

APPENDIX 1: EAP COMPANY EXPERIENCE



Company Profile

www.abs-africa.com

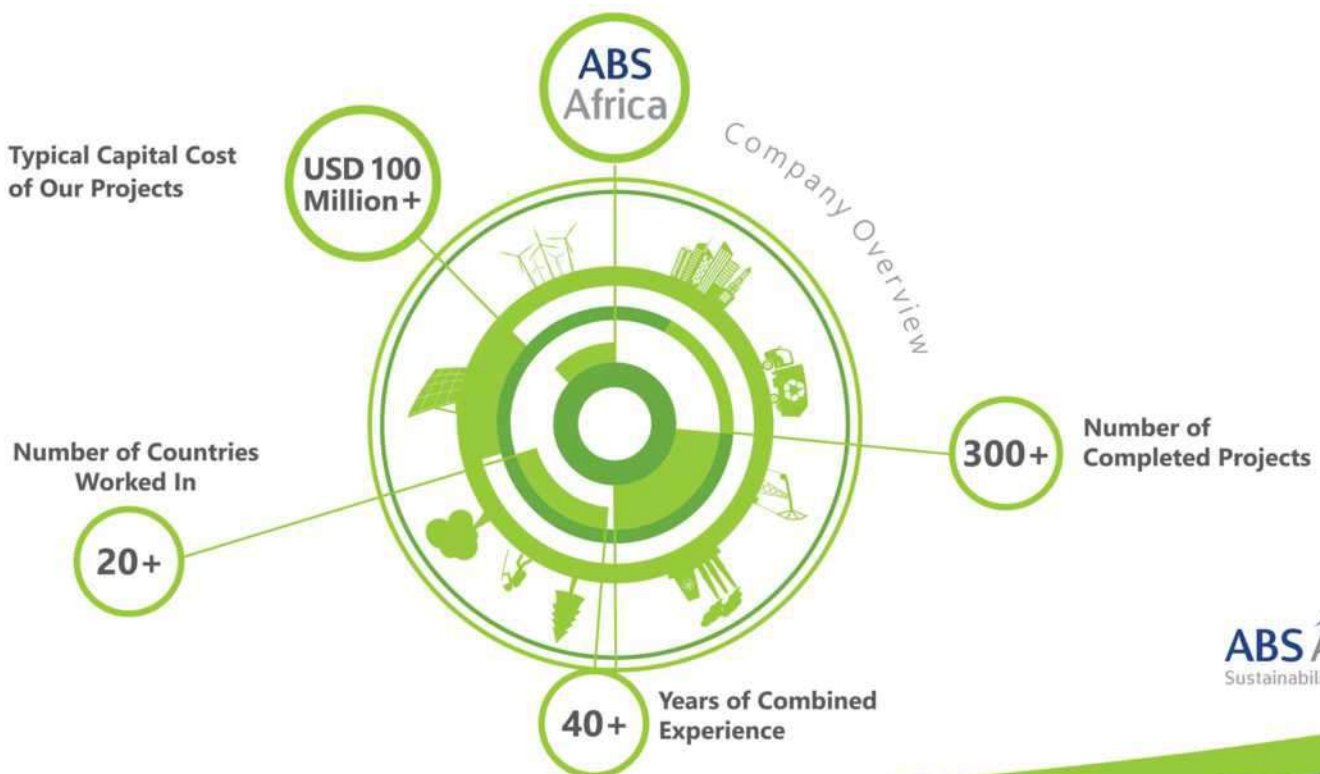
Company overview



Advisory on Business and Sustainability Africa (Pty) Ltd. (ABS Africa) provides advisory and consulting services focussed on sustainable development. The company was established in recognition of the need for business-specific and flexible professional advisory services on sustainability planning and implementation.

With more than 40 years collective experience in the mining, energy, and infrastructure sectors, our capabilities include prefeasibility and feasibility environmental assessments, independent competent persons reporting, environmental licensing, sustainability reporting, due diligence audits, compliance monitoring, resettlement planning, mine closure planning and spatial analysis.

The foundation of our service offering is our value system. We are committed to being unconditionally honest, excellent in the services we offer and available to our clients for as long as they think we can add value to their business.



ABS Africa

ABS Africa offers a complete range of sustainability services to clients in the mining, infrastructure and energy sectors.

We understand the complexity of environmental and social systems and the significant role these play in the long-term sustainability of a business.

From complex Environmental and Social Impact Assessments (ESIAs) to specialist advisory services in water, biodiversity, air quality, soils, and waste, our team of social and environmental professionals have been privileged to work for public and private sector institutions across the African continent.

We have established a network of selected specialist expertise and in-country sustainability professionals across Africa to complement our team. Through this network, we are able to ensure that our service, quality and value proposition remains consistent, regardless of where we work.

Developed from our success in the resources sector, we have gained considerable experience in the application of best practice standards and guidelines including the IFC Performance Standards and Equator Principles.



Our Core Services are as Follows:

- 🌍 Sustainable Development Advisory Services
- 🌍 Due Diligence Investigations and Review
- 🌍 Environmental Assessment
- 🌍 Environmental Audits and Compliance Monitoring
- 🌍 Environmental Management Programmes
- 🌍 GIS, Spatial Analysis and Spatial Planning
- 🌍 Mine Closure and Rehabilitation Planning
- 🌍 Permitting and Licensing



Sustainable Development Advisory Services

From early sustainable development interventions in the mid-1990s to the more recent commitments reached at COP21 and the UN Post-2015 Development Agenda, the ABS Africa team of professionals are privileged to be involved in advising clients on a range of sustainability aspects. We provide advisory services across the sustainable development continuum including sustainability business risk and opportunity assessments, carbon, GHG and climate change planning, and sustainability reporting. ABS Africa is a member of the Green Building Council of South Africa (GBCSA).



Due Diligence Investigations and Review

As trusted advisors to financial institutions, private investors, project owner's and some of the largest project engineering companies in the world, we have applied our expertise in advising clients on the potential risks and mitigation measures associated with acquisitions, third party reviews, recommissioning and other related activities.



Environmental Assessment

Our team of social and environmental professionals have completed numerous Environmental and Social Impact Assessments (ESIAs) in the mining, energy and infrastructure sectors. We have experience in applying our environmental assessment expertise throughout the project development process, from screening studies in concept stage to the successful completion of complex ESIAs compliant with international standards. With a project footprint encompassing most regions in Africa, we are familiar with the need to ensure that the assessment process addresses both in-country legal requirements and the IFC Performance Standards and Equator Principles.



Environmental Audits and Compliance Monitoring

From rapid gap analysis audits to comprehensive facility audits of complex industrial sites, we have experience in conducting audits against license conditions, company management systems and international best practice. We have assisted in the development of a guideline on compliance monitoring for a regulatory agency and provided compliance monitoring services during the construction phase of various developments including residential, port, rail and petroleum storage.

Capabilities



Environmental Management Programmes

Having been responsible for the setup and implementation of environmental management controls for the construction phase of a variety of large infrastructure projects, we are familiar with the challenges of constructing a development within the ambit of overly restrictive or inflexible management measures. From basic construction environmental management plans for small infrastructure developments to IFC-compliant Environmental Management Programmes with Action Plans, we have experience in compiling management plans and programmes which are risk-based, flexible and pragmatic.



GIS, Spatial Analysis and Spatial Planning

Our GIS capability includes a range of services including basic mapping for environmental assessments, environmental monitoring, floodline analysis and environmental permit applications. Spatial analysis, 3D analysis, geodatabases and the classification and interpretation of remotely sensed data is also undertaken. With access to a range of spatial data through our preferred partners, we also advise clients on the selection of the most appropriate spatial data for a particular project application.



Mine Closure Planning and Implementation

Working with selected specialists, ABS Africa has experience in the quantification of closure liabilities, the development and compilation of closure plans, specifications and the more practical aspects of setting up and managing rehabilitation and closure contracts.



Permitting and Licensing

Supported by our selected network of specialists and in-country environmental professionals, ABS Africa has considerable experience in obtaining the various environmental permits that may be required for a development. These include waste management licences, atmospheric emission licences, heritage permits, water use licences and permits for the relocation and/or removal of fauna and flora.





CONTACT US

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Company Profile

APPENDIX 2: EAP CV

CURRICULUM VITAE

KRISTY ROBERTSON

ENVIRONMENTAL ADVISOR / ENVIRONMENTAL ASSESSMENT PRACTITIONER

BACKGROUND

Kristy is a Sustainability Advisor/Environmental Assessment Practitioner at ABS Africa. She has 9 years' experience managing various environmental studies in the mining and infrastructure sectors.

Her project experience includes the management and compilation of local environmental assessment studies. She has undertaken projects all over South Africa.

FIELDS OF COMPETENCE

- ⇒ Environmental Impact Assessments (EIAs)
- ⇒ Basic Assessment Reports (BARs)
- ⇒ Environmental Management Programmes (EMPrs)
- ⇒ Water Use Licenses (WULs)
- ⇒ Waste Management Licenses (WMLs)
- ⇒ Section 24G applications
- ⇒ Environmental auditing
- ⇒ Environmental screenings
- ⇒ Environmental due diligence studies
- ⇒ Project management

ACADEMIC QUALIFICATIONS

- ⇒ Bachelor of Science in Zoology and Ecological and Environmental Sciences: University of the Witwatersrand, 2010
- ⇒ Bachelor of Science (Honours) in Zoology: University of the Witwatersrand, 2011
- ⇒ Master of Science in Environmental Sciences: University of the Witwatersrand, 2013

PROFESSIONAL REGISTRATION

Pr.Sci.Nat. Professional Natural Scientist (Environmental Science): The South African Council for Natural Scientific Professions, 2016

Registered Environmental Assessment Practitioner: Environmental Assessment Practitioners Association of South Africa

ENVIRONMENTAL IMPACT ASSESSMENT STUDIES

CERAX WAX MATERIAL PROCESSING PLANT – GAUTENG (2021 –2022)

Environmental Assessment Practitioner for a waste management license for a wax material processing plant for the recycling and treatment of wax waste, which is considered hazardous, located in Jetpark in the Gauteng Province.

THE POOL TEAM STORAGE WAREHOUSE – GAUTENG (2021 – 2022)

Environmental Assessment Practitioner for a basic assessment process for the development of a new warehouse that will be used to store dangerous chemicals for use in swimming pools, located in Longlake in the Gauteng Province.

PAULPIETERBURG FILLING STATION – KWAZULU-NATAL (2020-2021)

Environmental Assessment Practitioner for a basic assessment process for the development of a filling station, located in Paulpietersburg in the KwaZulu-Natal Province.

ENERTEK WASTE OIL RECYCLING PLANT – GAUTENG (2020-2021)

Environmental Assessment Practitioner for a basic assessment process and waste management license for

a waste oil recycling plant for waste oil and other hydrocarbon based liquids, located in Pomona in the Gauteng Province.

JANE FURSE GOVERNMENT PRECINCT – LIMPOPO (2020 - 2021)

Environmental Assessment Practitioner for a government precinct development, located on Portion 29 of Farm Vergelegen No. 819 KS in Jane Furse in the Limpopo Province.

E-SHELTER DATA CENTRE – GAUTENG (2019 - 2020)

Environmental Assessment Practitioner for a back-up power plant for a data centre, located in Centurion in the Gauteng Province.

WINBURG HIGHWAY FILLING STATION AND REST AREA – FREE STATE (2019 -2020)

Environmental Assessment Practitioner for the development of a highway filling station and rest area on the remainder of Farm Cornelia No. 444, along the N1 south west of Winburg in the Free State Province.

THORNHILL HOUSING DEVELOPMENT – EASTERN CAPE (2018- 2019)

Environmental Assessment Practitioner for the Thornhill housing development in Eastern Cape.

