing Venture Discard Dump. The purpose of the PCD is to receive and contain mine affected water from the existing Venture Dump. However, due to the location and size of the current PCD, it will be necessary to replace this facility with a larger water storage facility, referred to as the RWD, to receive supernatant water and contaminated runoff from the proposed co-disposal facility.

The location of the new RWD is proposed to the north west of the current Venture Discard Dump. A new pump station will be built to transport return water from the RWD to the ATC 2seam underground workings (see Figure 5) via a new pipeline and borehole. The water stored here will either be abstracted and sent to the ATC Plant for reuse in the coal processing process or sent to the GOSA Water Treatment Plant for treatment.

2.4.2.1.2 Proposed haul road expansion

iMpunzi proposes to reprocess some of the ATCOM discard dumps. In order to enable the transportation of the discard from the dumps to the ATC Plant (via haul trucks), the existing haul road needs to be widened (refer to Figure 5).

2.4.2.2 Proposed South Pit discard dump

The proposed South Pit Discard Dump will be located on an area which was historically opencast mined (South Pit) and then filled with spoils that have been shaped and levelled to various states towards rehabilitation (see Figure 6). The proposed South Pit Discard Dump will accommodate approximately 29 million m^3 of coarse discard. The maximum height of the dump will not exceed 30 m from the immediate surrounding ground elevations (Golder Associates, April 2018).

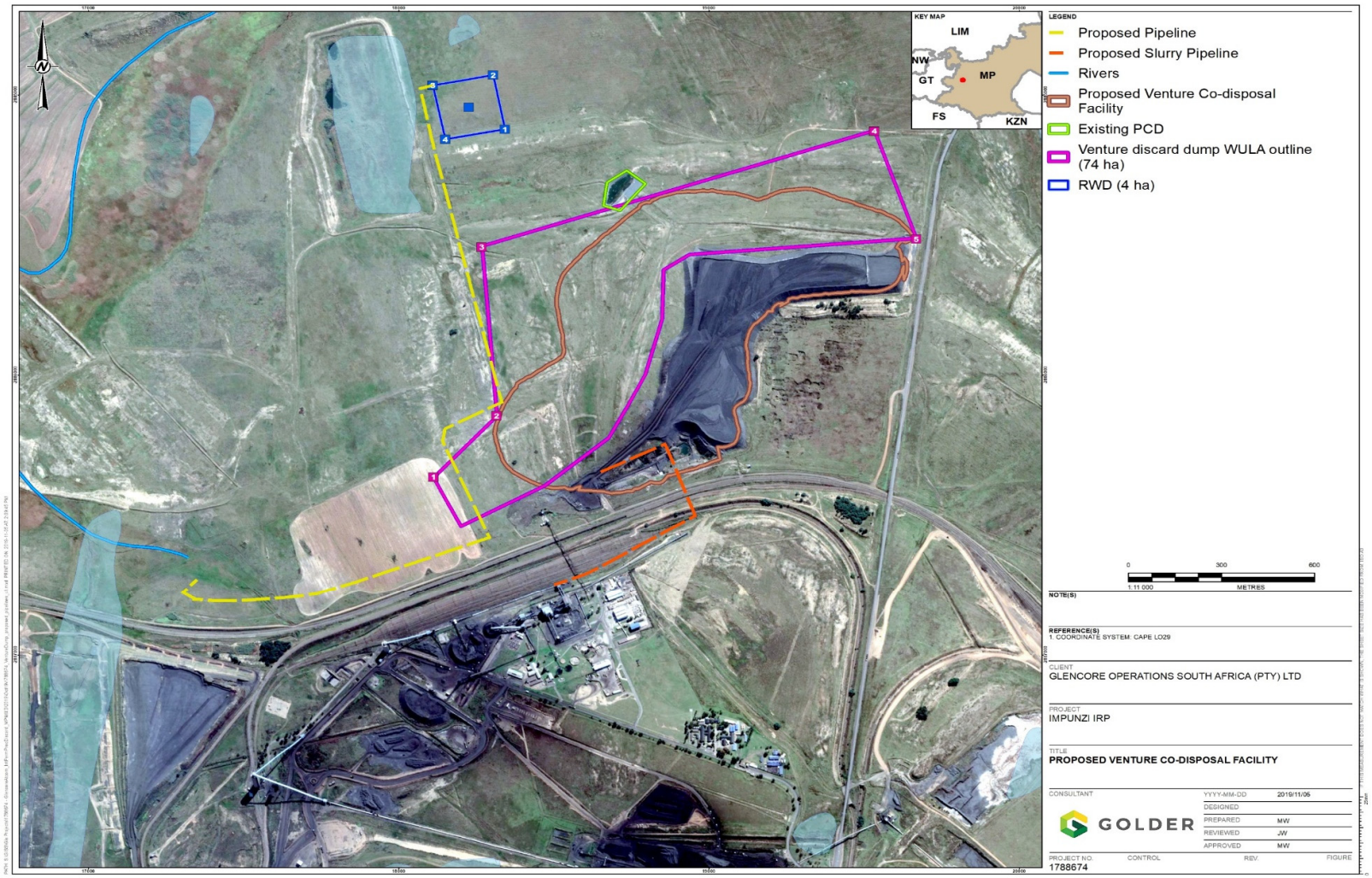


Figure 5: Current Venture Discard Dump and the proposed extended co-disposal facility footprint and return water dam

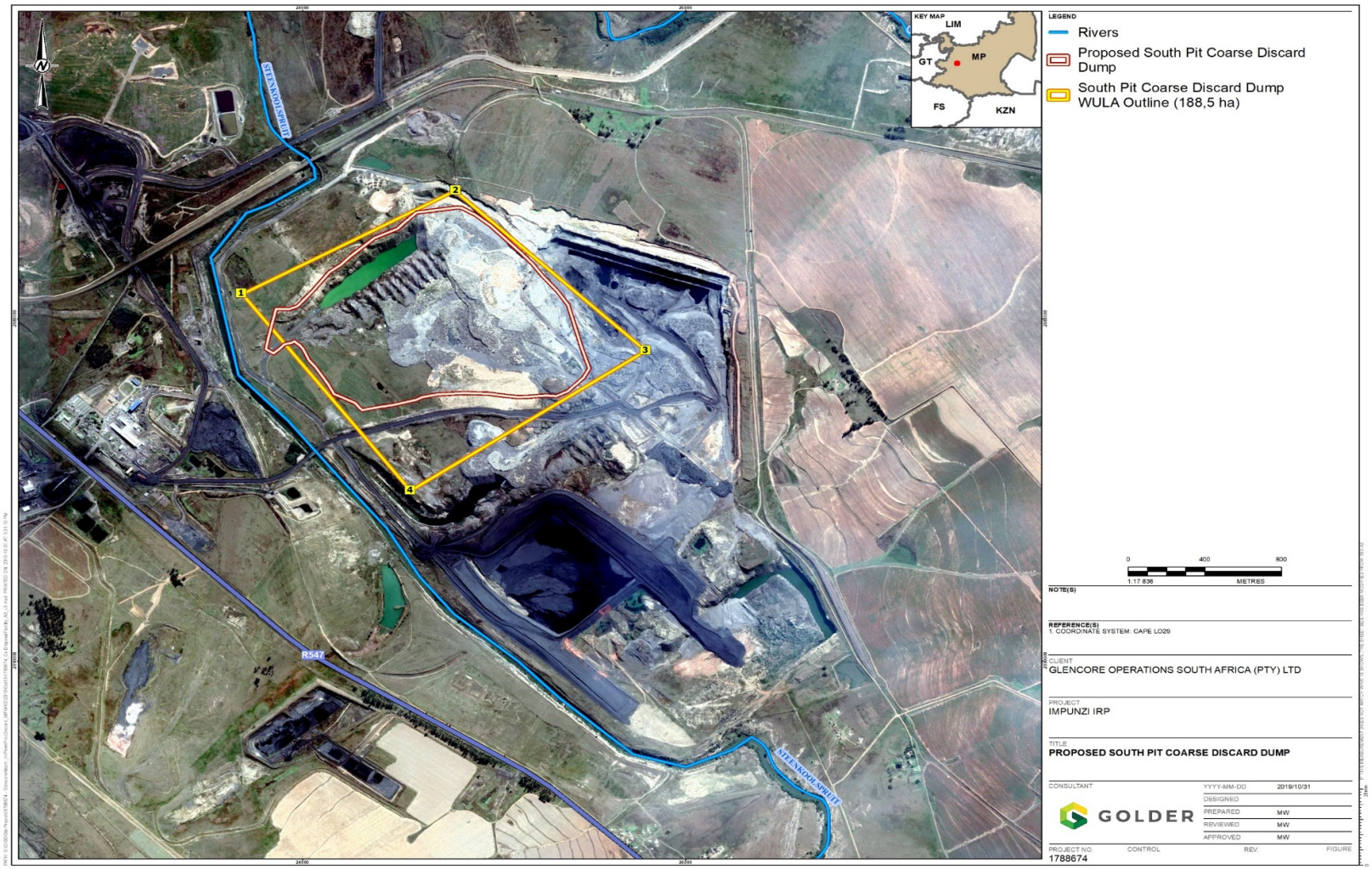


Figure 6: Footprint of the proposed South Pit Discard Dump

2.5 Listed and specific activities

Based upon the currently available information, the proposed project may trigger the following listed activities tabulated in Table 4, and Table 6, as outlined in the relevant EA.

Table 4: Possible listed activities requiring environmental authorisation in terms of GN R. 327 and GN R. 325

Listing Notice	Activity No	Activity No. Description	Proposed Activity Description
GN R.327, 4 December 2014 (as amended 7 April 2017) Basic Assessment	**10**	"*The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes–* *i) with an internal diameter of 0,36 metres or more; or* ii) *with a peak throughput of 120 litres per second or more*."	The is a potential for the proposed slurry and return water pipelines to trigger this activity due to their length, diameter and/or peak flow
	27	"*The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for –* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan*"	Clearance of vegetation over rehabilitated land for the expansion of the Venture Discard Dump
	34	"*The expansion of existing facilities or infrastructure for any process or activity where such expansion will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions, effluent or pollution*."	Water Use Licence application in terms of the NWA for the proposed RWD specifically will trigger this listed activity
GN R.327, 4 December 2014 (as amended 7 April 2017) Basic Assessment	**46**	"*The expansion and related operation of infrastructure for the bulk transportation of sewage, effluent, process water, wastewater, return water, industrial discharge or slimes where the existing infrastructure—* *(1) has an internal diameter of 0,36 metres or more; or* *(2) has a peak throughput of 120 litres per second or more; and* *(a) where the facility or infrastructure is expanded by more than 1 000 metres in length; or* *(b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more*."	The is a potential for the proposed slurry and return water pipelines to trigger this activity due to their length, diameter and/or peak flow
GN R.327, 4 December 2014 (as amended 7 April 2017)	**48**	*"The expansion of –* *i. infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or*	Expansion of existing culverts along proposed haul road expansion from the ATCOM Discard

Listing Notice	Activity No	Activity No. Description	Proposed Activity Description
Basic Assessment		*ii. dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more;* *where such expansion occurs-* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse"*	Dump to the ATC Plant
GN R.327, 4 December 2014 (as amended 7 April 2017) Basic Assessment	**56**	*The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre-* *i. where the existing reserve is wider than 13,5meters; or* ***ii.*** *where no reserve exists, where the existing road is wider than 8 metres.*	Proposed haul road expansion from ATCOM Discard Dump to the ATC Plant
GN R.325, 4 December 2014 (as amended 7 April 2017)- Scoping and Impact Assessment	**6**	"*The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding-* *(iii) activities which are identified and included in Listing Notice 1 of 2014;* *(ii) activities which are 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 the National Environmental Management: Waste Act, 2008 applies;* *(iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less; or* *(iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day*".	Water Use Licence application in terms of the NWA for the proposed RWD specifically will trigger this listed activity.
	15	"*The clearance of an area of 20 hectares or more of indigenous vegetation, except where such clearance of indigenous vegetation is required for –* *(i) the undertaking of a linear activity; or* *(ii) maintenance purposes undertaken in accordance with a maintenance management plan*"	Clearance of vegetation over rehabilitated land for the expansion of the Venture Discard Dump, including along

Listing Notice	Activity No	Activity No. Description	Proposed Activity Description
			the proposed haul road expansion from the ATCOM Discard Dump to the ATC Plant

2.6 Specific activities to be undertaken

The specific activities associated with the proposed project/activities will be:

Proposed Venture co-disposal facility and associated return water dam and haul road expansion

- Stripping and stockpiling of topsoil in the area where the facilities will be located, this may be done through the use of bulldozers and front-end loaders;
- Placement of coarse discard material for the facility embankments;
- Construction of the underdrainage system which could be constructed using soil or coal discard;
- Construction of soil or coal discard bunds to facilitate shaping and diversion of water and slurry;
- Construction of a decant system from the slurry portion of the co-disposal facility;
- Constructing and operating a storm water control system comprising of diversion berms and collection and conveyance channels to the existing dirty water systems;
- Construction of a plastic lined RWD, and associated pump station and pipelines; and
- Expansion of an existing haul road from ATCOM to ATC Plant for transportation of coal using ADT trucks.

Proposed South Pit discard dump

- Levelling and base preparation in the area where the facility will be located, this may be done using bulldozers and front-end loaders;
- Placement of coarse discard material for the facility embankments; and
- Constructing and operating a storm water control system comprising of diversion berms and collection and conveyance channels to the existing dirty water systems.

3.0 POLICY AND LEGISLATIVE CONTEXT

The following section provides a brief overview of the policy and legislative context within which this environmental scoping process was undertaken. The policy and legislative context include the following key legislation:

- National Environmental Management Act, 1998 (Act 107 of 1998);
- National Environmental Management: Waste Act, 2008 (Act 59 of 2004);
- National Water Act, 1998 (Act 36 of 1998); and
- National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004).

3.1 National Environmental Management Act

In terms of the National Environmental Management Act, Act 107 of 1998 (NEMA), as amended (RSA, 1998a) and the EIA Regulations of 2014 (RSA, 2014e), an application for EA for certain listed activities must be submitted to the provincial environmental authority or the national authority, the Department of Environmental Affairs, depending on the types of activities.

The current EIA Regulations of 2014 (RSA, 2014e), Listing Notice 1 of 2014 (RSA, 2014d), Listing Notice 2 of 2014 (RSA, 2014c), and Listing Notice 3 of 2014 (RSA, 2014b), promulgated in terms of Sections 24(5), 24M and 44 of the NEMA, and subsequent amendments, commenced on 04 December 2014 (RSA, 1998a).

Listing Notice 1 (RSA, 2014d) and Listing Notice 3 (RSA, 2014b) lists those activities for which a Basic Assessment process is required while Listing Notice 2 (RSA, 2014c) lists the activities requiring a full scoping and EIA process. The EIA Regulations of 2014 (RSA, 2014e) define the processes that must be undertaken to apply for EA.

The activities associated with the proposed project requiring an EA in terms of the NEMA are included in Table 4.

3.2 National Water Act

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) is the primary legislation regulating both the use of water and the pollution of water resources. It is applied and enforced by the Department of Human Settlements, Water and Sanitation and (DHSWS).

Section 19 of the National Water Act regulates pollution, which is defined as “the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it:

- Less fit for any beneficial purpose for which it may reasonably be expected to be used; or
- Harmful or potentially harmful to –
  - the welfare, health or safety of human beings;
  - any aquatic or non-aquatic organisms;
  - the resource quality; or
  - property.”

The persons held responsible for taking measures to prevent pollution from occurring, recurring or continuing include persons who own, control, occupy or use the land. This obligation or duty of care is initiated where there is any activity or process performed on the land (either presently or in the past) or any other situation which could lead or has led to the pollution of water.

The following measures are prescribed in Section 19(2) of the NWA to prevent pollution:

- Cease, modify or control any act or process causing the pollution;
- Comply with any prescribed standard or management practice;
- Contain or prevent the movement of pollutants;
- Eliminate any source of pollution;
- Remedy the effects of pollution; and
- Remedy the effects of any disturbance to the bed or banks of a watercourse.

The NWA states in Section 22 (1) that a person may only use water:

- Without a licence –
  - if that water use is permissible under Schedule 1;
  - if that water use is permissible as a continuation of an existing lawful use; or
  - if that water use is permissible in terms of a general authorisation issued under Section 39;
- If the water use is authorised by a licence under this Act; or
- If the responsible authority has dispensed with a licence requirement under subsection (3).

Chapter 4 of the NWA stipulates that a water use licence is required for certain water uses, which are listed in Section 21. Those that are most likely to apply to the proposed project are the following:

> "Impeding or diverting the flow of water in a watercourse;
>
> (g) Disposing of waste in a manner which may detrimentally impact on a water resource; and
>
> (i) Altering the bed, banks, course or characteristics of a watercourse."

Water use licence application

The water uses that will be applied for, as part of the proposed Venture Co-disposal Facility, and the establishment of the South Pit Discard Dump are listed in Table 5 below.

Table 5: Water uses to be licensed

Water Use	Description
1. Section 21(g): Disposing of waste in a manner which may detrimentally impact on a water resource	■ Extension of the Venture Discard Dump (proposed Venture Co-disposal Facility)
2. Section 21(g): Disposing of waste in a manner which may detrimentally impact on a water resource	■ Establishment of the South Pit Discard Dump
3. Section 21(g): Disposing of waste in a manner which may detrimentally impact on a water resource	■ Establishment of a new RWD to replace the existing PCD
4. Section 21(c): Impeding or diverting the flow of water in a watercourse; Section 21(i): Altering the bed, banks, course or characteristics of a watercourse	■ Construction of pipelines within 500m of a wetland area; and ■ Extension of culverts along the expanded haul road between the ATC discard dumps and ATC Plant.

3.3 National Environmental Management: Waste Act

The National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEMWA) was implemented on 1 July 2009 and Section 20 of the Environment Conservation Act 73 of 1989, under which waste management was previously governed, was repealed. One of the main objectives of the NEMWA is to reform the law regulating waste management to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development and provide for:

- National norms and standards for regulating the management of waste by all spheres of government;

- Specific waste management measures;
- The licensing and control of waste management activities;
- The remediation of contaminated land; to provide for the national waste information system; and
- Compliance and enforcement.

In terms of the NEMWA, certain waste management activities must be licensed, and in terms of Section 44 of the Act, the licensing procedure must be integrated with an EIA process in accordance with the EIA Regulations promulgated in terms of the NEMA.

Government Notice 921, published in the Government Gazette No. 37083 on 29 November 2013, lists the waste management activities that require licensing. A distinction is made between Category A waste management activities, which require a Basic Assessment, Category B activities, which require a full EIA (scoping followed by impact assessment) and Category C activities that require compliance with relevant requirements or standards determined by the Minister.

The proposed Venture Co-disposal Facility and South Pit Discard Dump may trigger the waste management activities listed in Table 6, which require an application for a WML supported by an EIA process, undertaken in accordance with the EIA Regulations GN R.326 of 4 December 2014, as amended.

Table 6: Listed Waste Management Activities associated with the proposed Venture Co-disposal Facility and South Pit Discard Dump in terms GN R 921 as amended by GN R 633

GNR 921 as Amended by GN R 633	Activity Description
Category A 3(13)	The expansion of a waste management activity listed in Category A or B of this schedule which does not trigger an additional waste management activity in terms of this schedule.
Category B 4(1)	The storage of hazardous waste in lagoons excluding storage of effluent, wastewater or sewage.
Category B 4(10)	The construction of a facility for a waste management facility activity listed in Category B of GN R 921 (as amended) (not in isolation to associated waste management activity).
Category B 4(11)	The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right, exploration right or production right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

3.4 National Environmental Management: Air Quality Act

The main objectives of the National Environmental Management: Air Quality Act, Act No. 39 of 2004 (NEMAQA) are to protect the environment by providing reasonable legislative and other measures to:

- Prevent air pollution and ecological degradation;
- Promote conservation; and

- Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development in alignment with Sections 24a and 24b of the Constitution of the Republic of South Africa.

The NEMAQA has devolved the responsibility for air quality management from the national sphere of government to local spheres of government (district and local municipal authorities), who are tasked with baseline characterisation, management and operation of ambient monitoring networks, licensing of listed activities, and development of emissions reduction strategies.

The NEMAQA makes provision for the setting and formulation of national ambient air quality and emission standards. If the need arises, these standards can be set more stringently on a provincial and local level.

The proposed project will not require an atmospheric emission licence in terms of Listed Activities and Associated Minimum Emission Standards Identified in terms of Section 21 of the National Environmental Management: Air Quality Act 39 of 2004 (RSA, 2013a).

3.5 Other applicable legislation

- National Heritage Resources Act, Act 25 of 1999;
- Conservation of Agricultural Resources Act, Act 43 of 1983;
- National Environmental Management: Biodiversity Act, Act 10 of 2004; and
- Environment Conservation Act, Act 73 of 1989.

3.6 Need and desirability of the proposed activities

Internationally, coal is the most widely used primary fuel. It is estimated that about 36 percent of the total fuel consumption for the world's electricity production is from coal (Department of Energy , 2018). In South Africa, about 77 percent of the country's primary energy needs are provided by coal.

In addition to supplying the local economy, approximately 28 percent of South Africa's production is exported. The coal is exported mainly through the Richards Bay Coal Terminal, making South Africa the fourth-largest coal exporting country in the world (Department of Energy , 2018).

At least five large Eskom power stations will still be in operation after 2040. Coal is expected to be the second largest source of primary energy and the largest source for electricity generation in the next 30 years, during which time Eskom will need about four billion tonnes of coal. Coal exports are also important to the South African economy, particularly at this time of a precarious current account deficit. Coal is South Africa's third largest source of foreign exchange, platinum being the largest and gold second (Hall, I; 2014).

The proposed expansion of the discard facilities will allow iMpunzi to continue with the current mining activities onsite and continue with employment and income generation opportunities in the area. The developments associated with the larger project will further facilitate the development of BEE opportunities during the lifespan of the facilities and the iMpunzi operation itself.

3.7 Period for which an environmental authorisation is required

The planned LoM, based on proven coal reserves and market related requirements, is estimated at 16 years. To accommodate the expansion activities, production/operation, mine closure and site rehabilitation, the authorisation is required for a period of 21 years.

3.8 Process followed to identify preferred sites

3.8.1 Project alternatives

Alternative sites for the proposed facilities were briefly considered within the mining right area as well as the area surrounding the mine. These sites were all located on either rehabilitated mined area, as the case within the mining area, or agricultural areas mostly undisturbed by mining activities. The option to locate the discard dump on previously mined out spoils was found to be preferable as it will avoid additional water and soil pollution on unmined or rehabilitated areas.

Furthermore, economically the location must be as close as possible to the two existing coal processing plants to reduce costs associated with the transportation of discard to these facilities, and maximise the use of existing infrastructure such as haul roads, storm water conveyance infrastructure, etc.

3.8.2 No project option

The current planned LoM for the authorised mining activities at the iMpunzi Mining Complex is 2035.

The no project option for this project is not to expand or extend any of the proposed facilities. The option of not going ahead with this project will leave the iMpunzi mine with discard capacity/storage constraints, which would ultimately affect production.

If mining operations at iMpunzi are forced to stop prematurely due to waste facilities exceeding their capacity to store discard waste from the mine, the coal reserves will be left unmined and the economic benefits to Glencore and its employees, as well as the associated socio-economic benefits to the local communities and businesses, and South Africa as a whole would not materialise.

3.9 Summary of public participation process followed

This section provides an overview of the public participation process undertaken during the scoping phase of the EIA.

3.9.1 Objectives of public participation

The public participation process is designed to provide information to and receive feedback from interested and affected parties (I&AP) throughout the EIA process, thus providing organisations and individuals and other stakeholders with an opportunity to raise concerns and provide comments and suggestions regarding the proposed project. By being part of the assessment process, stakeholders will have the opportunity to influence the Plan of Study of the EIA.

Opportunities for Comment

Documents are made available at various stages during the EIA process to provide stakeholders with information, further opportunities to identify issues of concern and suggestions for enhanced benefits and to verify that the issues raised have been considered.

The principles that determine communication with society at large are included in the principles of the NEMA (Act 107 of 1998, as amended) and are elaborated upon in General Notice 657, titled “Guideline 4: Public Participation” (Department of Environmental Affairs and Tourism, 19 May, 2006), which states that: “Public participation process means a process in which potential I&APs are given an opportunity to comment on, or raise issues relevant to, specific matters.”

Public participation is an essential and regulatory requirement for an EA process and was undertaken in terms of Regulations 39 to 44 of the EIA Regulations GN R.982 (8 December 2014). Public participation is a process that is intended to lead to a joint effort by stakeholders, technical specialists, the authorities and the proponent/developer who work together to produce better decisions than if they had acted independently.

The public participation process is designed to provide sufficient and accessible information to I&APs in an objective manner and:

During the scoping phase to enable them to:

- Understand the context of the EIA;
- Become informed and educated about the proposed project and its potential impacts;
- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their comments, issues of concern and suggestions have been recorded;
- Assist in identifying reasonable alternatives; and
- Contribute relevant local information and traditional knowledge to the environmental assessment.

During the impact assessment phase to assist them to:

- Contribute relevant information and local and traditional knowledge to the environmental assessment;
- Verify that their issues and suggestions have been evaluated and considered in the environmental investigations and feedback has been provided;
- Comment on the findings of the EIA; and
- Identify further issues of concern from the findings of the EIA.

During the decision-making phase:

- To advise I&APs of the outcome, i.e. the authority decision, and how the decision can be appealed.

Figure 7 below, provides an overview of the typical flow of a public participation process and how it integrates with the technical environmental assessment process.

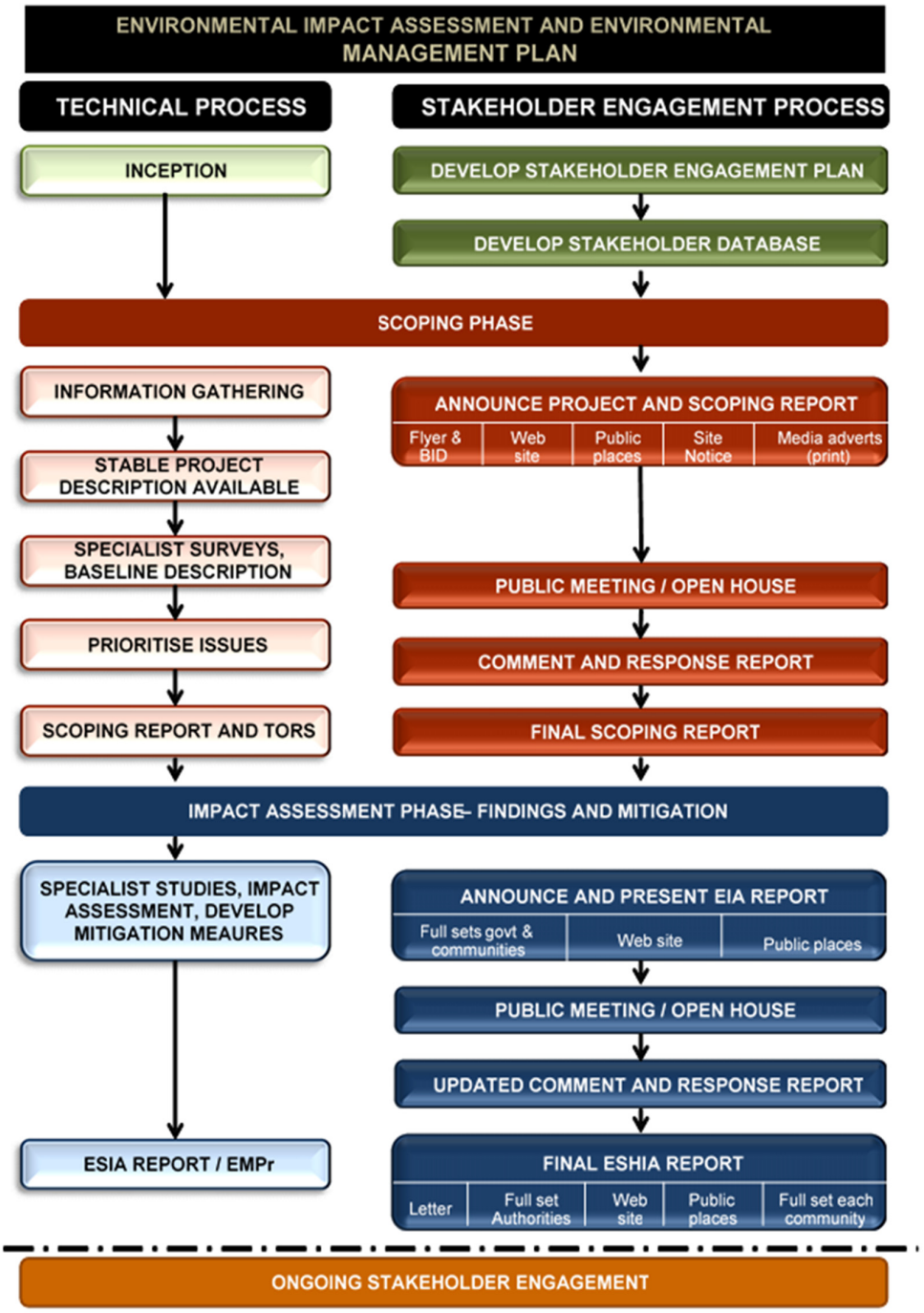


Figure 7: The flow diagram shows the typical structure of the EIA process

3.9.2 Pre-scoping phase capacity building

As mentioned above, iMpunzi is an existing operation which has been in operation for many years. Apart from the fact that landowners and residents in the area have been exposed to mining developments in the area for years, GOS'a Community Liaison Officers have been in regular contact with adjacent landowners and affected communities. During these meetings, GOSA explained the mining processes and associated impacts, and provided progress feedback.

3.9.2.1 Identification of I&APs

I&APs were initially identified through a process of networking and referral, obtaining information from iMpunzi's existing stakeholder database, liaison with potentially affected parties near the project area, newspaper advertisements and a registration process requiring I&APs to complete and submit a registration and comment sheet.

3.9.2.2 Registration of I&APs

The NEMA Regulations distinguish between I&APs and *registered* I&APs.

I&APs, as contemplated in Section 24(4) (d) of the NEMA include: "*(a) any person, group of persons or organisation interested in or affected by an activity; and (b) any organ of state that may have jurisdiction over any aspect of the activity".*

In terms of the Regulations:

"An EAP managing an application must open and maintain a register which contains the names, contact details and addresses of:

(a) All persons who; have submitted written comments or attended meetings with the applicant or EAP;
(b) All persons who; have requested the applicant or EAP managing the application, in writing, for their names to be placed on the register; and
(c) All organs of state which have jurisdiction in respect of the activity to which the application relates."

As per the EIA Regulations, future consultation during the impact assessment phase will take place with **registered I&APs**. The I&AP register will be updated throughout the EIA process.

3.9.3 Public participation during scoping

This section provides a summary of the public participation process followed during the scoping phase of the EIA.

3.9.3.1 Announcement of the project

The Draft Scoping Report was announced on **Friday 8 November 2019.** Stakeholders were invited to participate in the EIA process and associated public participation process and to pass on the information to friends, colleagues, and neighbours who might be interested, and to register as an interested and affected parties(I&APs)

The proposed project was announced as follows:

- Distribution of an announcement letter, locality map and registration and comment sheet to all identified I&APs with email and postal addresses. A bulk SMS was sent to identified I&APs with mobile phone numbers. The announcement documents provided information about the EIA process, how I&APs could register and how to access the draft scoping report. Copies of the announcement documents as well as evidence of postal delivery and bulk SMSs are attached as APPENDIX D
- The abovementioned documents were made available at the public places shown in Table 7 and posted to the Golder website: https://www.golder.com/global-locations/africa/south-africa-public-documents/
- A mandatory advertisement was published in the local newspaper, the Middelburg Observer, on Friday 8 November 2019 (see newspaper tear sheet attached as APPENDIX D**)**; and
- Site notices were placed along the access road to the Glencore (iMpunzi South pit) operations. Photographic evidence and a map showing the locations of the site notices are attached as APPENDIX E.