ESKOM 400KV POWERLINE – NORTH WEST (2017- 2019)

Environmental Assessment Practitioner for a transmission line, approximately 180km in length, from the existing Mookodi Substation in Vryburg and travels in a northeast direction ending near Mahikeng at the proposed Mahikeng substation site in the North West Province.

REHABILITATION OF SHIP REPAIR FACILITY IN MOSSEL BAY – WESTERN CAPE (2017- 2019)

Environmental Assessment Practitioner for the upgrade of the existing ship repair facility at the port of Mossel Bay in Western Cape.

LANSERIA OUTFALL SEWER PIPELINE – GAUTENG (2017- 2019)

Environmental Assessment Practitioner for a new outfall sewer pipeline in Lanseria in Gauteng.

LANSERIA WASTEWATER TREATMENT WORKS - GAUTENG (2015- 2017)

Environmental Assessment Practitioner for a new 150 Ml/d wastewater treatment works in Lanseria in Gauteng.

VAAI GAMAGARA PIPELINE – NORTHERN CAPE (2015- 2016)

Environmental Assessment Practitioner for the water use license application for the Vaal Gamagara pipeline development in Northern Cape.

BRANDKOP MIXED USE DEVELOPMENT – FREE STATE (2014- 2016)

Environmental Assessment Practitioner for the Brandkop mixed use development in Bloemfontein in Free State.

MTWALUME DAM, VULAMEHLO CROSS BORDER WATER SCHEME – KWAZULU-NATAL (2014-2016)

Environmental Assessment Practitioner for the construction of Mtwalume Dam and associated infrastructure, Vulamehlo Cross Border Water Scheme, Harry Gwala and Ugu District Municipality, in KwaZulu-Natal.

WALLMANSTHAL PIPELINE – GAUTENG (2013-2014)

Environmental Assessment Practitioner for a reservoir, pump station and 10.585km, 700mm diameter pipeline from Wallmansthal Reservoir to Baviaanspoort Reservoir, City of Tshwane, in Gauteng.

FET COLLEGES FOR THE DEPARTMENT OF HIGHER EDUCATION AND TRAINING – MPUMALANGA AND EASTERN CAPE (2013- 2014)

Environmental Assessment Practitioner for several Further Education and Training (FET) College government developments in Balfour (Mpumalanga), Aliwal North (Eastern Cape), Sterkspruit (Eastern Cape), and Ngqungqushu (Eastern Cape).

ENVIRONMENTAL AUDITING, COMPLIANCE MONITORING

COPPERLEAF GOLF AND COUNTRY ESTATE – GAUTENG (2022)

Environmental Control Officer for auditing of the water use license conditions for the Copperleaf Golf and Country Estate Wastewater Treatment Works in Centurion, Gauteng.

DATA CENTRE - GAUTENG (2021)

Environmental Control Officer for auditing of the environmental authorisation and environmental management programme conditions for a back-up power plant for a data centre, located in Centurion in the Gauteng Province.

ENGEN MODDERFONTEIN FILLING STATION - GAUTENG (2020)

Environmental Control Officer for auditing of the environmental authorisation and environmental management programme conditions for the Engen Modderfontein filling station in the Gauteng Province.

LONGLAKE DEVELOPMENT - GAUTENG (2020)

Environmental Control Officer for auditing of the environmental authorisation and environmental management programme conditions for the Longlake Ext 21 warehouse development in Linbro Park, Gauteng.

HOEDSPRUIT OBARO FILLING STATION - GAUTENG (2020)

Environmental Control Officer for auditing of the environmental authorisation and environmental management programme conditions for the decommissioning and rebuild of the Obaro filling station in Hoedspruit, Limpopo.

ENGEN FILLING STATIONS – SOUTH AFRICA (2019)

Environmental Control Officer for auditing of the environmental authorisations and environmental management programme conditions for a variety of Engen filling station Audits (Gauteng, Limpopo, North West, Mpumalanga and Free State).

EXEMPLAR SHOPPING MALLS – SOUTH AFRICA (2019)

Environmental Control Officer for auditing of the environmental authorisations and environmental management programme conditions for a variety of Exemplar shopping malls (Gauteng, Mpumalanga and Limpopo).

SKY PARK DEVELOPMENT - GAUTENG (2019)

Environmental Control Officer for auditing of the environmental authorisation and environmental management programme conditions for the Sky Park industrial development in Kempton Park, Gauteng.

PARK CENTRAL DEVELOPMENT - GAUTENG (2019)

Environmental Control Officer for auditing of the environmental authorisation and environmental management programme conditions for the Park Central residential units in Rosebank, Gauteng.

CURRICULUM VITAE

PAUL FURNISS

ENVIRONMENTAL ADVISOR / ENVIRONMENTAL ASSESSMENT PRACTITIONER

BACKGROUND

Paul is a Director of ABS Africa. He has 19 years environmental assessment and management experience in the energy, water, mining and infrastructure sectors. His project experience includes conducting environmental assessment studies in South Africa, Morocco, Guinea, Lesotho, Democratic Republic of Congo, Sudan, Namibia, Botswana, Zimbabwe, and Mozambique.

In the role of environmental manager, he has been responsible for the setup and auditing of environmental construction management procedures for a range of developments. Having led various environmental due diligence assessments for mining clients and project financiers, he has a good understanding of international environmental governance requirements including Equator Principles and IFC Performance Standards.

FIELDS OF COMPETENCE

- Environmental and Social Impact Assessments for the energy, water, mining, and infrastructure sectors
- Integration of environmental management principles into EPCM activities throughout the project lifecycle
- Environmental risk and screening assessments
- Environmental permitting
- Environmental auditing
- Environmental due diligence studies
- Strategic environmental assessment
- Integrated waste management

ACADEMIC QUALIFICATIONS

- Bachelor of Agricultural Science in Animal Science: University of Pretoria, 1998
- Bachelor of Science (Honours) in Wildlife Management: University of Pretoria, 1999
- Master of Science in Environmental Science (Water Resource Management): University of Pretoria, 2000

PROFESSIONAL REGISTRATION

Pr.Sci.Nat. Professional Natural Scientist (Environmental Science): The South African Council for Natural Scientific Professions, 2007

Registered Environmental Assessment Practitioner: Environmental Assessment Practitioners Association of South Africa

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT STUDIES

TIZERT PROJECT – MOROCCO (2020 – PRESENT)

Lead Environmental Assessment Practitioner for an IFC-compliant ESIA for a greenfields copper mining project in the Taroudant Province of Morocco.

KRANSpan PROJECT – SOUTH AFRICA (2018 - 2020)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and integrated water use licence for a proposed surface and underground coal mine, near Carolina in the Mpumalanga Province.

NORTHERN CAPE PROSPECTING – SOUTH AFRICA (2018 - 2020)

Environmental Assessment Practitioner for three environmental authorisation processes in support of prospecting right applications, near Copperton and Marydale in the Northern Cape Province.

ZANDVOORT IWULA PROJECT – SOUTH AFRICA (2018 - 2020)

Environmental Assessment Practitioner for an integrated water use licence application (IWULA) for a proposed opencast coal mine near Carolina in the Mpumalanga Province.

PRIESKA ZINC COPPER PROJECT – SOUTH AFRICA (2017-PRESENT)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and integrated water use licence for the proposed re-establishment of the Prieska Copper Mine, near Copperton in the Northern Cape Province.

TRI-K GOLD PROJECT – GUINEA (2017-2018)

Environmental Assessment Practitioner for an IFC-compliant ESIA for a greenfields gold mining project in the Mandiana Prefecture of Guinea.

LENASIA SOUTH HOSPITAL PROJECT – SOUTH AFRICA (2016)

Environmental Assessment Practitioner for an environmental authorisation, waste management license and atmospheric emission license for the conversion of a community health centre into a Level 1 District Hospital.

SPRINGS FRESH PRODUCE MARKET EXPANSION PROJECT – SOUTH AFRICA (2016-2017)

Environmental Assessment Practitioner for an environmental authorisation for the expansion of the Springs Fresh Produce Market.

MORUPULE B UNITS 5 & 6 – BOTSWANA (2015-2016)

Specialist consultant for a JBIC and IFC compliant ESIA for a 300 MW thermal coal power plant.

EDF PROJECT TIZERT – MOROCCO (2015-2016)

Technical advisory services for an IFC-compliant ESIA for a copper mine and associated facilities in the Taroudant Province.

PUMPI COPPER AND COBALT PROJECT – DEMOCRATIC REPUBLIC OF CONGO (2014 – 2016)

Project Environmental Manager responsible for a comprehensive update of the Environmental Impact Study for an open-cast copper and cobalt mine, process plant and associated infrastructure.

HASSAÏ VMS PROJECT – SUDAN (2014 – 2015)

Lead consultant responsible for the legal register, review and gap analysis of environmental and social aspects for a gold mining and processing prefeasibility study at the Hassaï Mine.

THUSANANG HOUSING PROJECT – SOUTH AFRICA (2013)

Project Environmental Manager for the EIA and EMP for a 4000 unit residential 1 housing development for Anglo American Platinum, Rustenburg Local Municipality and the Department of Human Settlements.

MANGANESE PROJECT – BURKINA FASO AND CÔTE D'IVOIRE (2013)

Environmental coordinator for a prefeasibility study for a proposed mine, port and rail project for the export of Manganese from Burkina Faso to the Port of Abidjan.

MINERAL SANDS PROJECT – MOZAMBIQUE (2012)

Environmental programme manager responsible for establishing and coordinating all social and environmental studies for a pre-feasibility study for a large mineral sands project in Mozambique.

CONFIDENTIAL PROJECT – MOZAMBIQUE (2012)

Project Environmental Manager responsible for the preparation of environmental and social design criteria and high-level comparison of different rail alignment and port location options for a coal export project.

LANDAU LIFEX PROJECT - SOUTH AFRICA (2012)

Project Environmental Manager responsible for the compilation of non-mineral waste management plan and hazardous substances plan as part of a pre-feasibility study for Anglo American Thermal Coal.

CONFIDENTIAL PROJECT – SOUTH AFRICA (2011-2012)

Project Environmental Manager for a pre-feasibility study for the development of a new iron and steel plant in South Africa including all associated infrastructure. Inputs included a multi-criteria site selection analysis and coordination of all environmental and social assessment inputs to the study.

NATIONAL INTEGRATED RESOURCE PLAN – NAMIBIA (2011)

Environmental advisor responsible for the assessment and description of the environmental and social issues associated with primary and secondary generation options.

150 MW WIND FARM PROJECT – LESOTHO (2011)

Project Environmental Manager responsible for the management and coordination of all environmental studies and environmental approval processes required for a 150 MW wind farm development in the Lesotho Highlands.

TRANSNET CAPITAL EXPANSION PROGRAMME – SOUTH AFRICA (2008-2011)

Mobilised as a full-time Environmental Manager for the Richards Bay region for the HMG-Joint Venture. The latter was established as the EPCM agent for the Transnet Capital Projects operating division of Transnet Limited. The role involved management and coordination of numerous environmental studies throughout the project lifecycle process including an environmental resource economic study for the Port of Richards Bay, environmental authorisation processes and fatal flaw assessments.

NUCLEAR 1 PROJECT – SOUTH AFRICA (2008)

Senior Project Scientist for the EIA and EMP for the proposed construction of a conventional nuclear power station and associated infrastructure in the Western Cape.

PEBBLE-BED MODULAR REACTOR DEMONSTRATION POWER PLANT PROJECT – SOUTH AFRICA (2007-2008)

Project Manager and Senior Project Scientist for the Impact Assessment Phase of the EIA and EMP for the proposed Pebble Bed Modular Reactor Demonstration Power Plant in the Western Cape.

600 MW MORUPULE B POWER STATION PROJECT – BOTSWANA (2008)

Team Leader for the 600 MW Morupule B coal-fired power station in Botswana. Compilation of the ESIA in a manner that complied with Botswana legislation and World Bank Group requirements.