Table 7: List of public places where the Draft scoping report was displayed

Name of Public Place	Contact Person	Contact Number
Ogies Public Library	Librarian	013 643 1027
Emalahleni Public Library	Ms Maria Rozmiarek	013 690 6232
Ogies Clinic	Sister Choko Motau	013 643 2037
Golder Associates website	Mabel Qinisile/Ursula Papé	(011) 254 4800

3.9.3.2 Draft scoping report

The draft scoping report was made available for public review for a period of 30 days from **Friday 8 November to Monday 9 December 2019.**

The DSR was updated and included all comments received from I&APs. The Final Scoping Report (this report) will be submitted to the Mpumalanga Department of Minerals Resources and Energy (DMRE) for approval.

3.9.3.3 Summary of issues raised by I&APs

The comments received, and issues raised during the 30-day comment period, both in writing and telephonically, are captured in a Comment and Response Report, which will be updated throughout the EIA process. The Comment and Response Report is appended to the final scoping report as APPENDIX G.

3.9.4 Public participation during the impact assessment phase

Public participation during the impact assessment phase of the EIA will entail a public review of the findings of the EIA, as presented in the EIA Report and Environmental Management Programme Report (EMPr), and the specialist studies.

3.9.4.1 Notification of interested and affected parties

All registered I&APs will be advised timeously and by e-mail, fax or telephone call of the availability of these reports, which they could either download from Golder's public website or request from Golder's Public Participation Office. They will be encouraged to comment either in writing (mail or e-mail) or by telephone. Ample notification of due dates will be provided.

3.9.4.2 Engagement process to be followed

A draft EIA report and EMPr will be compiled after completion of all the specialist studies. These reports will be made available for public comment for 30 days, during which the findings of the studies will be discussed with I&APS and provide them with an opportunity to engage with representatives of Glencore and the EIA team.

All the issues, comments and suggestions raised during the comment period on the draft EIA report/EMPr will be added to the comments and response report (CRR) that will accompany the Final EIA report/EMPr. The Final EIA Report/EMPr will be submitted to the DMRE, and the DHSWS.

On submission of the Final EIA Report/EMPr to the authorities, a personalised letter will be sent to every registered I&AP to inform them of the submission and the opportunity to request copies of the final reports.

3.9.4.3 Information to be provided to I&APs

In addition to all the information provided in this scoping report, specifically the layout plan shown in Figure 5 and Figure 6, the project description provided in sections 2.4 the description of the baseline environment

provided in section 4.0, the potential impacts identified in section 6.3 and the potential mitigation measures discussed in section 6.4, the results of the specialist assessments and their recommended mitigation measures will be provided to I&APs during the impact assessment phase.

3.9.5 Competent Authority's Decision

Once the Mpumalanga DMRE has taken a decision about the proposed project, the Public Participation Office will immediately notify I&APs of this decision and of the opportunity to appeal. This notification will be provided as follows:

- A letter will be sent, personally addressed to all registered I&APs, summarising the authority's decision and explaining how to lodge an appeal should they wish to; and
- A mandatory advertisement will be published in the local newspaper the Middleburg Observer newspaper.

4.0 ENVIRONMENTAL ATTRIBUTES AND DESCRIPTION OF THE BASELINE RECEIVING ENVIRONMENT

This section of the report provides a description of the receiving environment and existing conditions on and in the vicinity of the proposed discard facilities. Information elaborated upon in this section was partially sourced from the Consolidated Tavistock EIA and EMPR amendment, XST 1364, dated April 2014, (Digby Wells, 2014), the Integrated Water and Waste Management Plan for iMpunzi Colliery, and various specialist studies referenced in the text.

4.1.1 Geology

The regional geology in the study area is underlain by sediments of the Karoo Supergroup. The Karoo Supergroup comprise of the older Dwyka Formation at the base, which is overlain by the Ecca, Beaufort and Lebombo Groups. The local geology in the study area comprises shale, carbonaceous shale, sandstone, and coal layers of the Ecca Group. The Vryheid Formation of the Ecca Subgroup is about 55 m thick and consists of shale and sandstone interbedded with five major coal seams, numbered 1 to 5 from the base, of varying thickness (1.5m - 9.0 m) (refer to Figure 8). The surface geology of the study area is presented in Figure 9.The iMpunzi Complex mines coal in the central-southern part of the Witbank Coalfield from the No. 2 and No. 4 Coal Seams (Golder Associates, 2019b). A simplified geological stratigraphy for the iMpunzi area is presented in Table 8 the underlying geology has an apparent dip angle of 20° towards the south.

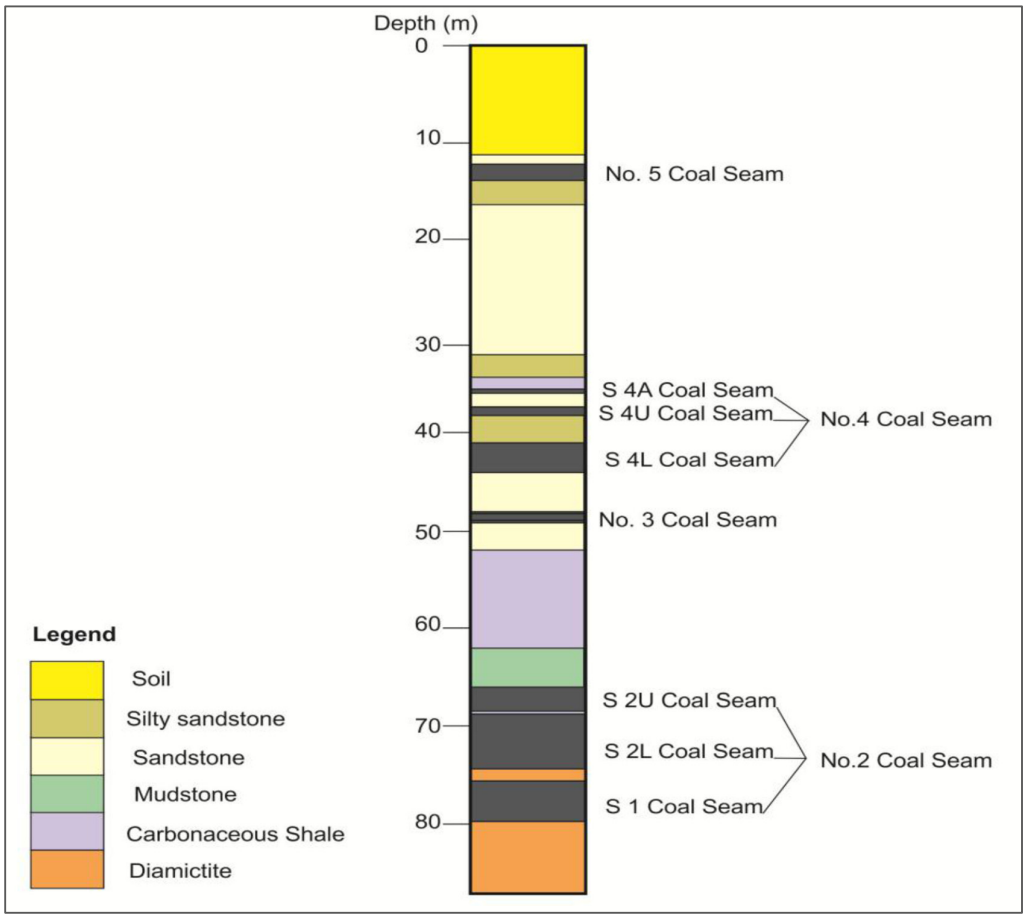


Figure 8: Cross section of the Geological Sequence in the iMpunzi area (Golder Associates, 2016b)

Table 8: Simplified Stratigraphy (Golder, 2015)

Period	Supergroup	Group	Formation	Lithology
Quaternary	-	-	-	Alluvium
	-	-	-	Aeolian sand
Jurassic	-	-	-	Dolerite
Permian	Karoo	Ecca	Volkrust	Shale, subordinate sandstone
Carboniferous			Vryheid	Sandstone, Shale, Coal beds
		-	Dwyka	Diamictite, shale

4.1.2 Topography

The iMpunzi area has a gently undulating topography, characteristic of the underlying rocks of the Karoo sequence. Most of the area has a natural slope of less than 8 % and topographic elevations generally ranging from 1520 to 1620 metres above mean sea level (mamsl). It is important to note, however, that the topography

of the larger iMpunzi area has been significantly altered through past mining activities. Opencast voids, pits, stockpiles, discard facilities and infrastructure complexes have changed the natural topography.

4.1.3 Air quality

Air pollution in the region arises from the numerous mining operations, farming activities and coal-fired power stations in the area. Sources of dust pollution at the mines include dust entrainment from haul roads, blasting in opencast sections, discard dumps and soil stockpiles.

iMpunzi has a comprehensive dust fall monitoring network. Dust fall monitoring takes place on a monthly basis as part of the iMpunzi air quality monitoring programme. The locations of air quality monitoring points are illustrated below in Figure 10.

Based upon the findings of the most recent monitoring period, the National Dust Control Regulation standards for residential and industrial areas were exceeded at ATAP-1 and ACAP-1 monitoring point during consecutive months in 2019. Exceedances of the daily and annual average National Ambient Air Quality Standards for PM_{10} and $PM_{2.5}$ concentrations were also recorded at iMpunzi.

4.1.4 Noise

Mining activities in an around iMpunzi all contribute to noise levels. A limited amount of noise pollution from the mining activities arises from opencast blasting, movements of haul trucks, conveyors, ventilation fans and beneficiation plants. The noise impacts are specific to the various sites throughout the property and do not cause significant public nuisance. Several noise monitoring points have been put in place on site, see Figure 11 below.