INGULA PUMPED STORAGE SCHEME – SOUTH AFRICA (2007)

Project Manager for seven mining permit applications for borrowpits in the Free State and KwaZulu-Natal Provinces for the Ingula (previously Braamhoek) Pumped Storage Scheme Project.

GABORONE WASTEWATER RECLAMATION PROJECT – BOTSWANA (2007)

Senior Project Scientist for the Gaborone Wastewater Reclamation EIA. This project was aimed at determining the feasibility of reclaiming wastewater for direct potable reuse in Gaborone and its satellite villages.

SELEBI-PHIKWE WATER MASTER PLAN – BOTSWANA (2006)

Senior Project Scientist for the EIA, EMP and Public Consultation Process for the Selebi-Phikwe Water Master Plan.

HYDRA-PERSEUS 765KV POWER LINE EIA – SOUTH AFRICA (2007)

Senior Project Scientist for the EIA for the 260 km 765 kV transmission power line from the Hydra to Perseus Substations.

ENVIRONMENTAL MANAGEMENT, COMPLIANCE MONITORING AND REGULATION

DINGLETON RESETTLEMENT PROJECT – SOUTH AFRICA (2014)

Project Environmental Control Officer responsible for compilation of an Environmental Execution Plan for the Feasibility Study and the setup and implementation of the environmental compliance monitoring requirements for the project implementation phase.

DEA COMPLIANCE MONITORING PROJECT - SOUTH AFRICA (2007)

Task Team Leader for the Department of Environmental Affairs (DEA) Compliance Monitoring Project. The project involved the development of guidelines, systems and programmes for the Compliance Monitoring Directorate of DEA including compilation of a guideline for Emergency Incident reporting in terms of section 30 of the National Environmental Management Act, 1998 (Act 107 of 1998) and a compliance monitoring protocol for environmental authorisations.

JOHANNESBURG CITY PARKS GENERIC EMP - SOUTH AFRICA (2006)

Project Manager and Senior Project Scientist for the Generic EMP for Johannesburg City Parks (JCP). The Generic EMP was developed as a tool for managing the activities of all contractors employed to undertake construction work in the Public Open Spaces within the jurisdiction of the JCP.

ENVIRONMENTAL AUDITS AND DUE DILIGENCE

CONFIDENTIAL PROJECT – NAMIBIA (2020)

Technical due diligence of environmental risks, permitting, closure liabilities and IFC gap analysis for a mine asset in Namibia.

CONFIDENTIAL PROJECT – SOUTH AFRICA (2019)

Technical due diligence of environmental risks, permitting, closure liabilities and IFC gap analysis of a mineral processing facility and associated mine in South Africa.

CONFIDENTIAL PROJECT – SOUTH AFRICA (2018)

Technical due diligence of environmental risks, permitting and closure liabilities associated with two coal mine assets in South Africa.

CONFIDENTIAL PROJECT – SOUTH AFRICA (2017)

Technical due diligence of environmental risks and closure liabilities associated with several operating gold and coal mine assets in South Africa.

CHROME ASSET ACQUISITION – SOUTH AFRICA (2016)

Technical due diligence review of an existing chrome washing facility. The due diligence required identification of environmental and social risks, a review of all existing environmental licenses and consideration of rehabilitation and closure liabilities.

CONFIDENTIAL PROJECT – GUINEA (2012)

Environmental specialist responsible for advising on environmental risks associated with a potential project acquisition of an iron ore resource in West Africa.

SOLAR ENERGY FACILITY – SOUTH AFRICA (2012)

Environmental specialist for a lender's technical due diligence review against local regulations, International Finance Corporation performance standards and Equator Principles for a proposed 30 MW solar energy facility in the Western Cape Province.

WIND ENERGY FACILITY – SOUTH AFRICA (2012)

Environmental specialist for a technical due diligence review against local regulations, International Finance Corporation performance standards and Equator Principles for a proposed new wind energy facility in the Western Cape Province.

FINANCIAL PROVISION FOR MINE REHABILITATION AND CLOSURE

ILIMA COAL COMPANY- SOUTH AFRICA (2019 AND 2020)

Review of estimate of mine rehabilitation and closure cost for a coal mine.

HLAGISA MINING – SOUTH AFRICA (2019 AND 2020)

Review of estimate of mine rehabilitation and closure cost for a coal mine.

PRIESKA ZINC COPPER PROJECT (VARDOCUBE SECTION) – SOUTH AFRICA (2019)

Estimate of mine rehabilitation and closure cost for a greenfields underground mine.

PRIESKA ZINC COPPER PROJECT – SOUTH AFRICA (2018)

Estimate of mine rehabilitation and closure cost for a greenfields surface and underground mine.

SUSTAINABILITY REPORTING

SASOL LIMITED SUSTAINABILITY ASSURANCE PROJECT – SOUTH AFRICA (2009)

Project Manager for the 2009 sustainability reporting assurance engagement for Sasol Limited. The engagement consisted of assuring sustainable performance data from health and safety, environmental and social indicators. Site audits were undertaken at numerous operational sites representative of Sasol's different business units.

ANGLO AMERICAN PLC SUSTAINABILITY ASSURANCE PROJECT – VARIOUS COUNTRIES (2009)

Project Manager for the 2009 sustainability reporting assurance engagement for Anglo American plc. This assurance engagement comprised of site audits at representative operations within Anglo Platinum, Kumba Iron Ore, Scaw, Anglo Coal and Tarmac. The site audits were undertaken in South Africa, Brazil, Chile, Australia and the United Kingdom with twenty sustainability indicators in key performance areas of human capital, natural capital and social capital.

STRATEGIC ENVIRONMENTAL ASSESSMENTS

SEA FOR THE PORT HARCOURT MASTERPLAN – NIGERIA (2008)

Project Manager and Senior Project Scientist for the Strategic Environmental Assessment of the Masterplan for the city of Port Harcourt. The Masterplan was to provide for the development of a new city, appropriately designed for the current and future population of the existing Port Harcourt.

SEA FOR ELECTRICITY DISTRIBUTION INFRASTRUCTURE FOR THE MAGALIESBERG AND SURROUNDING AREAS - SOUTH AFRICA (2007)

Project Manager and Senior Project Scientist for the Strategic Environmental Assessment of the Magaliesberg and Surrounding Areas for Eskom Distribution. The SEA considered the environmental attributes of the study area and provided an environmental planning framework specific to the needs of Eskom Distribution.

SEA FOR HERITAGE PARK - SOUTH AFRICA (2006)

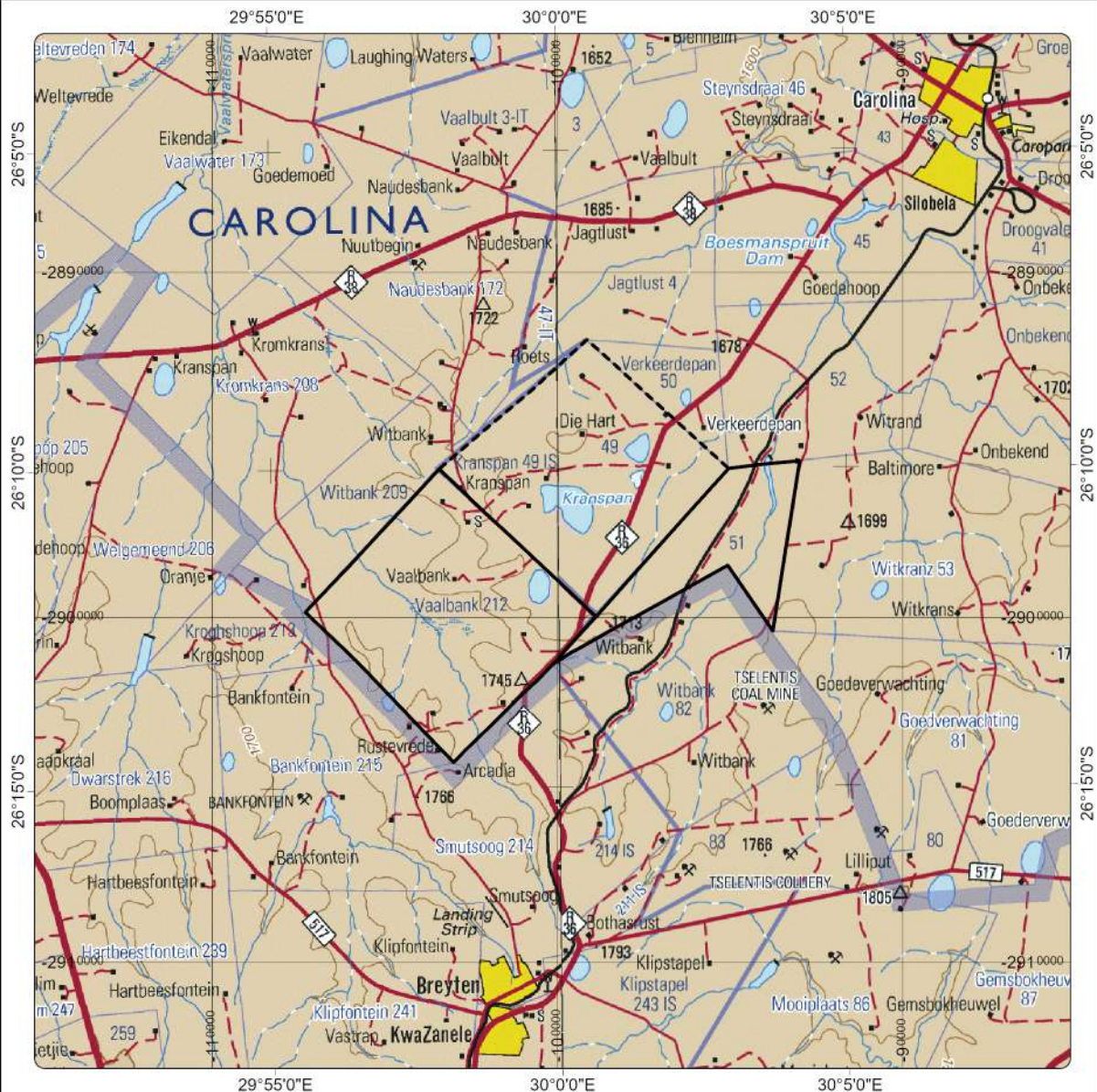
Senior Project Scientist for the Strategic Environmental Assessment of the one million ha Heritage Park. This ecologically sensitive and socio-economically complex Park encompasses Pilansberg and Madikwe Nature Reserve and crosses the border between South Africa and Botswana.