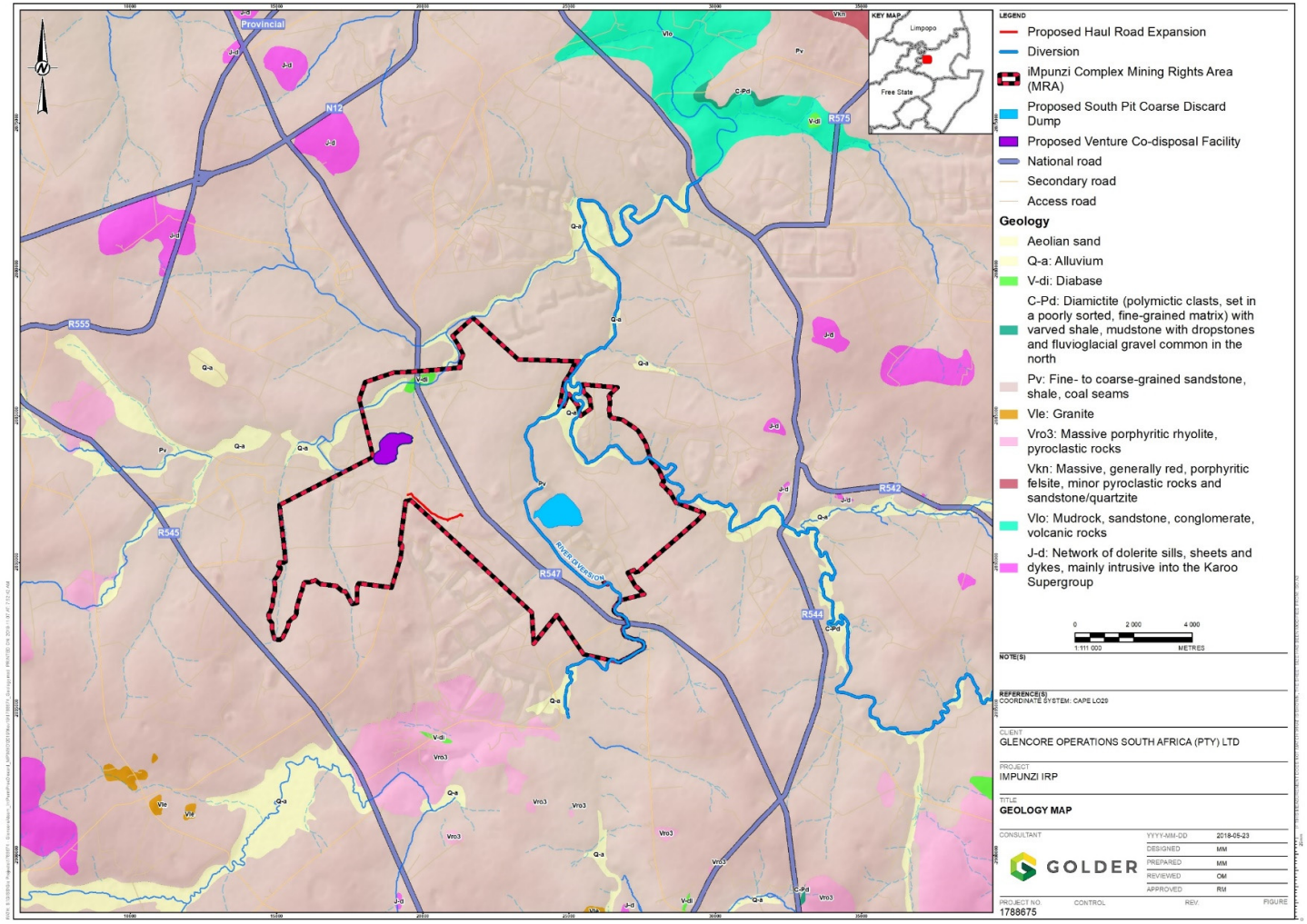


Figure 9: Geology of the study area

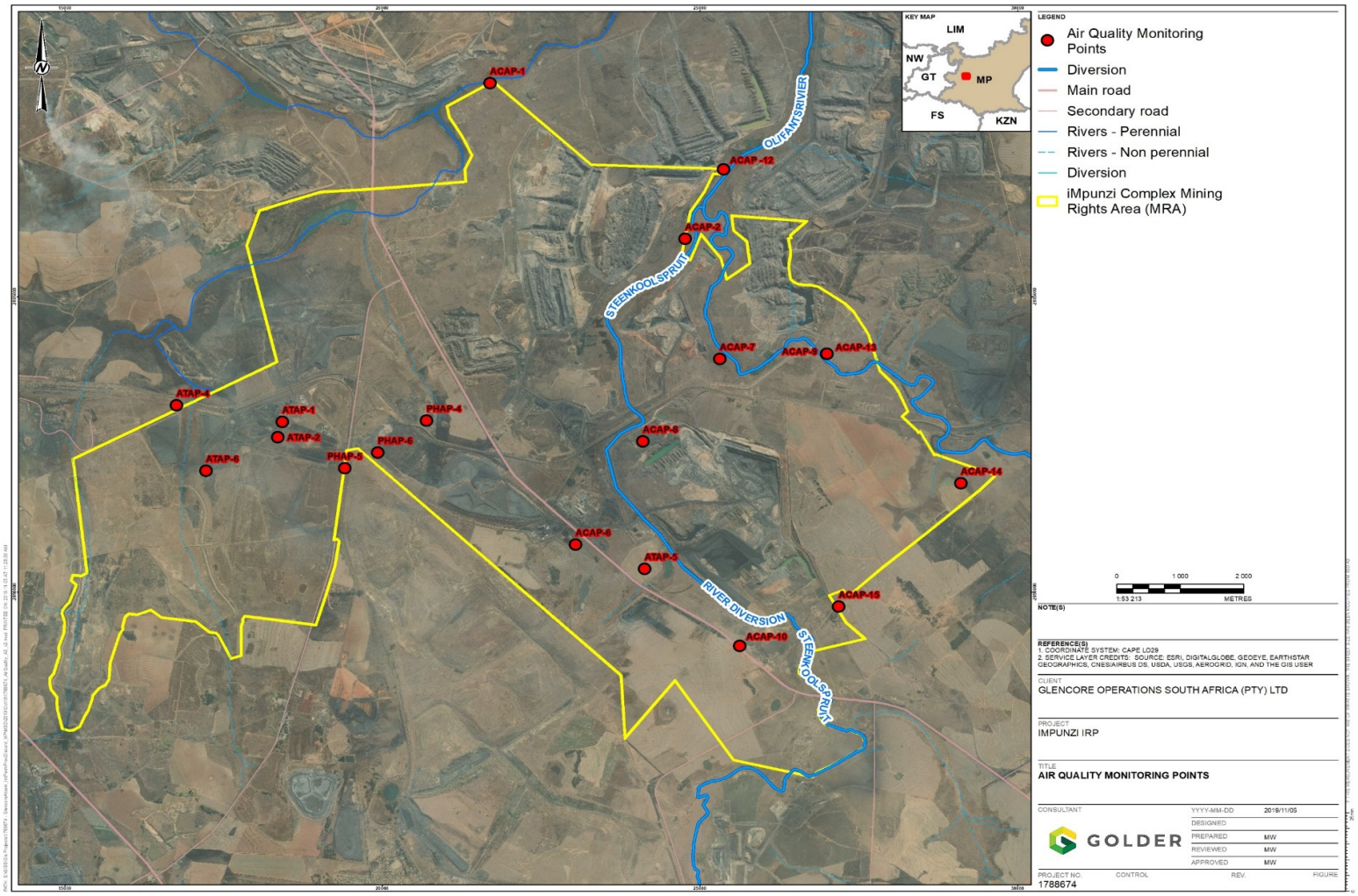


Figure 10: Air Quality Monitoring points at iMpunzi

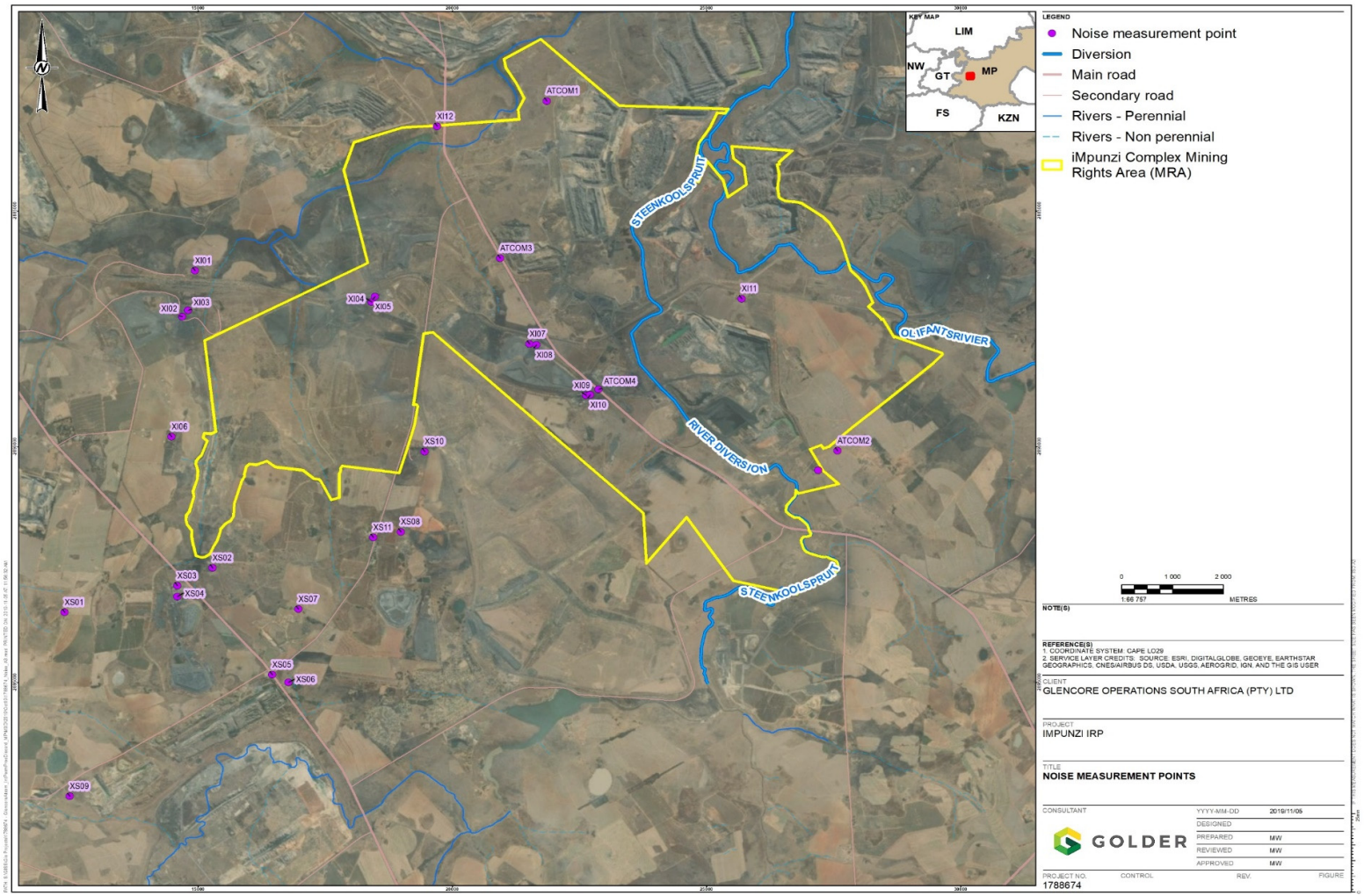


Figure 11: Noise Monitoring points in the iMpunzi area

4.1.5 Climate

The overall climate condition of the study area is that of the Highveld regions, characterised by warm and temperate conditions. Rainfall in the region occurs in summer seasons (November to January). Rainstorms are often violent with severe lighting and strong winds occasionally accompanied by hail. The winter months (June-August) are dry with little rain, making up less than 2.3% of the total annual precipitation (Digby Wells, 2014).

Temperatures are range from a maximum of 26.6 °C during the summer seasons and a minimum of 3.3 °C in the winter (Digby Wells, 2014). Annual potential evaporation has been recorded to be higher than the average rainfall in the past (Figure 12). Winds are usually light except during thunderstorms, are generally from the north-west, north or north-east.

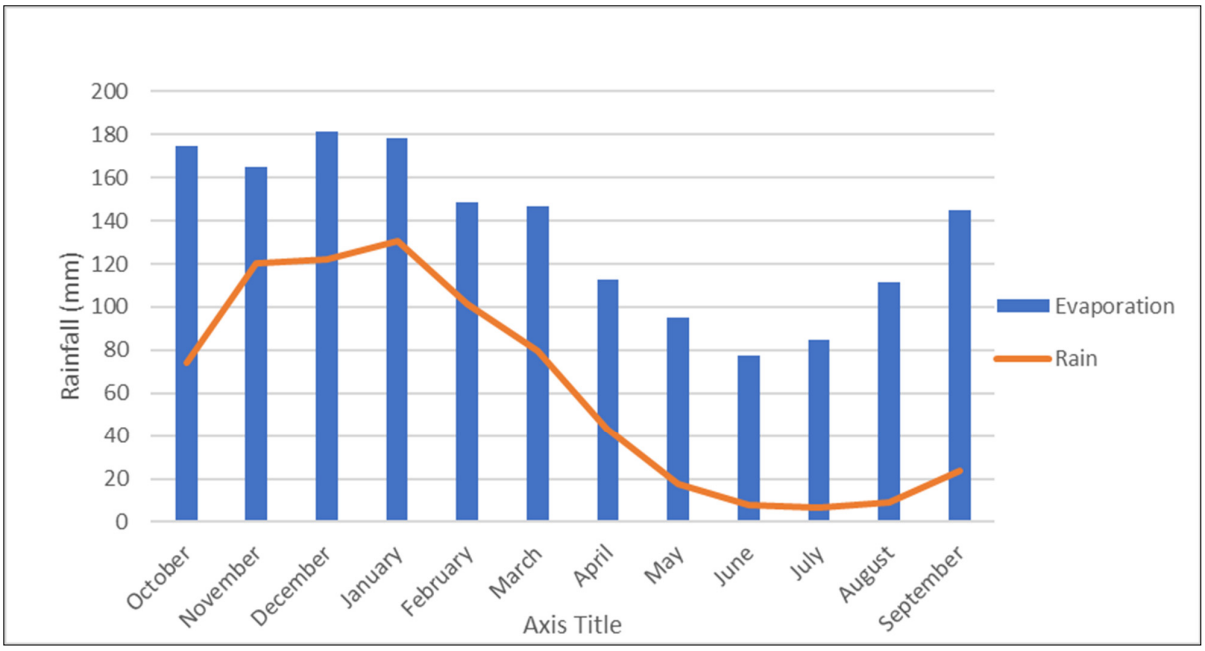


Figure 12: Historical evaporation data compared to historical rain data (1964 to 1979) for the Ogies area (Golder, 2018)

4.1.6 Visual

iMpunzi is not situated on any main tourist routes and most of the traffic on surrounding roads is of local origin and is associated with local businesses. Mine infrastructure, such as the conveyor belts, loading bins and discard dumps, are visible from the main roads. However, these do not represent an anomalous view, since the whole region is dotted with coal mines and power stations and mining is a long-standing activity in the region. Dust is visible during windy and dry conditions. The visual impact is thus limited to road users and associated routes. The mine is not visible from any major freeways or towns.

4.1.7 Soils and land capability

The soils in the larger iMpunzi area are characteristic of a typical Highveld catena with a complexity of soil forms occupying different topographical localities. The soil types in the study area can be grouped into three categories, according to their topographical locations in the landscape. This grouping includes soils of the upland regions, middle slopes and soils of drainage lines and seepage areas. Two non-soil related units, based on disturbances are also identified, namely disturbed area (Dst) and excavated trenches (Exp).

Deep, free draining red soils of the Hutton and Bainsvlei Forms occur in the upland regions overlying dolerite dykes. Where the parent material consists of quartzitic sandstone, yellow brown apedal soils of the Avalon,

Clovelly and Glencoe Forms are found. Soils of the Mispah Form occur where a shallow orthic A-horizon overlies hard rock.

Areas with high potential agricultural soils include areas with deep, well drained, yellow brown (Clovelly) soils that occur on the midslope and upper midslope positions and deeper hydromorphic soil forms. The areas that can be classified as grazing land are generally confined to the shallower, transitional zone, hydromorphic soil forms (Digby Wells, 2014). The major land use in the iMpunzi area is mining and its associated activities. Other minor land uses include agriculture, particularly maize production, fallow land recently utilised for agriculture and grazing, as well as vacant land.

4.1.8 Ecology

Significant ecological work has been done in the larger iMpunzi area and has collectively lead to a comprehensive understanding of the flora and fauna species that occur in the area. The section below outlines the ecological characteristics of the study area; however, it is important to note that the footprints associated with the proposed discard facilities, RWD and haul road extension are already disturbed, and hence are considered brownfields sites.

4.1.8.1 Flora and fauna

According to the Vegetation Map of South Africa, Lesotho and Swaziland (Mucina and Rutherford, 2006), the study area falls within the Grassland Biome and the Mesic Highveld Grassland Bioregion. The dominant vegetation type found on site is Eastern Highveld Grassland. The Eastern Highveld Grassland vegetation is considered vulnerable under the National List of Ecosystems that are Threatened and in Need of Protection (Wetland Consulting Services (Pty) Ltd, August 2019).

Historically the entire region has been subject to intensive farming, and as a consequence a large proportion of the area was under maize prior to mining. The remaining viable habitat at the larger iMpunzi is mostly fragmented, with anthropogenic activities (mining, buildings, roads, agricultural fields, train tracks and fences) isolating areas of viable habitat. The relative abundance of mammals observed on site during the various studies conducted is less than may be expected in grassland areas of similar size.

The limited remaining habitat around the pans and drainage lines, the isolation of pans from other natural grasslands by agricultural fields, the lack of refuges, the proximity of human dwellings and human activities are among the reasons for scarcity and influences what species will still occur in the area. It is probable that other rodent species also occur at many of the sites, but this could only be determined by trapping. Larger mammals appear.

Bird species that were observed in the greater iMpunzi area include three near threatened bird species, the Melodious Lark (*Mirafra cheniana*), the Grass Owl (*Tyto capensis*) and the Blue Korhaan (*Eupodotis caerulescens*). One vulnerable species, the Greater Flamingo (*Phoenicopterus ruber*) was also sighted. These birds were observed in the limited remaining natural habitats around pans and drainage lines (Digby Wells, 2014).

4.1.8.2 Key conclusions

The entire iMpunzi Complex and surrounding area are comprised mainly of highly impacted landscapes, either through mining, agricultural and other anthropogenic activities. The movement of wildlife is certainly impacted by these activities, influencing the habitat connectivity for free range species. It is important to note that the proposed new developments at iMpunzi are relatively small compared to the extent of the rest of the operation and also the regional extent of the mining operations in the vicinity.

4.1.9 Wetlands

The proposed footprint of the South Pit Discard Dump is characterised by a backfilled opencast pit of which the western end nearest to the Steenkoolspruit has been rehabilitated and revegetated. No wetlands were found to occur within the direct footprint of the proposed South Pit study area.

The existing Venture Discard Dump, as well as the footprint of the proposed expansion, will be located on rehabilitated mining land, with mining of the area having been completed before 2003. No natural wetland habitat was found to occur within the proposed Venture expansion footprint.

However, several wetland features, labelled “Rehab wet areas” in Figure 13 below, were found to occur within the expansion footprint, while a number of natural wetland systems occur within the 500m buffer around the proposed expansion footprint. The “Rehab wet areas” can be considered man-made or artificial wetlands in the sense that they have reformed on rehabilitated mining land (Wetland Consulting Services (Pty) Ltd, August 2019). “Rehab wet areas” have formed as a result of water accumulation in lower lying areas, typically shallow depressions that are linked via trenches to spill towards the seep wetland to the north. The largest of these “Rehab wet areas” also receives overflow from the existing Venture Dump PCD, while the southernmost of the “Rehab wet areas” appears to have historically also received flow discharges of an unknown source, but evidenced on site by a series of small, low dams to control flow. The main flow driver of these “Rehab wet areas” is considered to be direct rainfall and surface runoff from upslope areas accumulating in these low points. No interflow is expected to occur on the rehabilitated mining areas.

A large seep wetland occurs to the west and north of the Venture Discard Dump. This seep wetland drains into the Tweefonteinspruit. The wetland is comprised of a mosaic of seasonal to temporary wet areas dominated by grass and sedge species and extends up to the edge of historical mining disturbance. To the north-west of the Venture Dump, mining disturbance extends far into the seep wetland in the form of a large rectangular berm that encloses an artificial wetland area dominated by *Phragmites australis*. And as a result, the seep wetland present ecological status (PES) is ranked as Category D, largely modified (Wetland Consulting Services (Pty) Ltd, August 2019).

To the east of the Venture Discard Dump, an Unchannelled Valley Bottom wetland flows from south to north; this system is known as the Gilfillan Stream. A part of this wetland has been mined through in the past, and a stream diversion is in place just upstream of the Venture Dump study area. Downstream towards the confluence with the Tweefonteinspruit some channel incision has occurred within the wetland. The Unchannelled Valley Bottom wetland’s PES was also largely modified (Wetland Consulting Services (Pty) Ltd, August 2019).

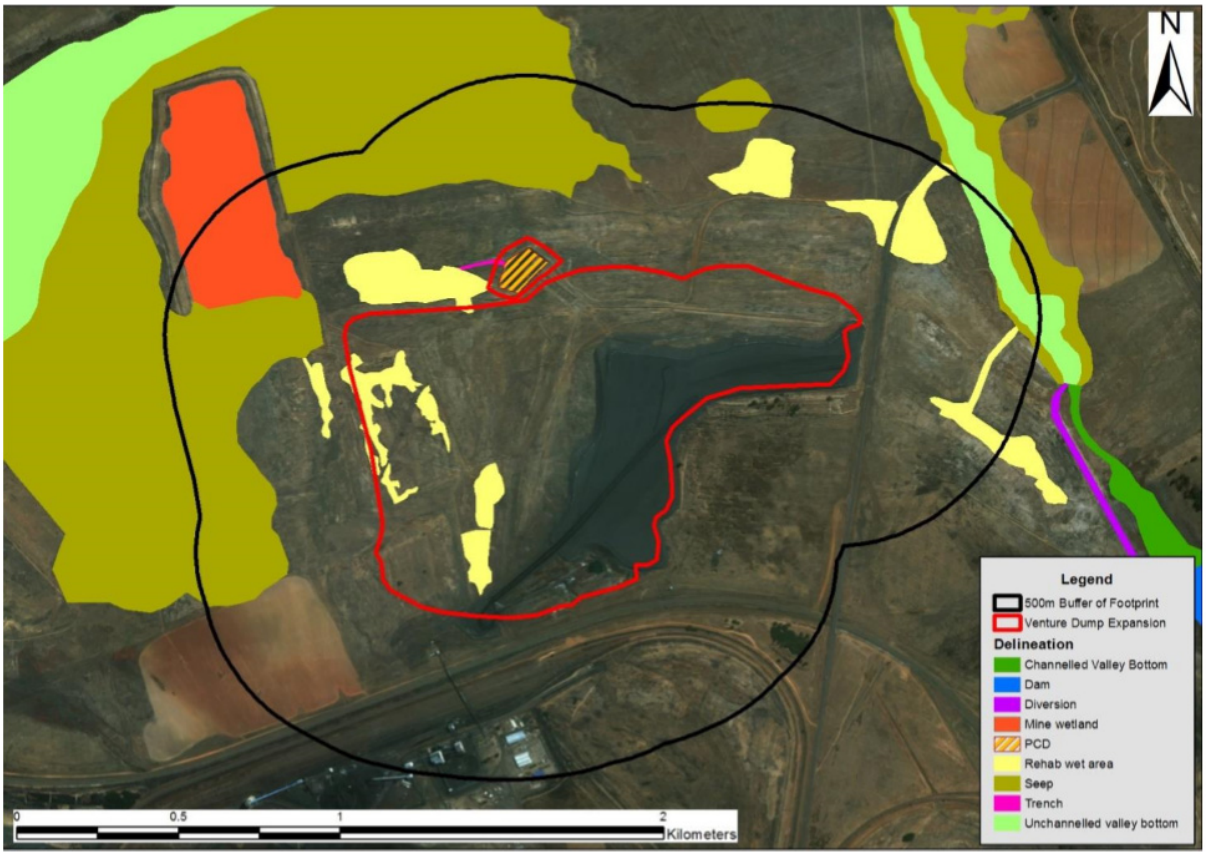


Figure 13: Map of delineated wetland habitat within and adjacent to the proposed Venture Co-disposal Facility footprint (Wetland Consulting Services (Pty) Ltd, August 2019)

4.1.10 Surface water

The study area falls within the Olifants WMA. The quaternary catchments associated with the proposed discard facilities are B11B, B11E and B11F, as seen in Figure 14. The watercourses following closely to the proposed South Pit Discard Dump is the Steenkoolspruit which was historically diverted to allow access to coal reserves at the current South Pit area (Golder, 2016). The Steenkoolspruit predominantly flow in a North-North-Western direction and eventually into the Witbank dam, which supplies municipal and industrial water to eMalahleni and Middelburg.

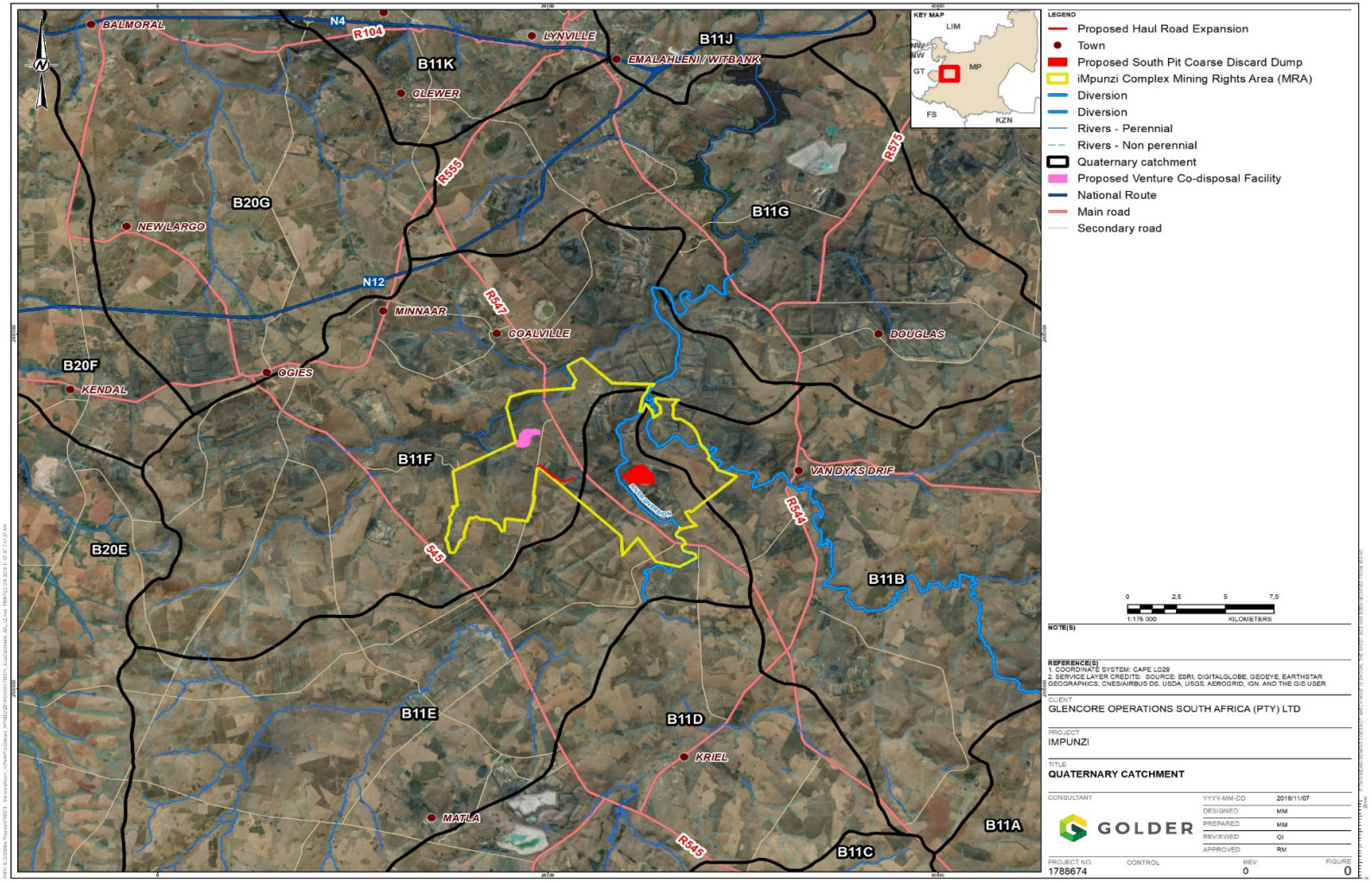


Figure 14: iMpunzi operation in relation to the local quaternary catchments

4.1.10.1 Surface water quality

The current water quality status for the larger iMpunzi operation is based upon the analysis of the latest surface water monitoring data (Table 9), which is collected on a monthly basis. Five (5) surface water monitoring points were selected for monitoring surface water quality, as seen in Figure 16. These monitoring points were:

- PHSR-3 (a controlled release and DHSWS monitoring point – B1H021);
- ACSR-3 - Olifants River, before the confluence with Steenkoolspruit;
- ACSD-13 – At ATCOM plant;
- ACSR-2 - Olifants River Pump Station after the Olifants-Steenkoolspruit confluence; and
- ACSR-4 - Steenkoolspruit, downstream from ATCOM and 250 m upstream of the proposed discharge point.

Table 9 below, reflects the current (September 2019) water quality status of the surface water resources located close to the proposed facility, as indicated in Figure 16. The water quality results were presented against the South African Guidelines for Industrial Use, Volume 3 (DWAF, 1996).

Table 9: Surface water quality monitoring results (September 2019)

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
1	ACSD-13	2.02	4230	65496	10402	14	54052	5031	961	44208
2	ACSR-2	7.85	45.7	350	21.2	17.7	82.2	-0.009	-0.001	171
3	ACSR-3	8.87	142	1002	98.6	39.7	629	-0.009	-0.001	655
4	ACSR-4	8.08	44.6	278	19.9	19	84.1	-0.009	-0.001	162
5	PHSR-3	2.02	8.2	49.5	39.2	23.5	19.6	97.3	-0.009	-0.001

4.1.11 Groundwater

The study area is underlain by an aquifer zone comprising of intergranular and fractured aquifer zones. The average borehole yield in the study area is between 0.1 L/s and 0.5 L/s. The aquifer is considered to be unconfined to semi-unconfined. The formation associated with low primary permeability, storage and transmissivity. Secondary processes such as weathering and fracturing enhance the groundwater potential (Golder Associates, 2019b).

From the published Groundwater Resource map series – sheet 2 (DWAF 1995), the average recharge (MAR) for the study area is shown between 37 to 50 mm per annum (Figure 15).

Aquifer types and extent

According to Hodgson and Krantz (1998), the natural hydrogeological system within the Witbank coal field comprises of two distinct superimposed aquifers, namely, the upper weathered aquifer, and the fractured aquifer. The upper weathered aquifer comprises of in situ weathered material. The depth to weathering is

typically between 5 m and 12 m below the surface. Rainfall infiltrating into the weathered rock finds impermeable layers of sediments below the weathered zone. The impermeable layers of sediments are a low yielding aquifer and often not capable of continuous groundwater supply because of its insignificant generally limited thickness. This aquifer is recharged by rainfall and water movement within the aquifer is by porous flow.

The fractured Karoo aquifer is made up of siltstone, sandstone, shale and coal seams. The pores of this unit are generally well cemented and groundwater movement occurs through secondary structures such as faults, bedding plane and fractures. Not all secondary structures within the aquifer are water bearing. Dwyka tillites below the Ecca sediments have poor aquifer properties (Golder Associates, 2019b).

Figure 17 below lists the name and localities of the different groundwater sampling points, which forms part of the larger iMpunzi Complex's monitoring manual (Glencore, 2016). While Table 9 below, reflects the current (September 2019) quality status of the groundwater resources located within the iMpunzi area. The water quality results were presented against the South African Guidelines for Industrial Use, Volume 3 (DWAF, 1996).

Table 10: Groundwater monitoring results (September 2019)

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
1	ACGM-1 Bottom	5.82	325	3146	282	21	2185	-0.009	6.35	1870
2	ACGM-2 Bottom	-	-	-	-	-	-	-	--	
3	ACGM-3 Bottom	8.12	238	1860	165	15.7	1199	0.801	1.32	1325
4	ACGM-4 Bottom	8.05	390	3854	273	14.8	2478	0.049	1.62	2212
5	ACGM-5 Bottom	2.02	6.31	9.85	6.46	1.96	5.83	9.06	-0.009	0.008
6	ACGM-6 Bottom	-	-	-	-	-	-	-	-	-
7	AEGM-1 Bottom	7.63	30.8	166	8.77	16.3	62.3	-0.009	0.007	95
8	AEGM-2 Bottom	-	-	-	-	-	-	-	-	-
9	AEGM-3 Bottom	8.12	62.1	364	17.7	15.2	113	-0.009	-0.001	202
10	AEGM-4 Bottom	6.49	11.5	84	3.35	6.58	7.3	-0.009	0.007	28
11	AEGM-5 Bottom	7.07	261	2260	145	57.2	1235	0.056	1.12	1522
12	AEGM-6 Bottom	6.71	35.6	214	10.9	10.7	20.3	-0.009	-0.001	75
13	AEGM-7 Bottom	7.21	41.5	282	11.7	9.03	24.5	-0.009	0.001	104
14	ATGM-4 Bottom	7.13	368	3576	301	26.6	2585	-0.009	0.111	2413

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
15	ATGM-5 Bottom	7.69	61.4	432	41.9	6.47	311	-0.009	0.023	308
16	ATGM-6 Bottom	6.86	373	3758	339	25	2444	-0.009	0.14	2564
17	PHGM-3 Bottom	7.42	24.8	168	9.16	3.07	23.4	-0.009	-0.001	94
18	PHGM-4	7.18	15.6	92	5.18	3.01	3.63	0.292	0.153	64
19	BH07	-	-	-	-	-	-	-	-	-
20	BH09	-	-	-	-	-	-	-	-	-
21	BH12	-	-	-	-	-	-	-	-	-
22	BH13	-	-	-	-	-	-	-	-	-
23	BH14	-	-	-	-	-	-	-	-	-
24	ACGF-1	65.8	402	6.07	42	113	0.368	0.054	22	8.21
25	ACGF-13	120	880	150	4.45	643	-0.009	3.19	654	20.7
26	ACGF-4	8.18	95.9	674	59.5	17.7	349	-0.009	0.004	486
27	ACGF-5	-	-	-	-	-	-	-	-	-
28	ACGF-7	6.99	84.4	740	54	4.11	405	-0.009	0.019	457
29	ACGF-9	-	-	-	-	-	-	-	-	-

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
30	ACGW-1	6.62	179	1370	133	41.4	890	0.022	4.77	989
31	ACGW-10	6.15	202	1822	179	7.01	1246	-0.009	0.1	1206
32	ACGW-11	6.96	508	5286	512	10.9	3485	0.055	2.41	3644
33	ACGW-13	6.99	399	3954	352	19.5	2647	-0.009	0.335	2601
34	ACGW-15	6.47	17.1	116	5.1	8.91	12.2	-0.009	0.136	45
35	ACGW-16	6.83	395	3906	379	14	2671	-0.009	1.56	2774
36	ACGW-17	8.26	89.6	702	57.4	4.68	108	-0.009	1.91	433
37	ACGW-2	-	-	-	-	-	-	-	-	-
38	ACGW-27	6.8	23.8	160	4.65	4.93	4.72	-0.009	1.13	80
39	ACGW-28	5.73	89.1	626	62.1	10.6	472	-0.009	13.6	449
40	ACGW-30	5.71	104	742	84.9	10.1	550	-0.009	0.054	531
41	ACGW-33	-	-	-	-	-	-	-	-	-
42	ACGW-35	-	-	-	-	-	-	-	-	-
43	ACGW-6	-	-	-	-	-	-	-	-	-
44	ACGW-7	6.96	147	1098	85.6	13.2	685	-0.009	0.012	788

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
45	ACGW-9	-	-	-	-	-	-	-	-	-
46	ATGF-1	-	-	-	-	-	-	-	-	-
47	ATGF-4	-	-	-	-	-	-	-	-	-
48	ATGF-5	6.89	9.83	66	2.45	2.04	3.2	-0.009	0.005	24
49	ATGF-7	3.15	1.92	6.97	0.003	32	3.15	1.92	6.97	-0.009
50	ATGF-8	7.15	44.2	368	23.9	3.01	180	-0.009	0.037	212
51	ATGO-1	-	-	-	-	-	-	-	-	-
52	ATGO-2	8.81	119	680	136	10.3	183	-0.009	0.092	575
53	ATGO-3	-	-	-	-	-	-	-	-	-
54	ATGO-4	-	-	-	-	-	-	-	-	-
55	ATGO-5	8.75	117	812	141	7.92	553	-0.009	0.54	637
56	ATGO-6	-	-	-	-	-	-	-	-	-
57	ATGO-7	6.13	249	2238	177	34.9	1655	6.04	7.4	1670
58	ATGW-1	7.58	155	1070	101	13.2	710	-0.009	2.41	877
59	ATGW-10	-	-	-	-	-	-	-	-	-

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
60	ATGW-11	6.87	141	1052	107	30.4	767	-0.009	3.5	746
61	ATGW-12	-	-	-	-	-	-	-	-	-
62	ATGW-13s	-	-	-	-	-	-	-	-	-
63	ATGW-14	7.64	18.9	122	6.96	17.2	6.27	-0.009	0.027	45
64	ATGW-14s	-	-	-	-	-	-	-	-	-
65	ATGW-15	-	-	-	-	-	-	-	-	-
66	ATGW-15s	-	-	-	-	-	-	-	-	-
67	ATGW-2	6.46	157	1356	133	6.63	822	-0.009	6.58	914
68	ATGW-3	6.8	403	3712	336	26.8	2456	-0.009	14	2476
69	ATGW-4	6.28	212	1778	170	19.6	1324	0.059	0.003	1234
70	ATGW-5	-	-	-	-	-	-	-	-	-
71	ATGW-6	-	-	-	-	-	-	-	-	-
72	ATGW-7	7.53	113	834	47.7	4.25	534	-0.009	0.539	410
73	ATGW-8	6.41	7.91	66	2.31	2.78	6.44	-0.009	0.028	17
74	ATGW-9	6.24	4.08	-34	0.615	2.16	0.895	-0.009	0.008	6