APPENDIX 3: MAPS

MAP 1: REGIONAL LOCALITY

Kranspan Mining Right Extension

Locality



LEGEND

-  Existing Kranspan MRA
-  Proposed MRA Extension Areas



Scale: 1:200 000
WG31

Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

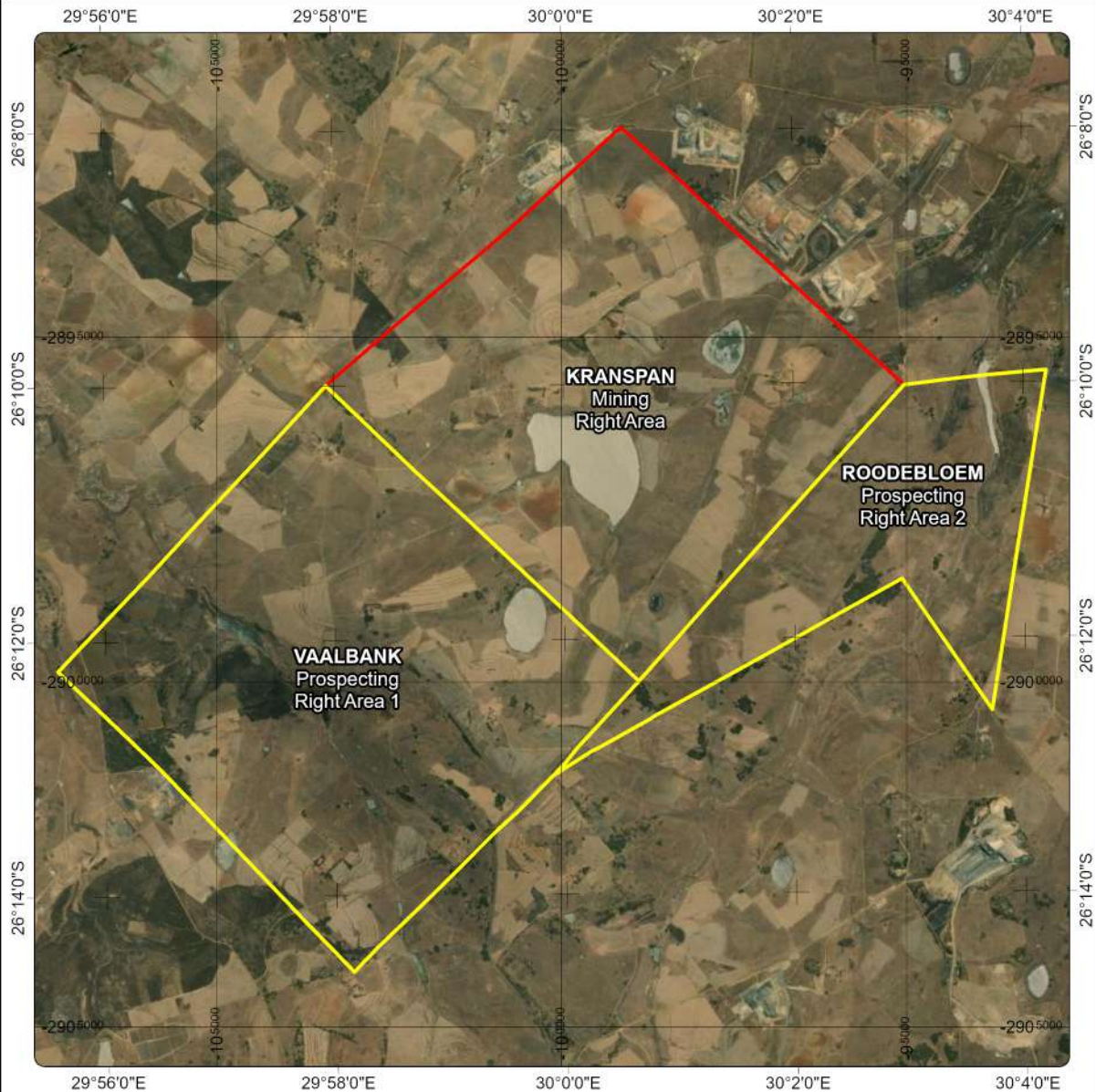
Date: 2022/10/09

Map ID: 107-020-01

MAP 2: AERIAL LOCALITY

Kranspan Mining Right Extension

Mining Right Extension



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

-  Existing Kranspan MRA
-  Proposed MRA Extension Areas



Scale: 1:100 000
WG31

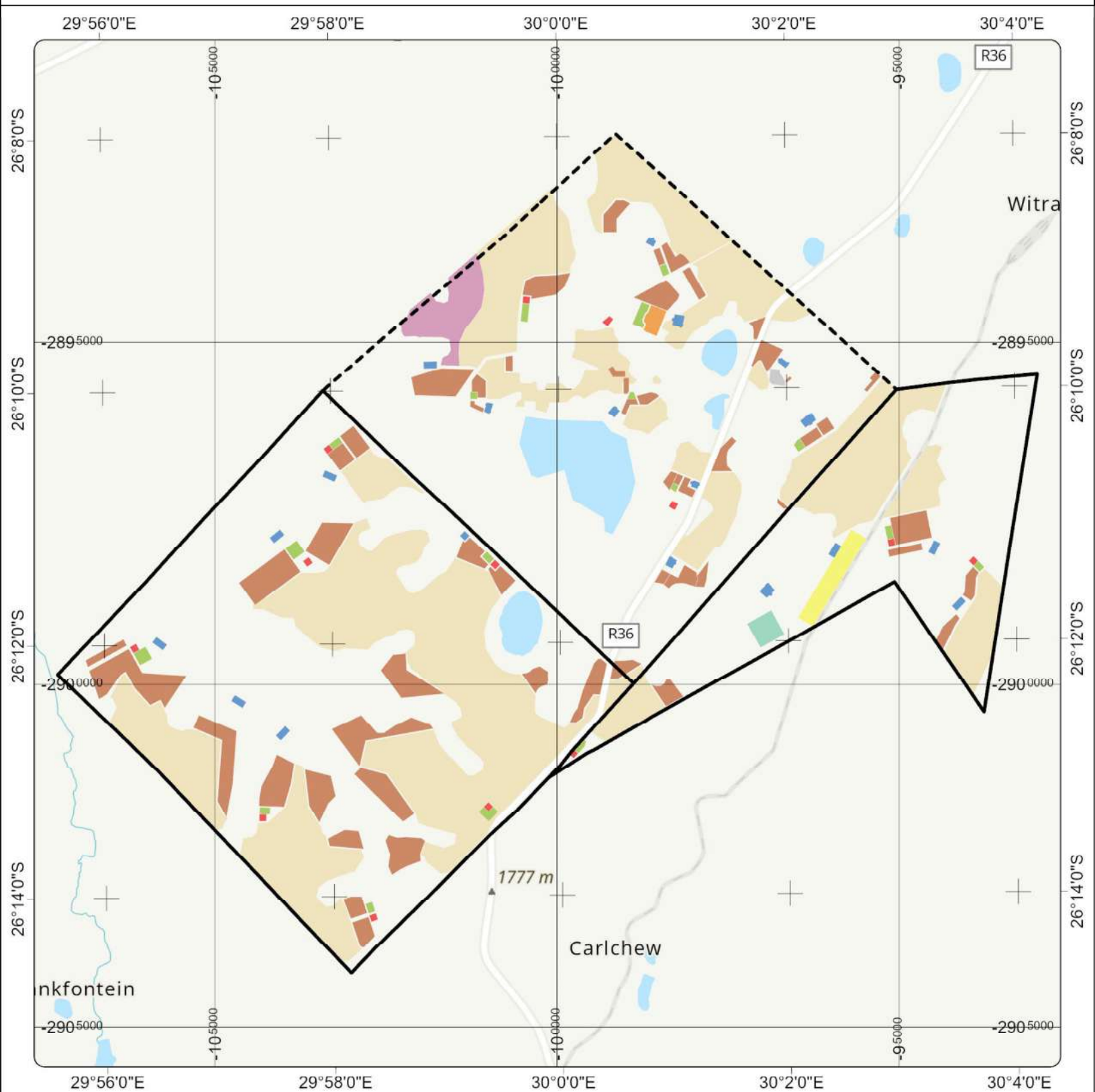
Date: 2022/10/10

Map ID: 107-020-18

MAP 3: LAYOUT PLAN

Kranspan Mining Right Extension

Layout

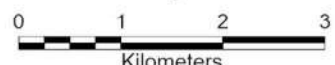


Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Contractors Yard
- Office & Workshops
- Opencast
- Overburden Stockpile
- PCD
- Plant & Loading
- ROM Stockpile
- Siding
- Underground
- Wash Plant



Scale: 1:100 000
WG31

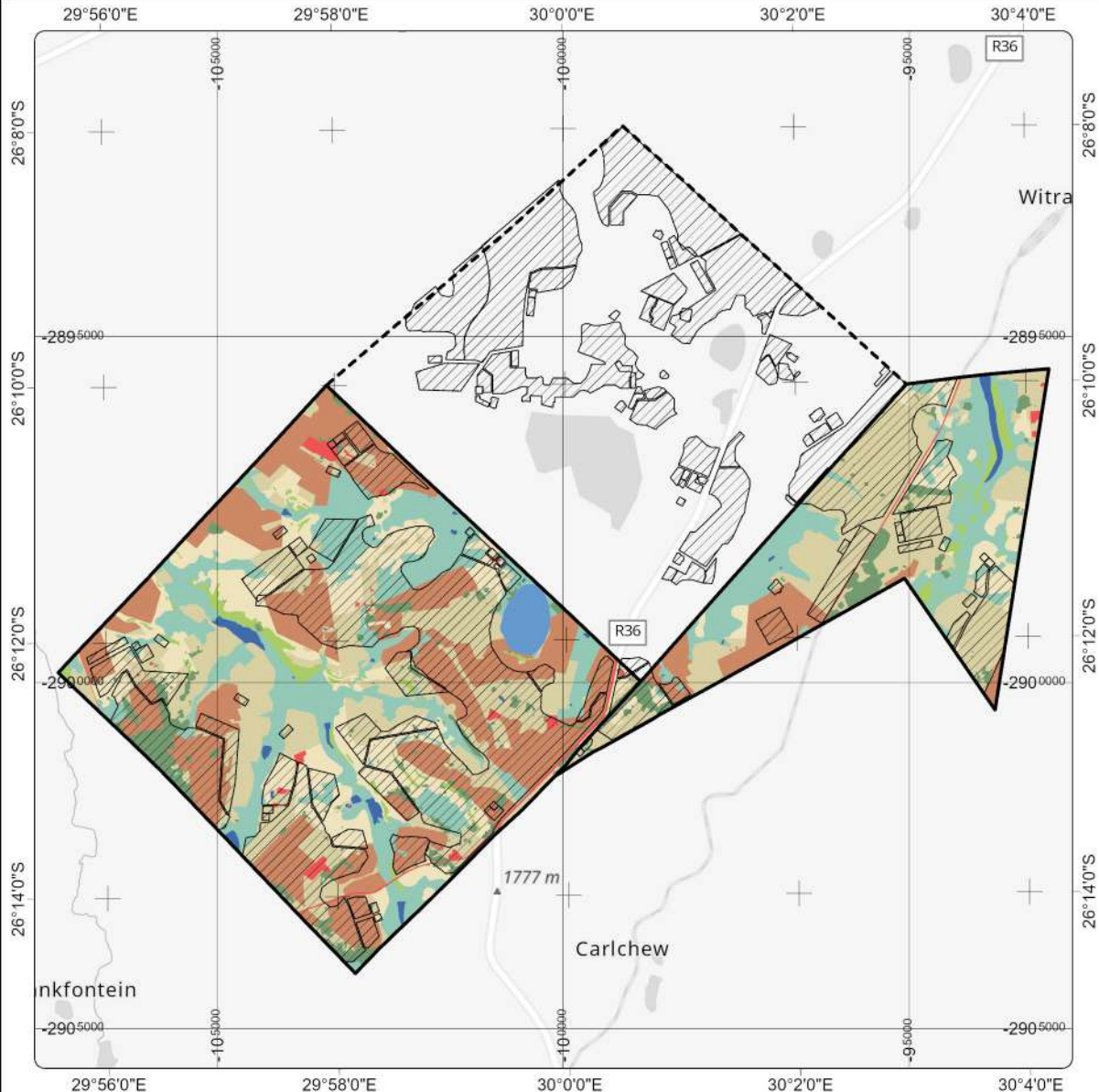
Date: 2023/03/17

MAP 4: SURROUNDING LANDOWNERS AND LANDUSERS

MAP 5: ENVIRONMENTAL SENSITIVITY MAPS

Kranspan Mining Right Extension

Vegetation Communities



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- | | |
|------------------------------|-------------------------------|
| Existing Kranspan MRA | Infrastructure |
| Proposed MRA Extension Areas | Pan Wetland |
| Layout | Sandstone Scarp Shrubland |
| Alien trees | Secondary vegetation |
| Current Cultivation | Untransformed Grassland |
| Dams | Valley-Bottom & Seep Wetlands |



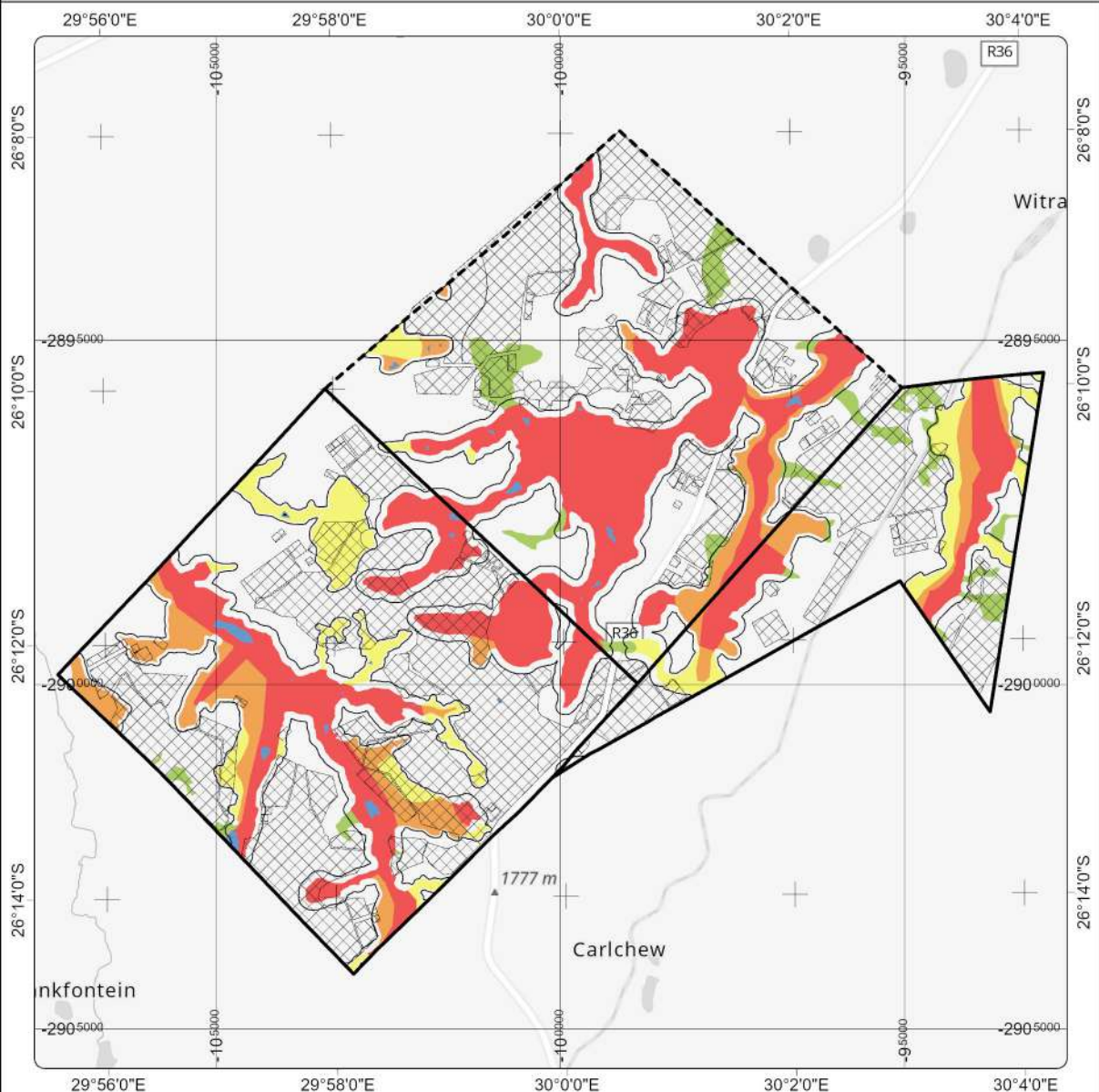
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WG31

Date: 2023/03/16

Map ID: 107-020-34-v6

Kranspan Mining Right Extension

Wetlands Sensitivity



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- | | |
|------------------------------|---------------------------------|
| Existing Kranspan MRA | 1 - Priority Wetlands |
| Proposed MRA Extension Areas | 2 - Secondary Priority Wetlands |
| Layout | 3 - Tertiary Priority Wetlands |
| Wetland Buffers | 4 - Low Priority Wetlands |
| Artificial | 5 - High Priority Wetlands |



0 1 2 3
Kilometers

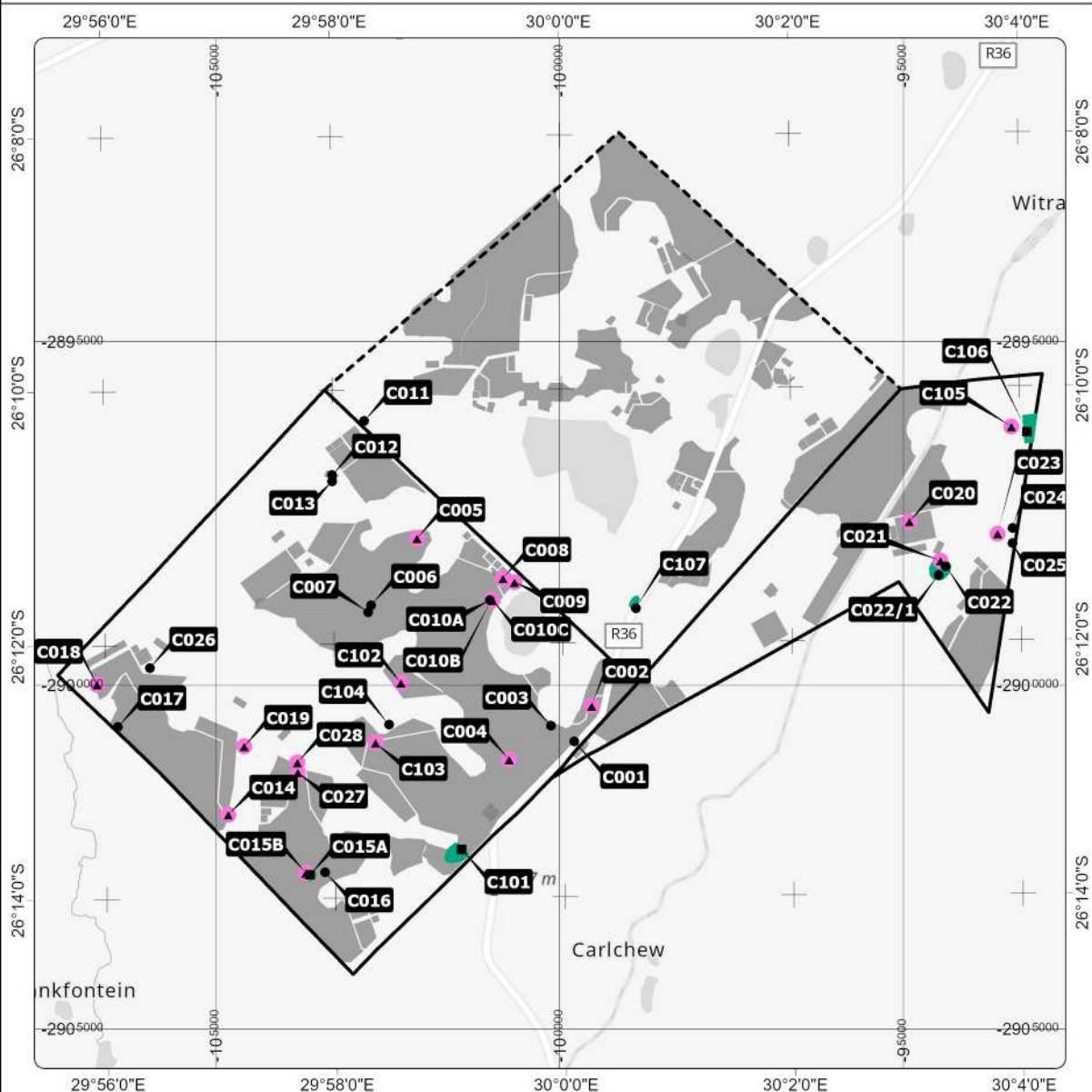
Scale: 1:100 000
WG31

Date: 2023/03/16

Map ID: 107-020-33-v4

Kranspan Mining Right Extension

Heritage Sensitivity



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Heritage Localities
 - Farmstead
 - Graves
 - Ruins/Historical Structures
 - Heritage Areas around Points
 - 100m Burial Site Buffer
 - Layout



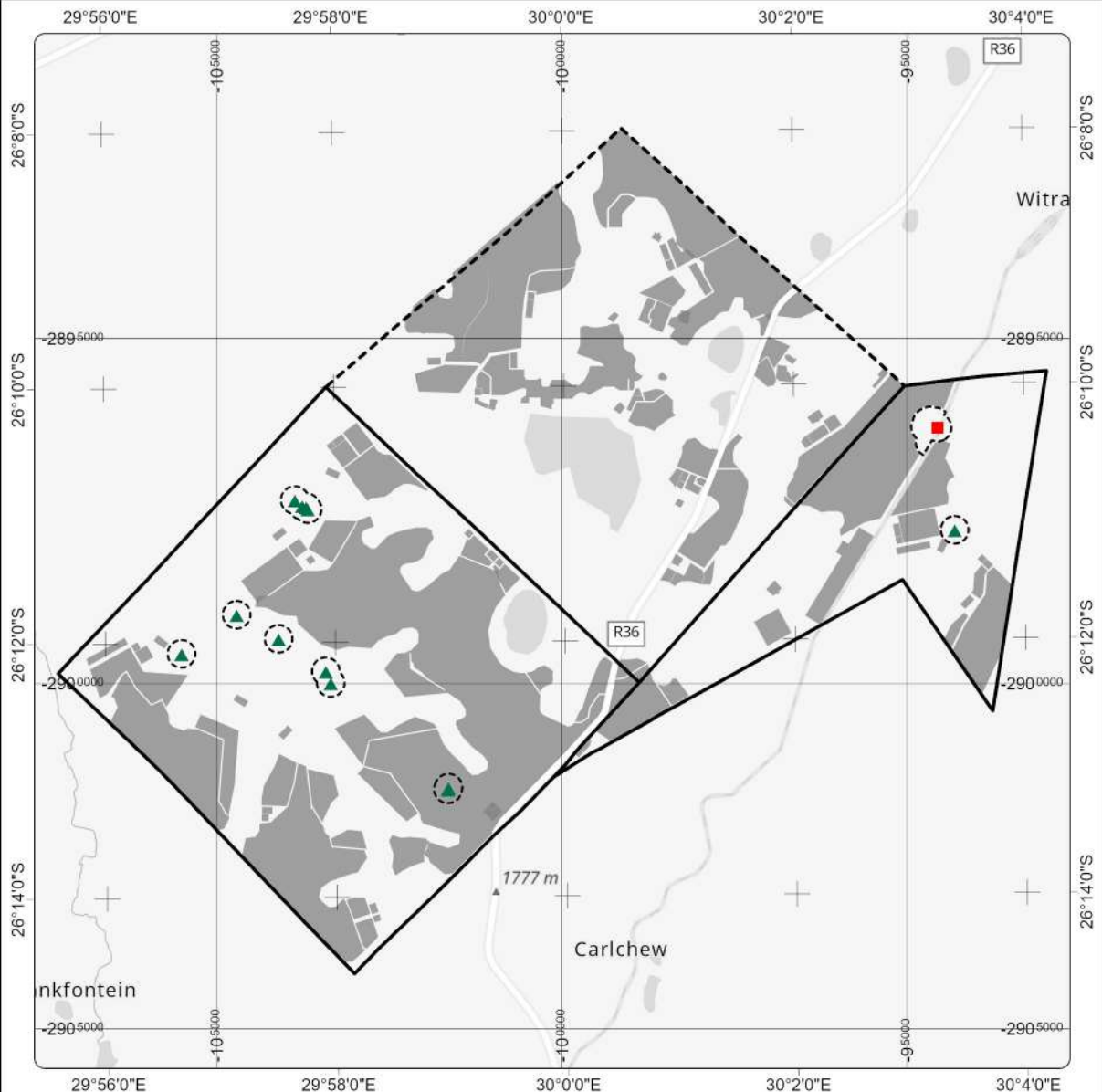
Scale: 1:100 000
WG31

Date: 2023/03/16

Map ID: 107-020-30-v4

Kranspan Mining Right Extension

Plant Species of Conservation Concern



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Layout
- Buffer
- Species of Conservation Concern
 - Endangered Plant Species
 - Khadia carolinensis