No	Name	pH	EC mS/m	TDS mg/l	Mg mg/l	Cl mg/l	Sulphate SO4 mg/l	Fe mg/l	Mn mg/l	CaCO3/L Total hardness
	TWQR	10	250	1600	1000	500	500	10	10	1000
75	PHGF-1	6.4	129	930	90.6	16.4	660	-0.009	0.015	657
76	PHGF-2	7.67	9.45	78	1.1	5.33	6.91	-0.009	0.115	15
77	PHGW-2	-	-	-	-	-	-	-	-	-
78	PHGW-3	-	-	-	-	-	-	-	-	-
79	PHGW-4	5.61	286	2732	281	6.73	2032	-0.009	7.42	1823
80	PHGW-5	6.92	53.3	306	25.1	47.1	107	-0.009	0.316	241
81	PHGW-6	-	-	-	-	-	-	-	-	-
82	ATGW-13	8.33	18.3	92	5.84	11.4	2.1	0.434	0.03	38

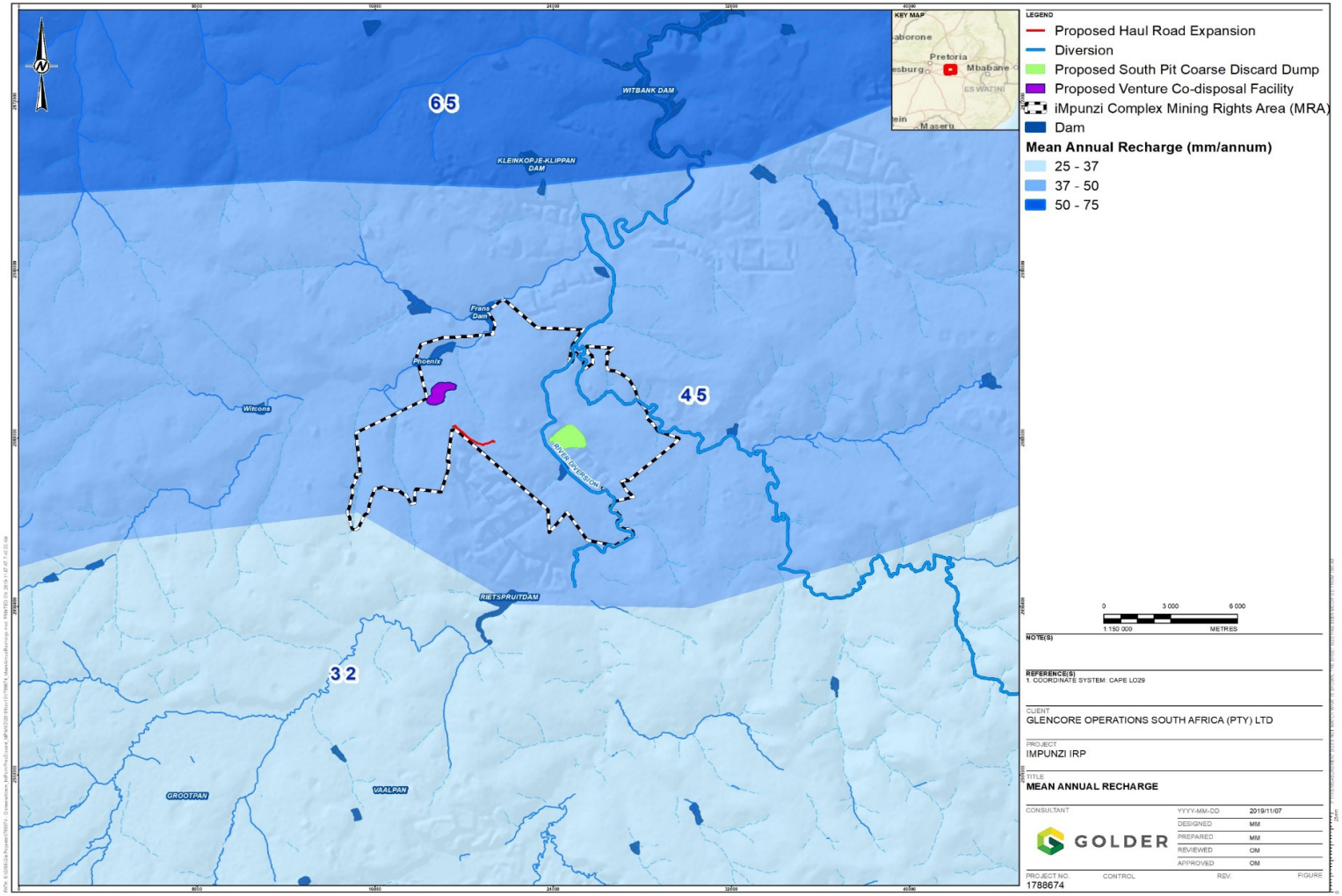


Figure 15: Regional Mean Annual Recharge (MAR) (DWAF, 1995)

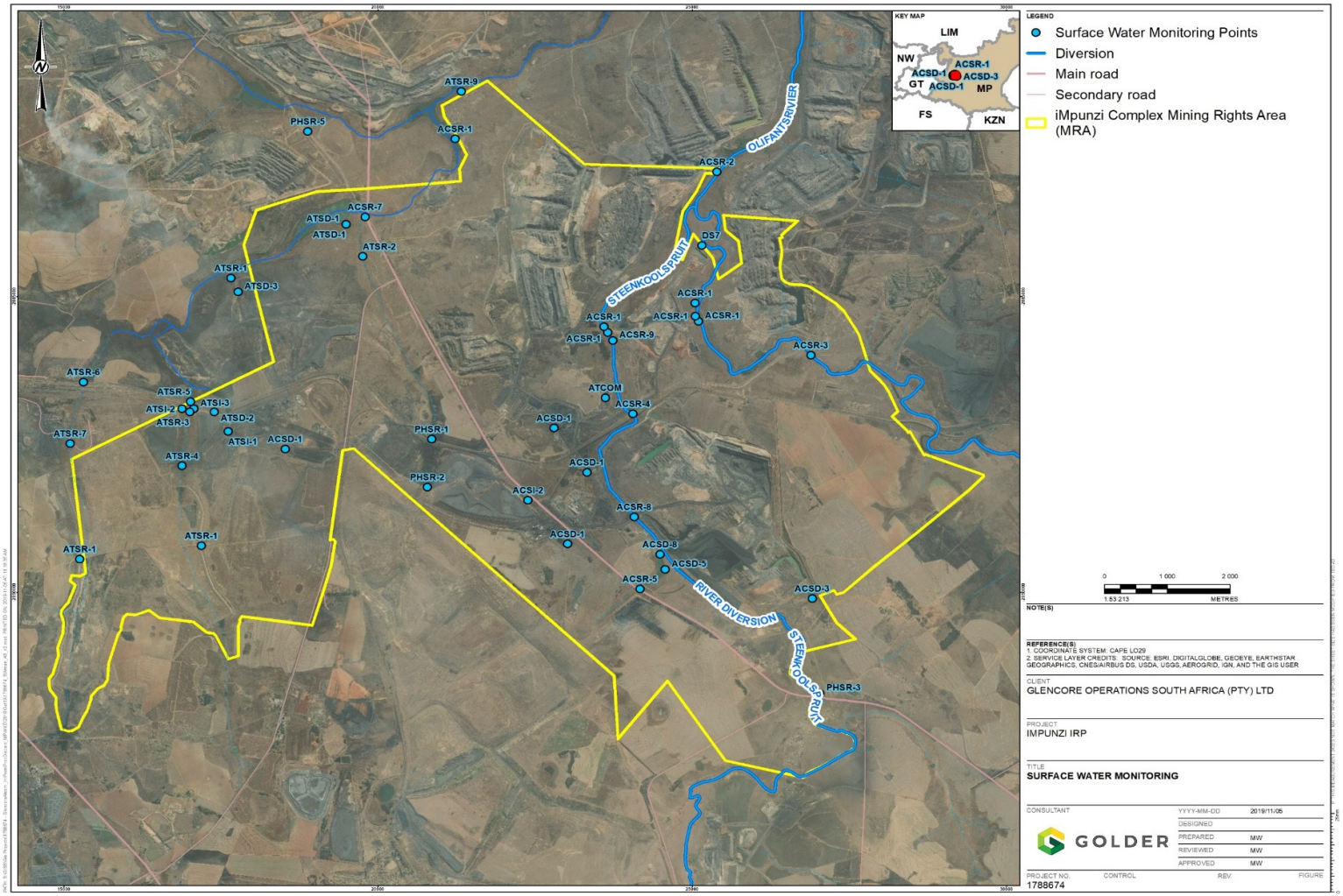


Figure 16: iMpunzi surface water monitoring points

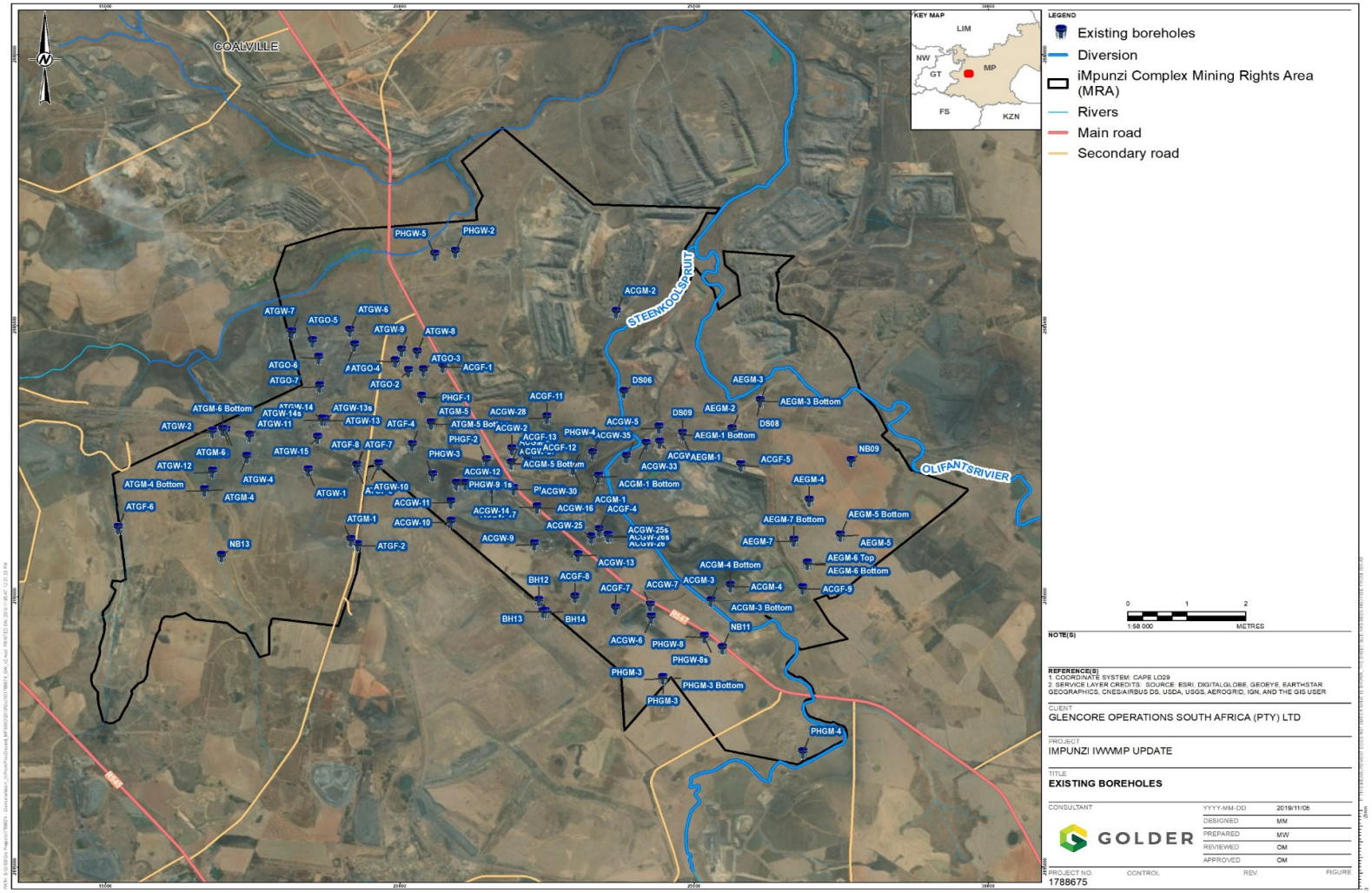


Figure 17: Groundwater Monitoring sites at iMpunzi

4.1.12 Socio-economic

The mine is located within the Nkangala District Municipality, under the jurisdiction of the eMalahleni Local Municipality. eMalahleni Local Municipality is situated in the Mpumalanga Province. It is one of the six local municipalities in the Nkangala District Municipality. It forms part of the western regions of the province and borders Gauteng province to the west. The southern parts of eMalahleni Local Municipality form part of the energy district of South Africa, through rich deposits of coal reserves and power stations such as Kendal, Matla, Duvha and Ga-Nala. The southward rand eastern road networks, as well as the rail network, connect the eMalahleni area to the Richards Bay and Maputo harbours, offering export opportunities for coal reserves. It comprises of eMalahleni City as the main urban centre in the municipality, with the other towns in the municipal area represented by Ogies, Phola, Ga-Nala, Thubelihle, Rietspruit, Van Dyksdrift and Wilge.

4.1.12.1 Demography

According to Stats SA (www.statssa.gov.za accessed 27 February 2019), the eMalahleni Local Municipality has a total population of 395 466 and Ogies account for 1230 of those people (Figure 18 and Figure 19). Seventy seven percent (77%) of the population at Ogies is comprised of black African people, while other race groups make up the rest of the population spread out in various percentages. Within these population groups the male population was found to be higher than that of females.

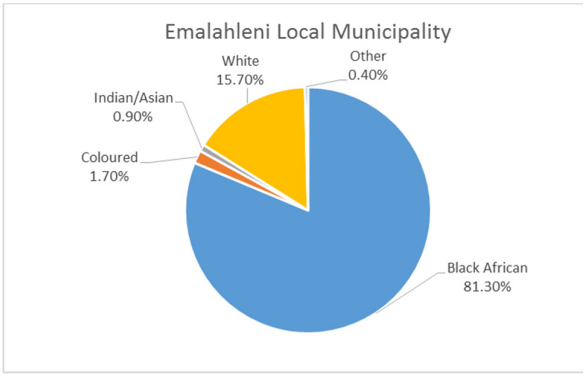


Figure 18: eMalahleni Population Groups (adapted from Statistics South Africa, 2011a)

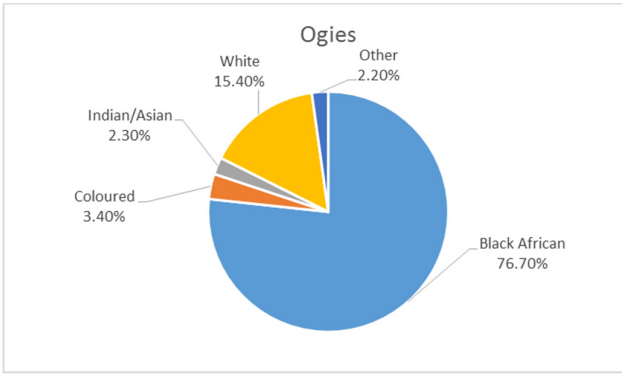


Figure 19: Ogies Population Groups (adapted from Statistics South Africa, 2011b)

Figure 20 below shows the highest level of education for both eMalahleni and Ogies. The majority of eMalahleni has some primary and secondary school education while the majority of Ogies has some secondary education and a matric qualification. A total of 4.7% of the population in Ogies has no schooling, and 11.1% of the local community has primary school education. Of the 11.1% only 3.7% completed primary school. While 37.1% of the community completed matric only 11.9% has higher education.

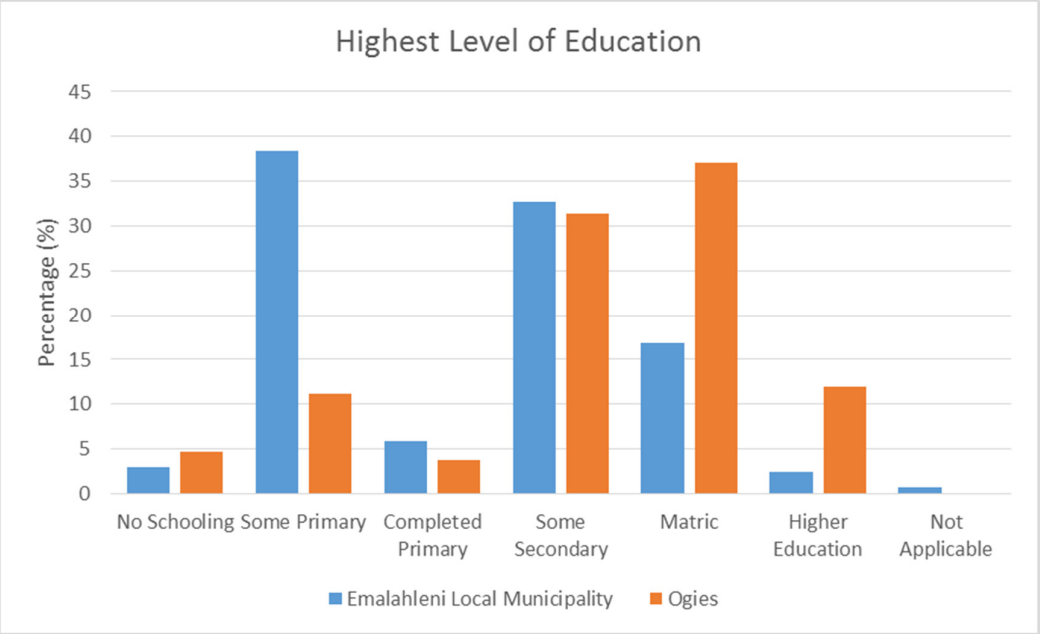


Figure 20: Highest level of education for eMalahleni Local Municipality and Ogies (adapted from Statistics South Africa, 2011a and 2011b)

4.1.12.2 Economic profile

eMalahleni Local Municipality (2012) states that in 2009 the eMalahleni Local Municipality contributed 46% of the economy of the eMalahleni Local Municipality is driven by mining which contributes 50% to the economic sector followed by electricity (12.1%) and finance (10.8%). About 20% of the Ogies population fall within the R19 601 – R38 200 income bracket and 25% fall within the R38 201 – R76 400 bracket (Figure 21). A total of 8.5% of the entire Ogies population has no source of income, and this puts tremendous strain on the local economy. The majority of the income of Ogies is derived from agricultural and mining activities (www.statssa.gov.za accessed 27 February 2019).

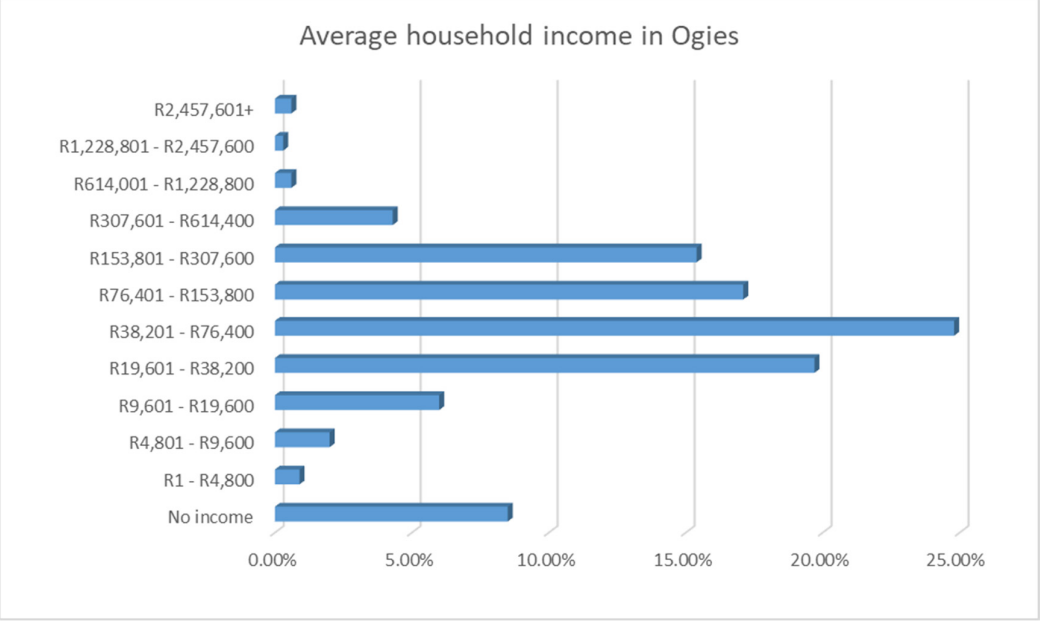


Figure 21: The average household income in Ogies

5.0 POTENTIAL IMPACTS IDENTIFIED

The following potential impacts were identified during the scoping phase:

- Potential negative impact on pit water quality due to the additional acid-generating discard that will be placed on top of old infilled pits;
- Potential spills / dam failure / seepage from the RWD and associated pipelines as detailed in Figure 5;
- Potential spills leaks from the slurry pipelines as detailed in Figure 5;
- At the proposed Venture Co-disposal Facility, removal of vegetation will lead to recently rehabilitated habitat disturbance and increased sedimentation entering the nearby wetlands;
- Chemical leaks/spills from construction vehicles and machinery during construction may result in water quality deterioration (see Figure 5 for the wetland locations detail);
- Potential negative impacts on wetlands / watercourses associated with the proposed haul road widening/ expansion;
- Potential negative impact on noise levels resulting from site preparation, ground excavation and materials handling activities;
- Potential negative impact on the quality of downstream water resources resulting from potential seepage or spillage of contaminated storm water runoff emanating from the discard facilities;
- Potential increased erosion and runoff volumes from the discard material resulting in increased sedimentation and potential contaminated runoff reporting to surface water environment;
- Potential impact on the volume of contaminated mine affected water requiring management/treatment in the post-closure phase of the mine;
- Potential negative impact on downstream aquatic ecosystems and wetlands resulting from the above-mentioned impacts on water quality;
- Potential negative impact on the water supply of local water users;
- Potential negative impact on ambient air quality as a result of increased nuisance dust and fine particulate levels, likely to occur as a result of materials handling activities (tipping, loading and offloading), vehicle entrainment of dust on unpaved roads, and wind erosion from open/ exposed areas;
- Spontaneous combustion on the South Pit Discard Dump resulting in:
  - Increased levels of fugitive emissions (i.e. air pollution) and non-compliance with the NEMAQA when the ambient air quality standards are exceeded;
  - Increased occupational exposures to the combustion gases;
  - Instability within the discard dump and an increased risk of collapses due to voids being formed as the discard burns within the dump; and
  - Increased risk of occupational injuries and losses of equipment due to burns, smoke inhalation, and collapse.
- Potential negative impact on visual aesthetics of the broader region, particularly since the expanded / established discard dumps will remain a permanent visible feature of the landscape; and
- Potential positive impact on employment safety of permanent employees, continued skills transfer, and local economic development.

6.0 EIA PROCESS AND METHODOLOGY

The overall process and methodology that was followed for the scoping phase of the EIA was based on the requirements of South African legislation (specifically NEMA) and best practice standards and guidelines.

The approach included the following key stages:

- Gap Analysis of existing information against the project compliance criteria;
- Screening (legal and process review) – review of all applicable compliance criteria inclusive of South African legal and administrative requirements (see Section 3.1 to Section 3.5 above);
- EIA scoping (identification of key issues and development of a plan of study for carrying out the impact assessment). This report is presented to the public for comment and to the government departments dealing with mining and environmental authorisations for a decision on whether the scope proposed for the EIA is appropriate;
- Environmental and Social Baseline Information review – carrying out desktop assessment and review of existing baseline conditions of the environment that could be affected by the proposed project; and
- Stakeholder Engagement – is being undertaken throughout the EIA process to record issues and comments received from the public. These issues and comments are integrated into the process and will be considered in the impact assessment phase of the EIA.

The following activities will be undertaken during the next phase of the EIA:

- Environmental and Social Management Systems Development – the establishment of a system for the management of environmental and social impacts supported by a number of action plans;
- Preparation of an EIA report – documenting all processes and presenting the findings of the impact assessment. The EIA report will be presented to the public for comment and to the relevant South African government departments for a decision on whether the project may proceed, and if so, under what conditions;
- Stakeholder Engagement – will continue throughout the remainder of the EIA process to record issues and comments received from I&APs. All issues and comments will be integrated into the process and considered during the EIA;
- The overarching principles that guide the EIA include:
  - Sustainability – development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs; and
  - Mitigation hierarchy – The mitigation hierarchy describes a stepwise approach that illustrates the preferred approach to mitigating adverse impacts as follows (the governing principle is to achieve no net loss and preferably a net positive impact on people and the environment as a result of the project):
    - The preferred mitigation measure is **avoidance;**
    - Then **minimisation**;
    - Then **rehabilitation or restoration**; and
    - Finally, **offsetting** residual, unavoidable impacts.
  - Duty of care towards the environment and affected people.

The assessment of the impacts of the proposed activities will be conducted within the context provided by these principles and objectives.

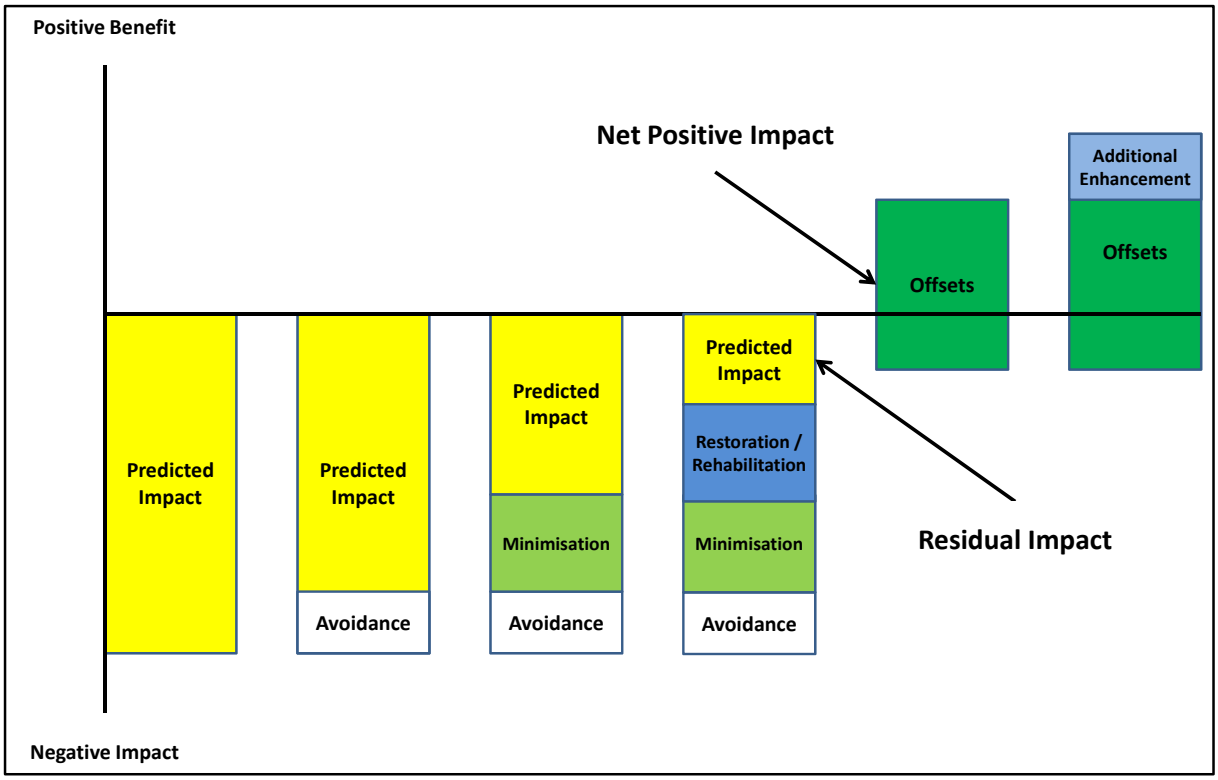


Figure 22: Mitigation Hierarchy Adapted from Biodiversity Offset Design Handbook, 2009

6.1 Scoping methodology

The methodology specifically adopted for the scoping phase includes the following:

- Stakeholder consultation as required in terms of the EIA Regulations;
- Review of existing data;
- Specialists team to identify key impacts and issues and to outline the plan of study; and
- Compiling the scoping report.

6.2 Assumptions and limitations

The EIA is limited to the scope of the assessment outlined in more detail in Section 7.0 of this document.

Although all effort was made by the project team to identify all environmental and social aspects, impacts and mitigation measures, errors and omissions may have occurred. The environmental management programme (EMPr) that will be developed as part of the EIA process will be a live document that must be adapted and updated as additional information, aspects or impacts are identified. An important objective of the EMPr is for the GOSA iMpunzi project team to continually improve environmental and social performance. Besides, according to South African legislation, the EMPr will need to be updated or amended with new information when there are significant changes during the life of the project.

Every effort was made to engage stakeholders to the extent possible, however not every stakeholder may have been consulted, or their comments may have been recorded erroneously. A grievance mechanism has been put in place through which stakeholders can raise grievances and continue to contribute their concerns and issues with the project team.

More detail on the assumptions and limitations of the EIA will be provided once the impact assessment has been completed. These assumptions and limitations may relate to the accuracy of quantitative and qualitative impact assessment methods utilised.

6.2.1 Key authorities for the environmental authorisation application

The DMRE will be the decision-making authority for the EA assessment and the EMPr supported by the EIA, which is being undertaken in terms of the latest EIA Regulations.

6.3 Positive and negative impacts of the initial site layout

The location of all proposed facilities is located within iMpunzi Mining Complex and will be an expansion/extension of the current facilities. The proposed facilities layout, as illustrated in Figure 5 and Figure 6, has been optimised to ensure integration with the iMpunzi Mining Complex and existing access roads.

6.4 Possible mitigation measures and level of risk

The following issues and potential mitigation measures are being considered:

- **Air quality, Noise and Visual Nuisance impact mitigation:**
  - Wet suppression on all unpaved haul roads with water;
  - Speed control;
  - Compact discard and implement concurrent rehabilitation;
  - If spontaneous combustion commonly occurs onsite, trace gas monitoring of the fugitive combustion emissions must be undertaken to determine the impact on the ambient air quality and compliance with the National Ambient Air Quality Standards (NAAQS);
  - Dust and fine particulate monitoring should be implemented to monitor compliance with NAAQS;
  - Implement concurrent rehabilitation of the discard dump to reduce the visual intrusion;
  - If noise levels associated with material handling activities are deemed as too high, mechanisms to reduce noise levels must be investigated;
  - Rigorous speed control to reduce the noise from vehicle traffic; and
  - Using the most appropriate equipment for the particular purpose.
- **Surface Water impact mitigation:**
  - Utilising applicable erosion procedures;
  - Ensure adequate compaction of discard material and ensure that concurrent rehabilitation takes place;
  - Ensure that the storm water management plan associated with the proposed project is implemented and complies with Regulations GN704;
  - Clean up spillages immediately and dispose of contaminated materials;
  - Application of cover as part of concurrent rehabilitation to reduce / limit recharge into the discard facilities;
  - Revegetate placed cover material as quickly as possible;

- Manage the use of earth moving machinery in accordance with the mine's standard operating procedures;
- Develop the dump in accordance with the design slopes; and
- Implement corrective measures identified in ongoing rehabilitation performance monitoring and assessment.