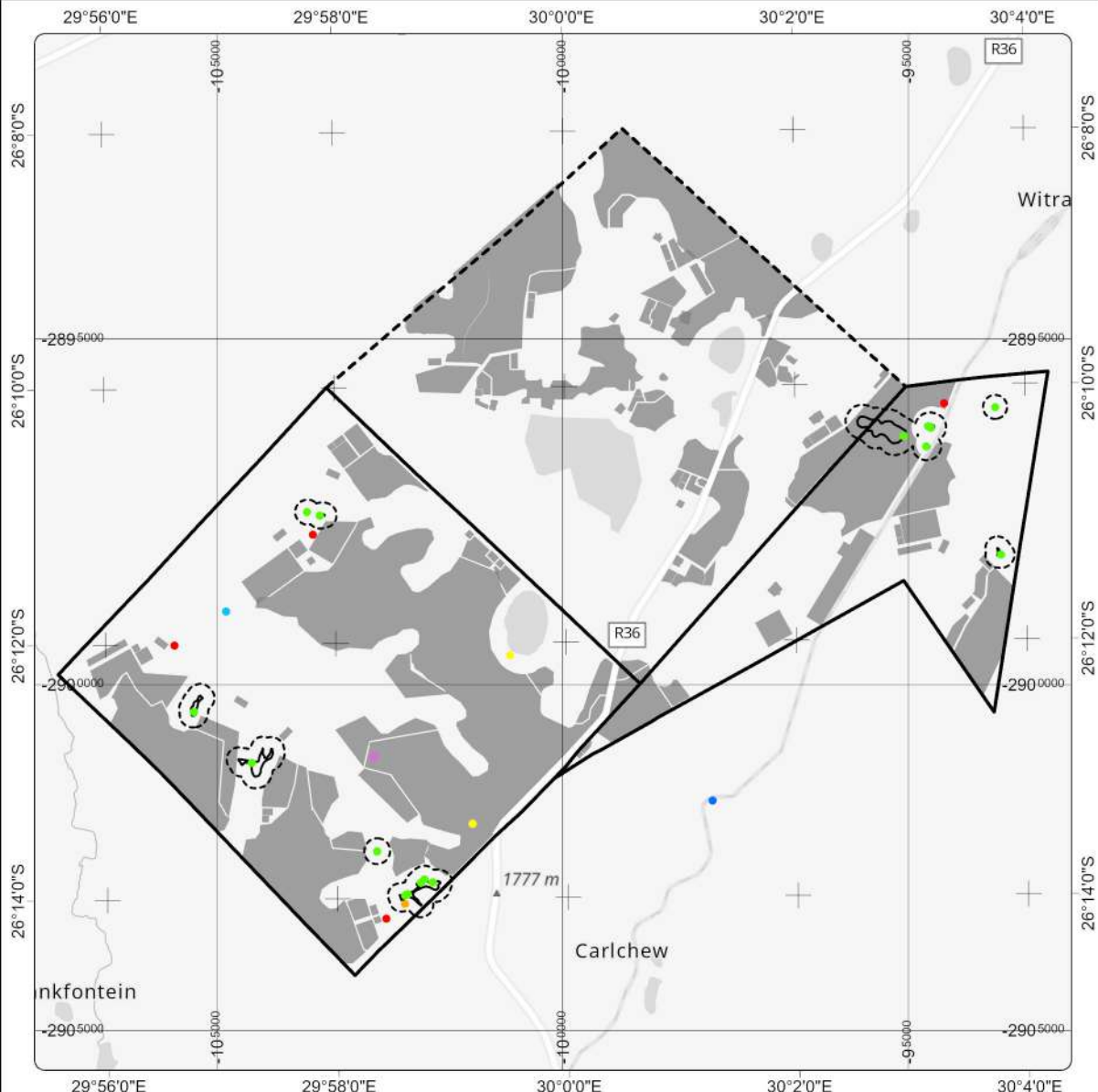
Scale: 1:100 000
WG31

Date: 2023/03/16

Map ID: 107-020-37-v5

Kranspan Mining Right Extension

Fauna Sensitivity



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

Mammals

- Cape Clawless Otter (*Aonyx capensis*) - Globally Near Threatened
- Mountain Reedbuck (*Redunca fulvorufula*) - Globally Endangered
- Serval (*Leptailurus serval*) - Regionally/Nationally Near Threatened
- Vlei Rat (*Otomys auratus*) - Globally Near Threatened

Birds

- African Grass-owl (*Tyto capensis*) - Regionally/Nationally Vulnerable
- Blue Korhaan (*Eupodotis carulescens*) - Globally Near Threatened
- Denham's Bustard (*Neotis denhami*) - Regionally/Nationally Vulnerable
- Owl Habitats
- Owl Habitats 170m Buffer



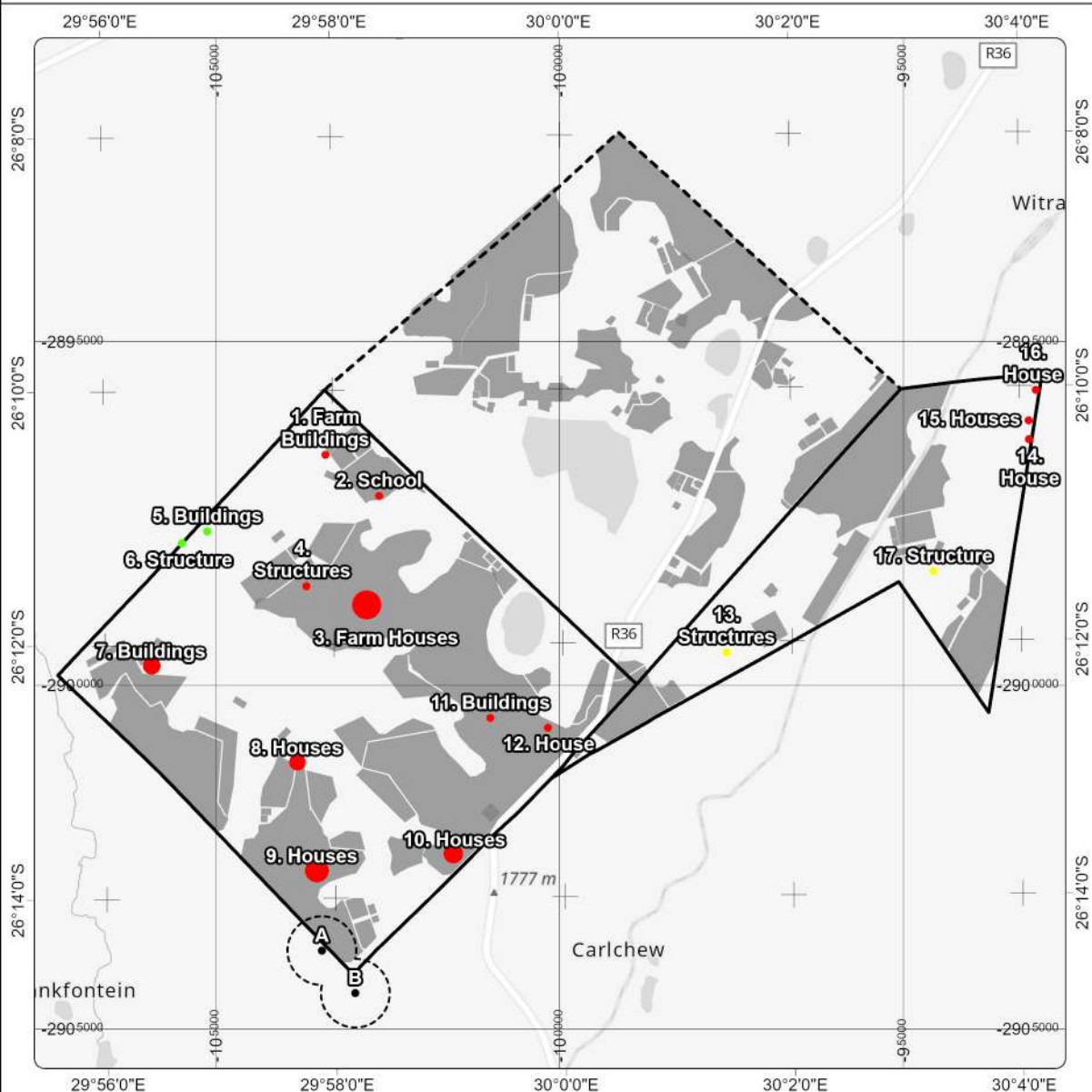
Scale: 1:100 000
WG31

Date: 2023/03/22

Map ID: 107-020-35-v3

Kranspan Mining Right Extension

Sensitive Receptors



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Sensitivity
 - Very High
 - High
 - Low
- Outside MR
- 500m Buffer
- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Layout