- **Wetland impact mitigation**:
  - Vegetation removal should be restricted to the proposed development footprint only;
  - Existing access roads should be used as far as possible; no creation of additional access roads is allowed unless required;
  - A qualified environmental control officer should be on site during vegetation clearing to monitor for and manage any aquatic life and species of conservation importance; and
  - All vehicles and equipment should be checked and assessed for any fault or leaks before entering site.
- **Groundwater impact mitigation**:
  - Existing groundwater level monitoring network for the study area should continue to be utilised;
  - Boreholes downgradient of backfilled or rehabilitated pits should be monitored for rising water levels, and potential decant of these pits;
  - Groundwater levels should continue to be monitored monthly. Should it be identified that groundwater dependent/private users within the vicinity are impacted, it may be necessary to conduct a water supply options analysis and develop a supply strategy to meet the deficits;
  - Kinetic testing of the discard dumps and slurry material to predict post closure groundwater quality; and
  - Instillation of interceptor boreholes downgradient of facilities to capture the contaminant plume from reaching river channels (Steenkoolspruit).
- **Biodiversity impact mitigation:**
  - Implement sediment and erosion control, and the maintenance thereof, as per the storm water management plan associated with the proposed project;
  - Ensure that abstracted mine affected water is treated to a standard suitable for discharge to the environment; and
  - Any changes in the biotic integrity of the Steenkoolspruit should be investigated following the implementation of this proposed project.
- **Cultural and heritage impact mitigation:**
  - Although the proposed activities will take place on areas that were previously mined and rehabilitated, the possibility of affecting local cultural and heritage resources cannot be ruled out; and
  - Should any heritage resources be encountered, the appointed ECO should be contacted immediately, and construction on that area should cease until heritage sites are recovered or demarcated.

- **Socio-economics impact mitigation:**
  - Include local employment and procurement targets in contract agreements; and
  - Implement possible nuisance mitigation measures listed above.

6.5 Site selection matrix and final site layout plan

The footprints associated with the proposed Venture Co-disposal Facility and South Pit Discard Dump are located on previously mined-out land, and hence are brownfields sites. The proposed RWD is located downstream of the proposed of the Venture Co-disposal Facility. The haul road between the ATCOM and ATC Plant will be widened, following the current haul road alignment, until it will tie into the existing railway reserve to the ATC Plant.

6.6 Motivation for not considering alternative sites

Site alternatives are limited by the current location of the coal processing plants, existing discard facilities and existing supporting infrastructure such as haul / access roads, and storm water management facilities. The footprints associated with the proposed Venture Co-disposal Facility and South Pit Discard Dump are located on previously mined-out land, and hence are brownfields sites. The new RWD will be placed in a low lying/flat plain where it will easily receive and trap effluent discharge.

6.7 Statement motivating the preferred site

Please refer to section 6.6.

7.0 ENVIRONMENTAL IMPACT ASSESSMENT

The EIA process for this project has been designed to comply with the requirements of the EIA Regulations of 2014 (RSA, 2014e), (See section 3.0). Cognisance has also been taken of the following key principles contained in the National Environmental Management Act (Act 107 of 1998) (NEMA), which is South Africa's framework environmental legislation:

- Sustainability – a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs;
- Mitigation hierarchy – avoidance of environmental impact, or where this is not possible, minimising the impact and remediating the impact; and
- The duty of care of developers towards the environment.

The assessment of the impacts of Glencore's proposed activities on the properties listed in Table 3, above, will be conducted in accordance with these principles.

Based on the findings of the EIA, a comprehensive environmental management programme (EMPr) will be developed and implemented to control and minimise the impacts during construction, operation, and decommissioning of the proposed operations.

7.1 Plan of study for impact assessment

The impact assessment component of the EIA is subdivided into several specialist fields of study. The findings of the specialist studies will be integrated into the EIA report. The significance of the impacts will be assessed in terms of the methodology described in section 6.0 of this report.

The terms of reference for the specialist investigations are set out below. The description is presented in general terms, but all the issues that need to be addressed by the studies are captured. Where applicable, the cumulative effects of this project on the existing impact experienced in the surrounding areas will be assessed.

7.1.1 Groundwater

The key objective of this investigation is to develop a numerical groundwater flow and transport model which suitably represents current site conditions and which can be used to predict/forecast the impacts on the groundwater regime of the subsurface underlying and surrounding the disposal facilities and associated mining activities. The model will be used to assess the likely impacts of the mining activities on the existing groundwater regime, including:

- Determining the likely areas of impact associated with the expansion of the two disposal facilities (Venture Co-disposal Facility and South Pit Discard Dump) and establish if any receptors are likely to become impacted; and
- Formulating appropriate mitigation measures.

7.1.2 Surface hydrology

A surface water impact assessment will be conducted. The impact assessment will be done by exploring and predicting the effects of the of the proposed activities on the pre-project baseline conditions and acceptable levels as defined by standards, guidelines and good practices. The surface water study will also take into consideration the requirements of Regulation 704 under the NWA and make recommendations for achieving compliance with the requirements of this regulation. The surface water study will include the following:

- Determining the quantity of runoff from the proposed facilities for rainfall events with 50-year and 100-year recurrence intervals to properly size and design storm water control measures;
- Delineating clean and dirty areas on site from the mining and infrastructure layout plan;
- Determining the site water balance and identifying opportunities for recycling runoff from the dirty water collection areas to the mining process;
- Design criteria will be set up for sizing the storm water management structures;
- A model will be set up and applied to determine the layout and sizes of the conveyance structures required for the clean and dirty water collection systems and RWD to meet the requirements of Regulation 704 of the NWA; and
- The impacts of the proposed activities on the local surface water resources will be assessed, and appropriate mitigation measures will be recommended for inclusion into the EMPr.

7.1.3 Wetland assessment

A wetland assessment will be undertaken for all wetlands within close vicinity to the proposed activities. The principal aim of this study will be to identify all wetlands within the study area and surrounds and to identify their health and sensitivity.

Specific objectives include, among other things:

- Identify and delineate wetlands on site using the DWAF 2005 wetland and riparian delineation guidelines;
- Undertake wetland functional assessments of the wetlands affected by the proposed activities using the WET-EcoServices tool;
- Determine the present ecological state (PES) of the wetlands affected by the proposed activities using the WET-Health level 1 assessment methodology;
- Determine the ecological importance and sensitivity of the wetlands affected by the proposed activities using widely accepted Rountree *et al.,* (2013) methodology;

- Compilation of maps and shapefiles to accompany the wetland specialist report;
- Review of the proposed development plans and activities;
- Identification and assessment of expected impacts to wetlands, riparian areas and watercourses;
- Compilation of suitable mitigation and management measures to reduce project impacts;
- Completion of GN509 Water Use Risk Assessment matrix; and
- Compilation of detailed wetland delineated and assessment report.

7.1.4 Soils condition and land capability assessment

An assessment of the existing soil conditions and land capability will be conducted for land identified by GOSA as available for soil harvesting. The soil will assessment focused on determining the available soil volumes and capability for use as cover material.

The objectives of the study were as follows:

- Conduct a detailed soils assessment on potential cover material source areas;
- Classify and map the observed soils per the South African Taxonomic Soil Classification System, 1991; and
- Estimate the volume of soil material available for future rehabilitation actions.

7.2 Impact assessment methodology

The significance of identified impacts will be determined using the approach outlined below (terminology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998). This approach incorporates two aspects for assessing the potential significance of impacts, namely occurrence and severity, which are further subdivided as follows:

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Scale/extent of impact	Magnitude of impact

The following five ranking scales are used to assess the magnitude and duration of impacts:

Magnitude	Duration
10- Very high/unknown	5- Permanent (>10 years)
8- High	4- Long-term (7 - 10 years, impact ceases after site closure has been obtained)
6- Moderate	3- Medium-term (3 months- 7 years, impact ceases after the operational life of the activity)
4- Low	2- Short-term (0 - 3 months, impact ceases after the construction phase)
2- Minor	1- Immediate
Scale	**Probability**

Magnitude	Duration
5- International	5- Definite/Unknown
4- National	4- Highly Probable
3- Regional	3- Medium Probability
2- Local	2- Low Probability
1- Site Only	1- Improbable
0- None	0- None

Once these factors are ranked for each impact, the significance of the two aspects, occurrence and severity, is assessed using the following formula:

Significance Points= (Magnitude + Duration + Scale) x Probability.

The maximum value is 100 significance points (SP). The impact significance will then be rated as follows:

Points	Significance	Description
SP>60	High environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 - 60	Moderate environmental significance	An impact or benefit which is sufficiently important to require management, and which could have an influence on the decision unless it is mitigated.
SP<30	Low environmental significance	Impacts with little real effect and which will not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

For the methodology outlined above, the following definitions were used:

- Magnitude is a measure of the degree of change in a measurement or analysis (e.g., the area of pasture or the concentration of a metal in water compared to the water quality guideline value for the metal), and is classified as none/negligible, low, moderate or high. The categorisation of the impact magnitude may be based on a set of criteria (e.g. health risk levels, ecological concepts and professional judgement) pertinent to each of the discipline areas and key questions analysed. The specialist study must attempt to quantify the magnitude and outline the rationale used. Appropriate, widely recognised standards are to be used as a measure of the level of impact;
- Scale/Geographic extent refers to the area that could be affected by the impact and is classified as site, local, regional, national, or international;

- Duration refers to the length of time over which an environmental impact may occur i.e. immediate/transient, short-term (0 to 7 years), medium-term (8 to 15 years), long-term (greater than 15 years with impact ceasing after closure of the project), or permanent; and
- Probability of occurrence is a description of the probability of the impact actually occurring as improbable (less than 5% chance), low probability (5% to 40% chance), medium probability (40% to 60% chance), highly probable (most likely, 60% to 90% chance) or definite (impact will definitely occur).

7.3 Method of assessing duration significance

Duration refers to the length of time over which an environmental impact may occur, i.e. immediate/transient, short-term (0 to 7 years), medium-term (8 to 15 years), long-term (greater than 15 years with impact ceasing after the closure of the project), or permanent.

7.4 Stages at which competent authority will be consulted

The competent authority, DMRE, will be consulted:

- Prior to submission of the application for EA and WML;
- During the 30-day period for public review of the DSR;
- During the 43-day period of evaluation of the scoping report;
- During the 106-day period of development of the EIR and EMPr;
- During the 30-day period for public review of the draft EIR and EMPr;
- During the 107-day period of evaluation of the EIR and EMPr; and
- In the event of an appeal.

7.5 Tasks to be undertaken during the environmental impact assessment process

The various specialist studies that will be undertaken during the EIA process are described in section 7.1, and the associated tasks are briefly summarised here.

7.5.1 Finalisation of site layout

The preliminary site layout and location of infrastructure has been determined by taking into consideration the environmental baseline information generated during the scoping process as well as economical and practical considerations associated with the proposed mining operations. The layout will be finalised after taking into consideration any additional information that becomes available during the EIA process.

7.5.2 Specialist investigations

The various specialist studies that will be undertaken during the EIA process are described in section 7.1 and include the following:

- Groundwater (section 7.1.1);
- Surface hydrology (section 7.1.2);
- Wetland assessment (section 7.1.3); and
- Soil condition and land capability assessment (section 7.1.4).

7.6 Measures to avoid, reverse, mitigate, manage impacts and determine residual risks

A summary of the potential mitigation measures is provided in section 6.3. The plan of study for the EIA for possible measures that will be employed to avoid, reverse, mitigate and manage identified impacts and the determination of residual risks associated with the proposed site operations will be undertaken at the EIA phase.

Table 11 outlines possible measures that can be employed to avoid, reverse, mitigate and manage identified impacts and the determination of residual risks associated with the proposed activities at the iMpunzi Mine Complex.

Table 11: Activities, impacts, mitigation and residual risks

Activity	Potential Impact	Mitigation Type	Potential Residual Risk
Construction and operation of the proposed facilities	Groundwater: ■ Deterioration of groundwater quality.	Numerical modelling, monitoring and appropriate opencast pit dewatering.	Variations in rock permeability and transmissivity could temporarily result in higher inflow than expected. Unknown water pockets could be encountered. Low residual risk if mitigation measures are properly implemented.
	Surface water: ■ Change of surface water quality. ■ Changes in surface water runoff and erosion. ■ Change in volume of mine affected water to be managed.	Monitoring and effective storm water management.	Low residual risk, if mitigation measures are properly implemented.
	Wetlands: ■ Loss of wetland habitat. ■ Increased sedimentation. ■ Changes in the surface water quality, changes in the surface and subsurface water flow, and erosion.	Monitoring and effective storm water management. Appropriate operational management to minimise the impact on wetlands and pans. Culverts should be constructed to facilitate the movement of surface water and aquatic life.	It is inevitable that some of the wetlands and pans will be directly and indirectly impacted through the opencast mining operations. There will, therefore, be an inherent residual risk to the wetland areas. The residual risk can be lowered with the implementation of mitigation measures.
	Ecology: ■ Removal of indigenous vegetation. ■ Reduced habitat for biodiversity. ■ Alien vegetation encroachment.	Operational management and effective rehabilitation. Removal of alien vegetation.	Lack of concurrent rehabilitation could result in the loss of habitat for local biodiversity. A low residual risk is expected mitigation measures are sufficiently implemented.

Activity	Potential Impact	Mitigation Type	Potential Residual Risk
	Air Quality: ■ Release of particulates, combustion gases and VOCs into the atmosphere.	Monitoring, appropriate blast design, and effective operational management.	Possible exceedances of acceptable air quality limits. Low residual risk if mitigation measures are implemented.
	Noise: ■ Noise impact from construction vehicles and operational activities.	Monitoring, appropriate blast design, and effective operational management.	Possible exceedances of acceptable noise levels. Low residual risk if mitigation measures are implemented.
	Visual: ■ Visual impact as a result of the expanded discard facilities and operational infrastructure.	Monitoring and effective operational control.	A low residual risk is envisaged if mitigation measures are implemented.
	Cultural and heritage: ■ Unearthing of unknown graves.	Implementation and monitoring of a chance find protocol.	No residual risk is envisaged if mitigation measures are implemented.
	Soils, land capability and land use ■ Soil contamination during construction from construction vehicles and operation from potential spills from the proposed facilities ■ Cover material sourcing	Construction vehicles should be pre-inspected for any damages that could lead to potential spills.	No residual risk is envisaged if mitigation measures are implemented.

8.0 OTHER INFORMATION REQUIRED BY COMPETENT AUTHORITY

8.1 Impact on socio-economic conditions of any directly affected persons

The socio-economic impacts on the residents close enough to be directly affected can only be determined after the specialist studies described in section 7.1 (plan of study for the impact assessment) have been completed. No relocation is required.

8.2 Impacts on any national estate

No cultural/heritage resources close enough to the proposed activities to be impacted were found. However, the possibility of chance finds during construction and mining cannot be ruled out.

9.0 OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE NEMA

- Section 24(4)(a) (iii) requires that a description of the environment likely to be significantly affected by the proposed activity be provided. The description of the environment is provided in Section 4.0 of this report;
- Section 24(4)(a) (iv) requires an investigation of the potential consequences for or impacts on the environment as a result of the activity and assessment of the significance of those potential consequences

or impacts. See section 6.3 of this report, where potential impacts were identified. Their assessment, as detailed in the Plan of Study for Impact Assessment (section 7.1 will be done during the impact assessment phase of the EIA;

- Section 24(4)(a) (v) references public information and participation procedures, which have been dealt with in section 3.8.1 and 3.9 of this report.

10.0 UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I, Mariëtte Weideman herewith undertake that the information provided in the foregoing report is correct and that the comments and inputs from stakeholders and I&APs have been correctly recorded in this report.

Date: _____

11.0 UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, Mariëtte Weideman herewith undertake that the information provided in the foregoing report is correct and that the level of agreement with I&APs and stakeholders has been correctly recorded and reported herein.

Date: _____

12.0 REFERENCES

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Signature Page

Golder Associates Africa (Pty) Ltd.

Mariëtte Weideman
Environmental Assessment Practitioner

Olivia Allen
Senior Environmental Consultant

LN/MW/OA/

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APPENDIX A

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