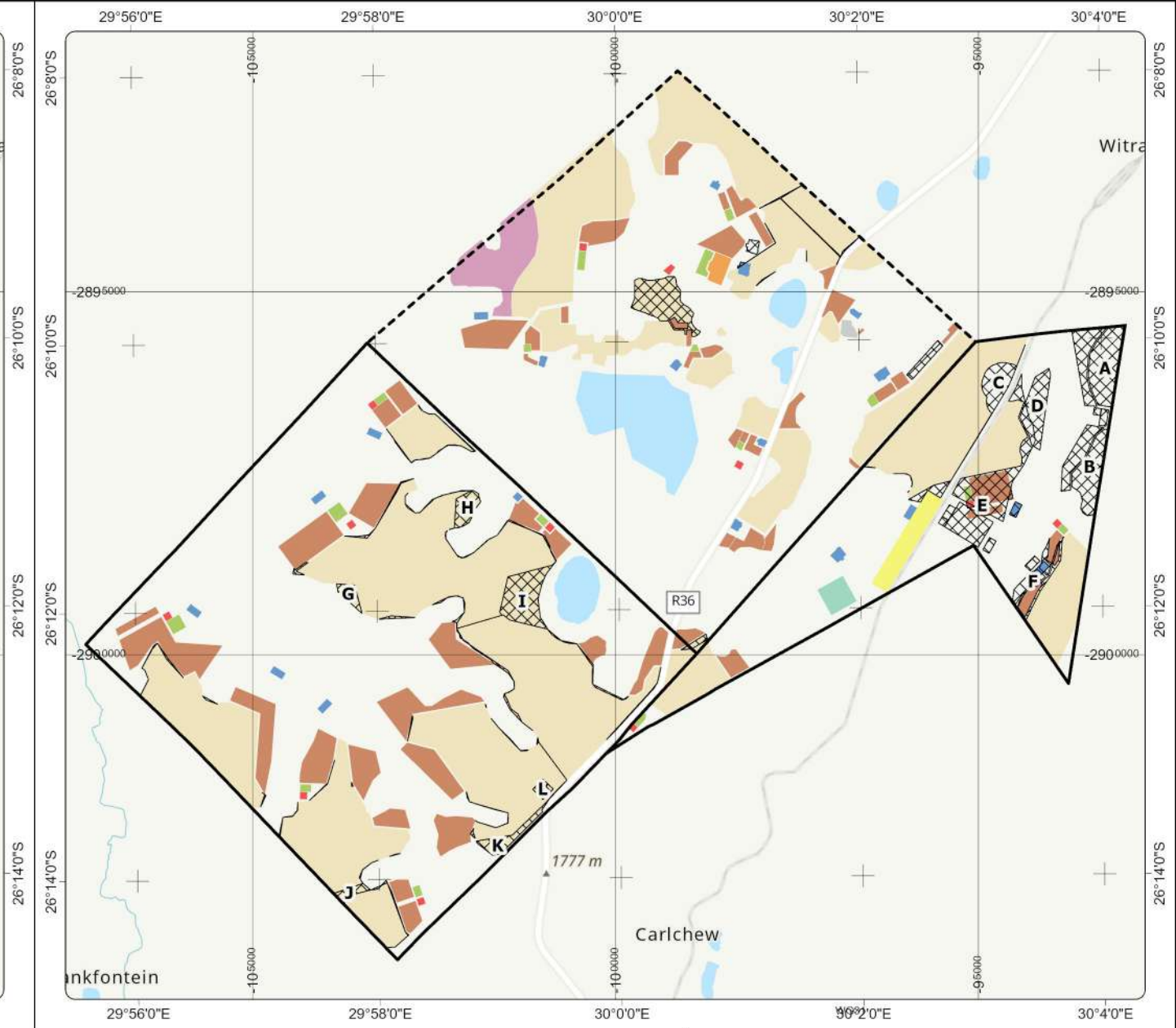
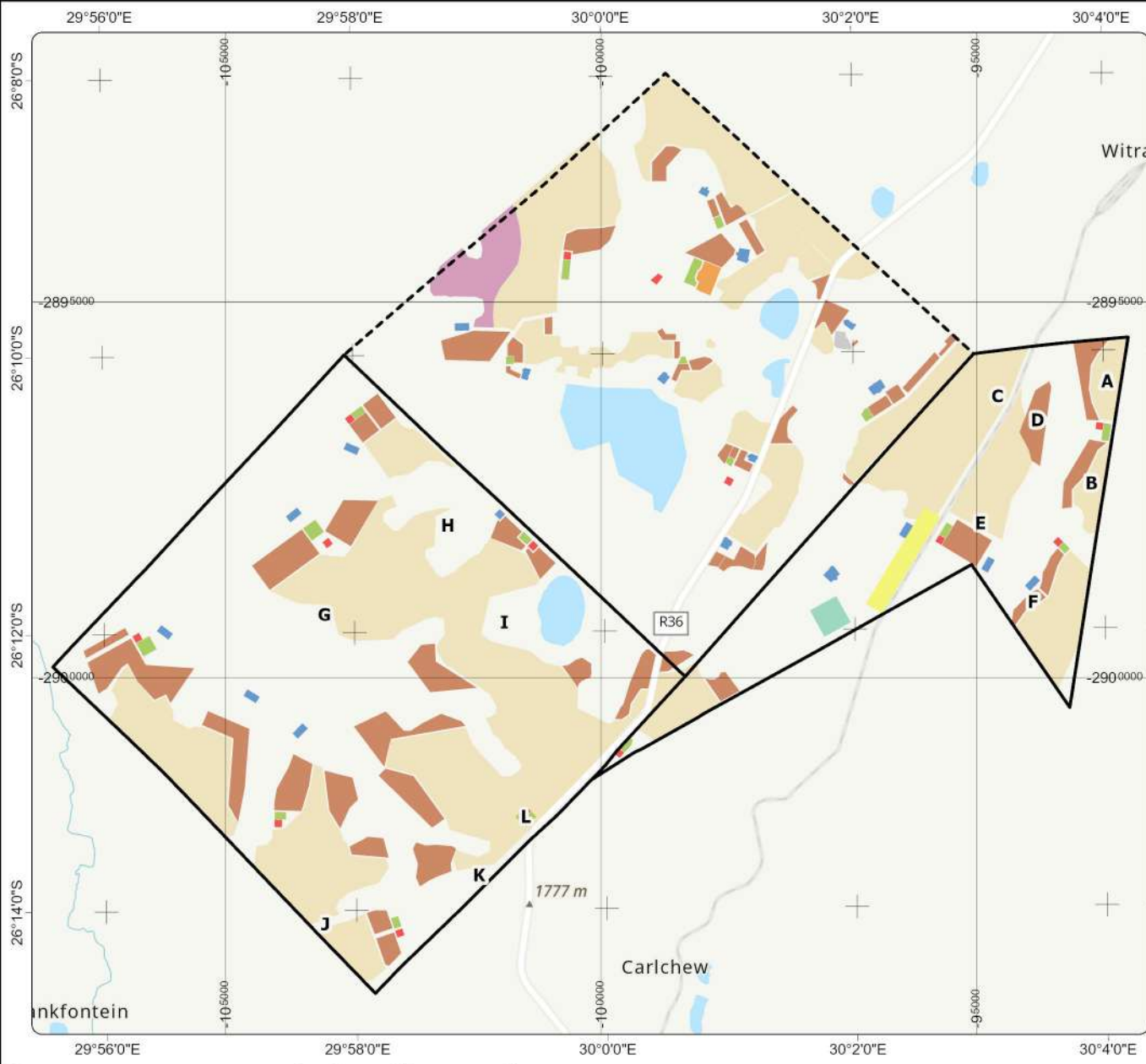


Scale: 1:100 000
WG31

Date: 2023/03/16

Map ID: 107-020-36-v2

MAP 6: LAYOUT PLAN COMPARISON



Kranspan Mining Right Extension

Previous Layout

Current Layout

- LEGEND**
- Existing Kranspan MRA
 - Proposed MRA Extension Areas
 - Contractors Yard
 - Office & Workshops
 - Opencast
 - Overburden Stockpile
 - PCD
 - Plant & Loading
 - ROM Stockpile
 - Siding
 - Underground
 - Wash Plant

- LEGEND**
- Existing Kranspan MRA
 - Proposed MRA Extension Areas
 - Difference
 - Contractors Yard
 - Office & Workshops
 - Opencast
 - Overburden Stockpile
 - PCD
 - Plant & Loading
 - ROM Stockpile
 - Siding
 - Underground
 - Wash Plant



Scale: 1:85 000

Map ID: 107-020-40-v6

Date: 2023/03/20

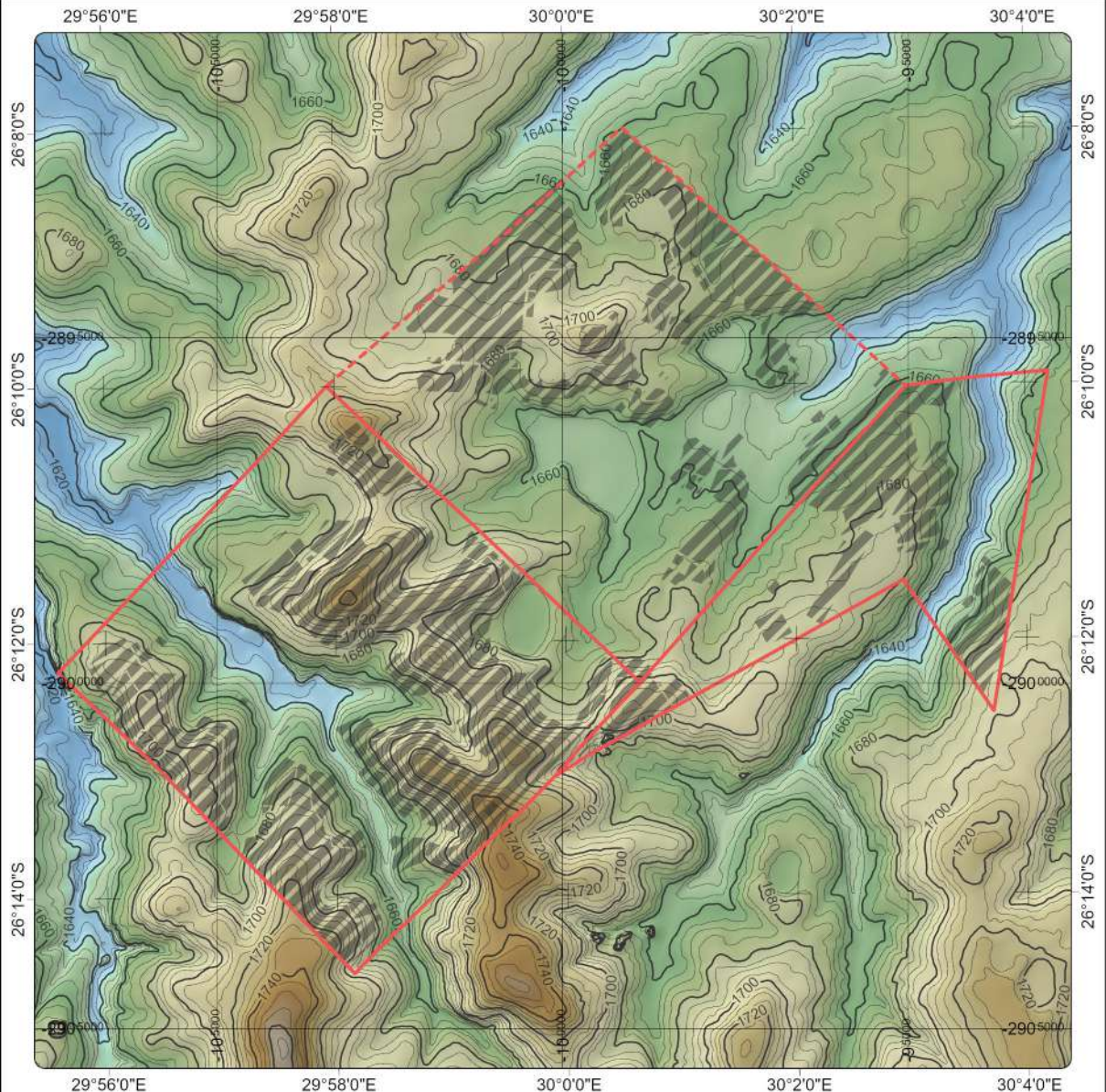
Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

MAP 7: TOPOGRAPHY

Kranspan Mining Right Extension







Topography

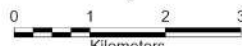


Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

-  Existing Kranspan MRA
-  Proposed MRA Extension Areas
-  Mining Layout
-  Major Contour
-  Minor Contour
- Elevation (m) above MSL
-  1765.99
1615.58



Scale: 1:100 000
WG31

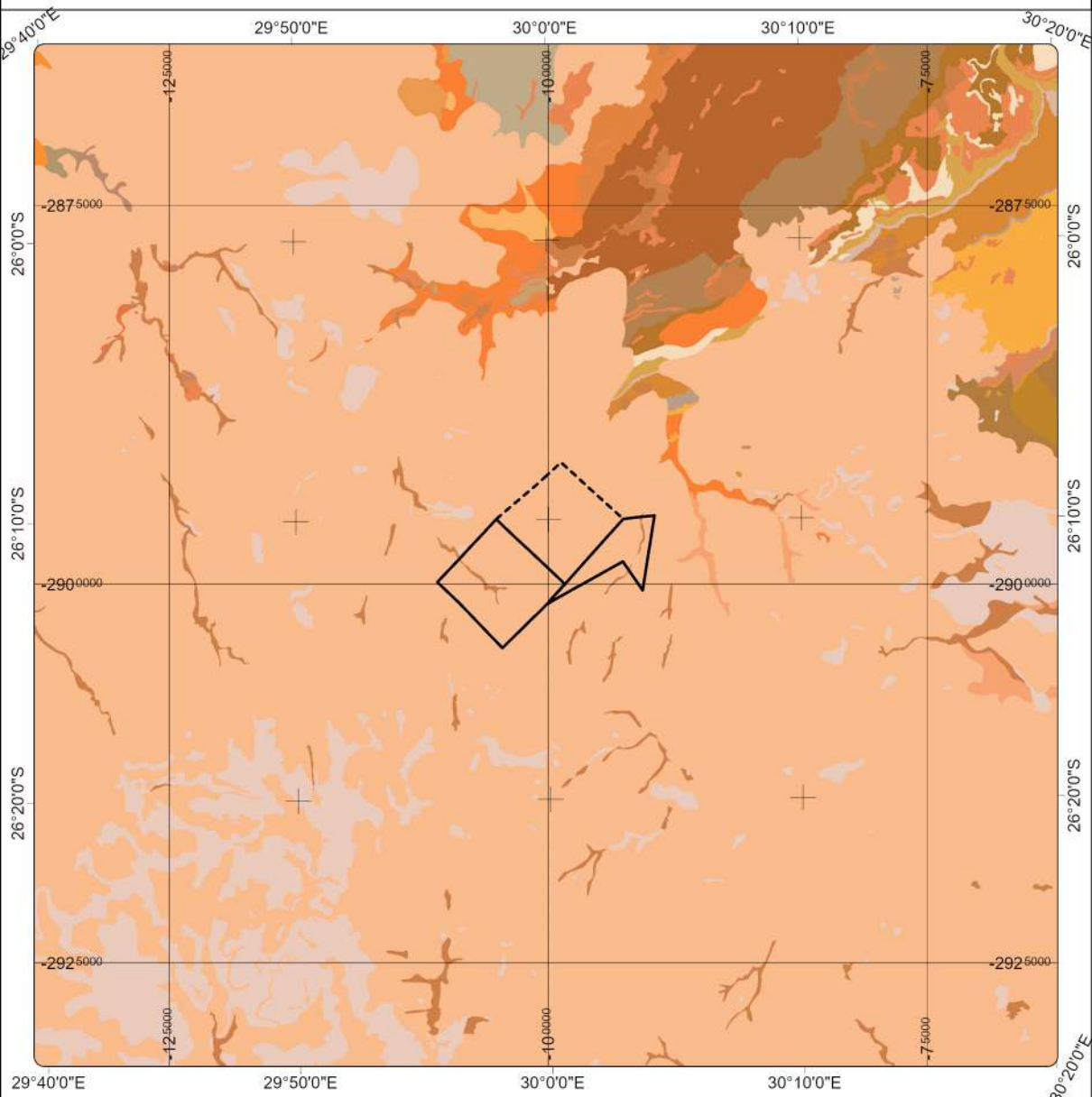
Date: 2023/03/16

Map ID: 107-020-09-v2

MAP 8: GEOLOGY

Kranspan Mining Right Extension

Geology



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- BLACK REEF
- BOSHOEK
- BOVEN SHALE
- DAMWAL
- DASPOORT
- DULLSTROOM
- DWALHEUWEL
- DWYKA
- HEKPOORT

LEGEND

- | | |
|----------------------|--------------------|
| KAROO DOLERITE | RANDIAN |
| KLAPPERKOP QUARTZITE | RASHOOP GRANOPHYRE |
| KWAGGASNEK | ROOIBERG |
| LAKENVALEI | ROOIHOOGTE |
| LYDENBURG SHALE | SILVERTON |
| MACHADODORP | STEENKAMPSBERG |
| MAGALIESBERG | STRUBENKOP |
| MALMANI | SWAZIAN |
| MPULUZI GRANITE | TIMEBALL HILL |
| ONVERWACHT | VAALIAN |
| QUATERNARY | VRYHEID |



Scale: 1:450 000
WG31

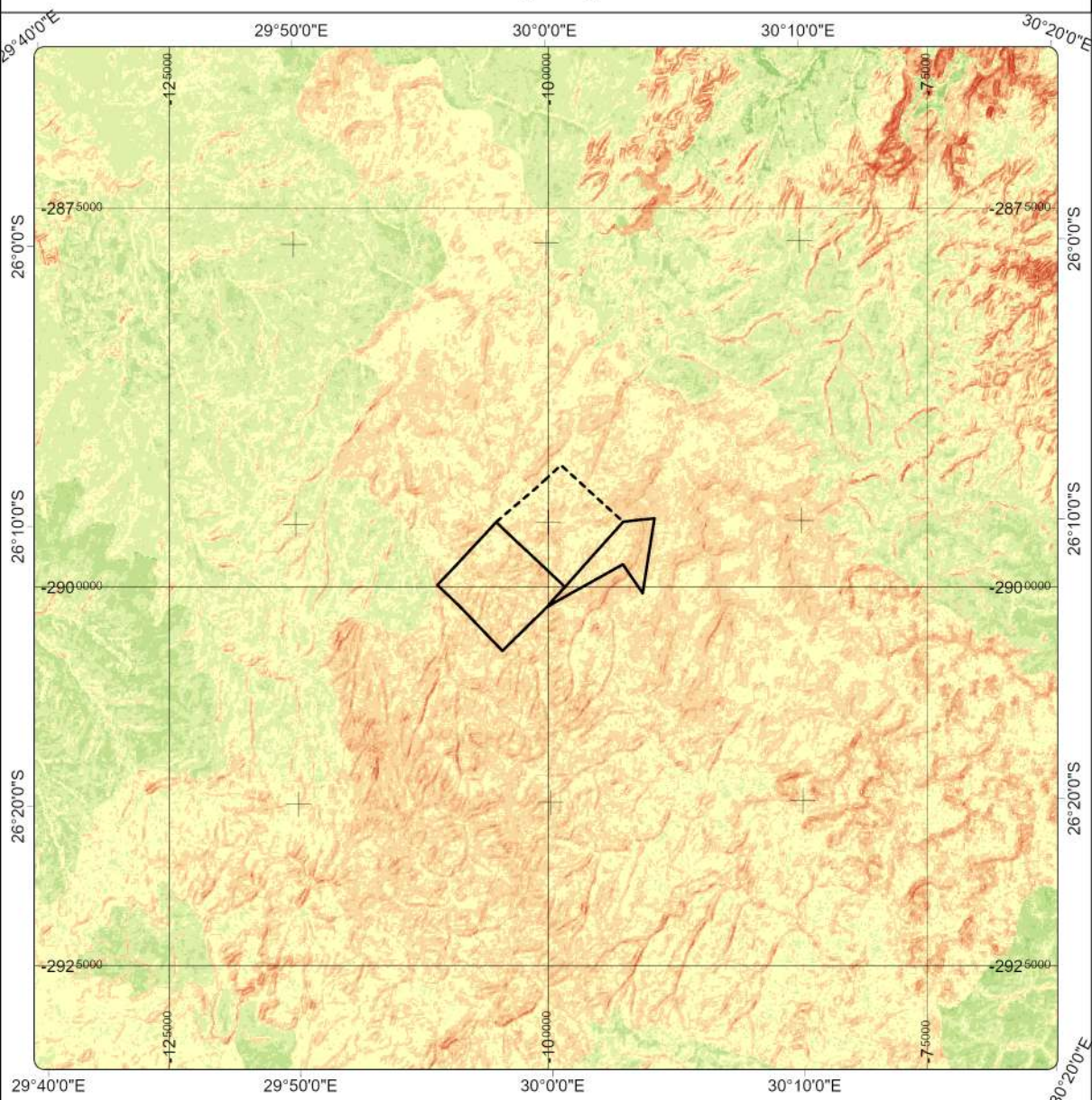
Date: 2022/10/10

Map ID: 107-020-14

MAP 9: LAND CAPABILITY

Kranspan Mining Right Extension

Land Capability 2016



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- | | |
|------------------------------|--------------------|
| Existing Kranspan MRA | 07. Low-Moderate |
| Proposed MRA Extension Areas | 08. Moderate |
| 02. Very low | 09. Moderate-High |
| 03. Low-Very low | 10. Moderate-High |
| 04. Low-Very low | 11. High |
| 05. Low | 12. High-Very high |
| 06. Low-Moderate | |



Scale: 1:450 000
WG31

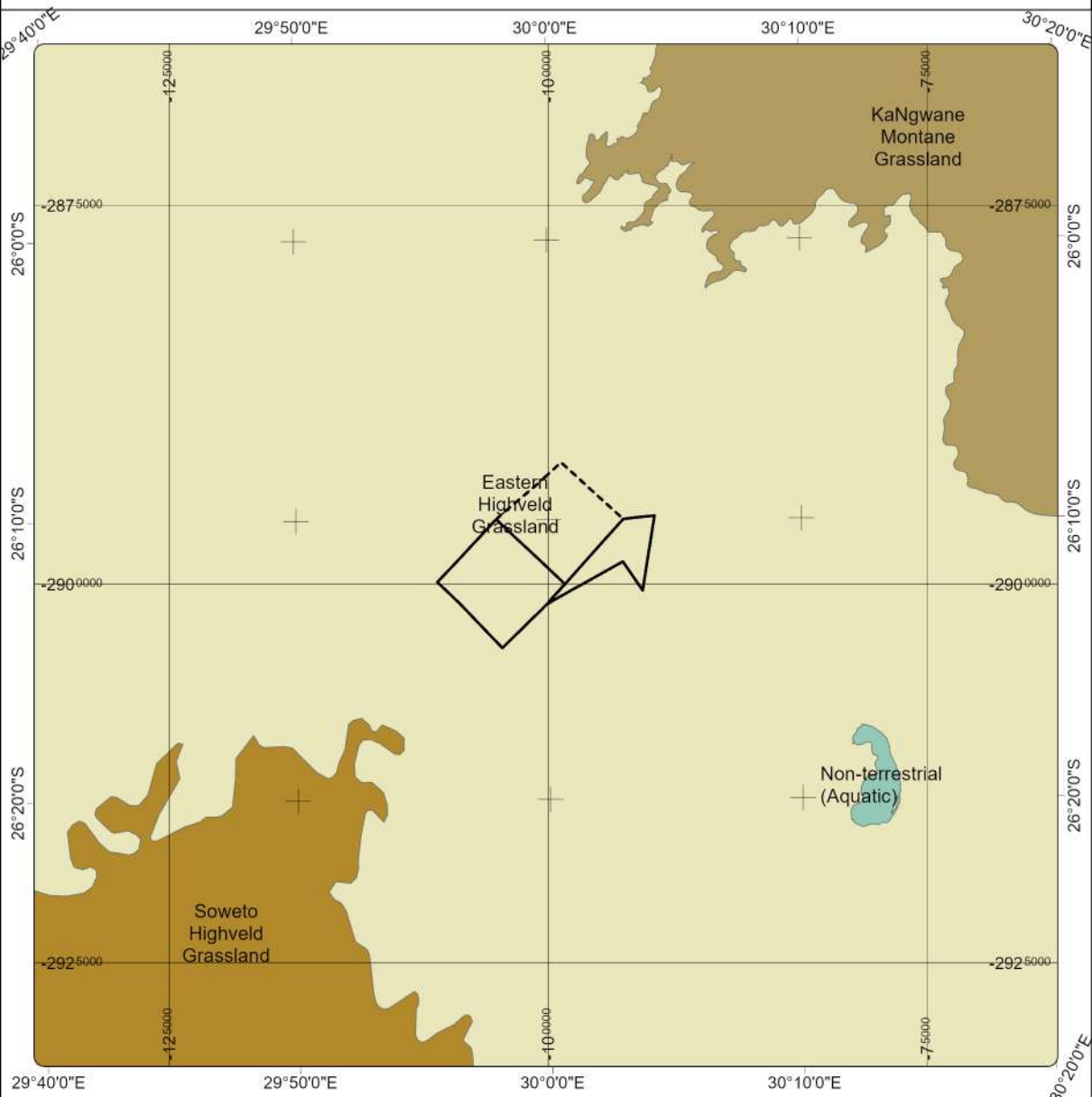
Date: 2022/10/10

Map ID: 107-020-12

MAP 10: VEGETATION

Kranspan Mining Right Extension

VegMap 2018



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Eastern Highveld Grassland
- KaNgwane Montane Grassland
- Non-terrestrial (Aquatic)
- Soweto Highveld Grassland



Scale: 1:450 000
WG31

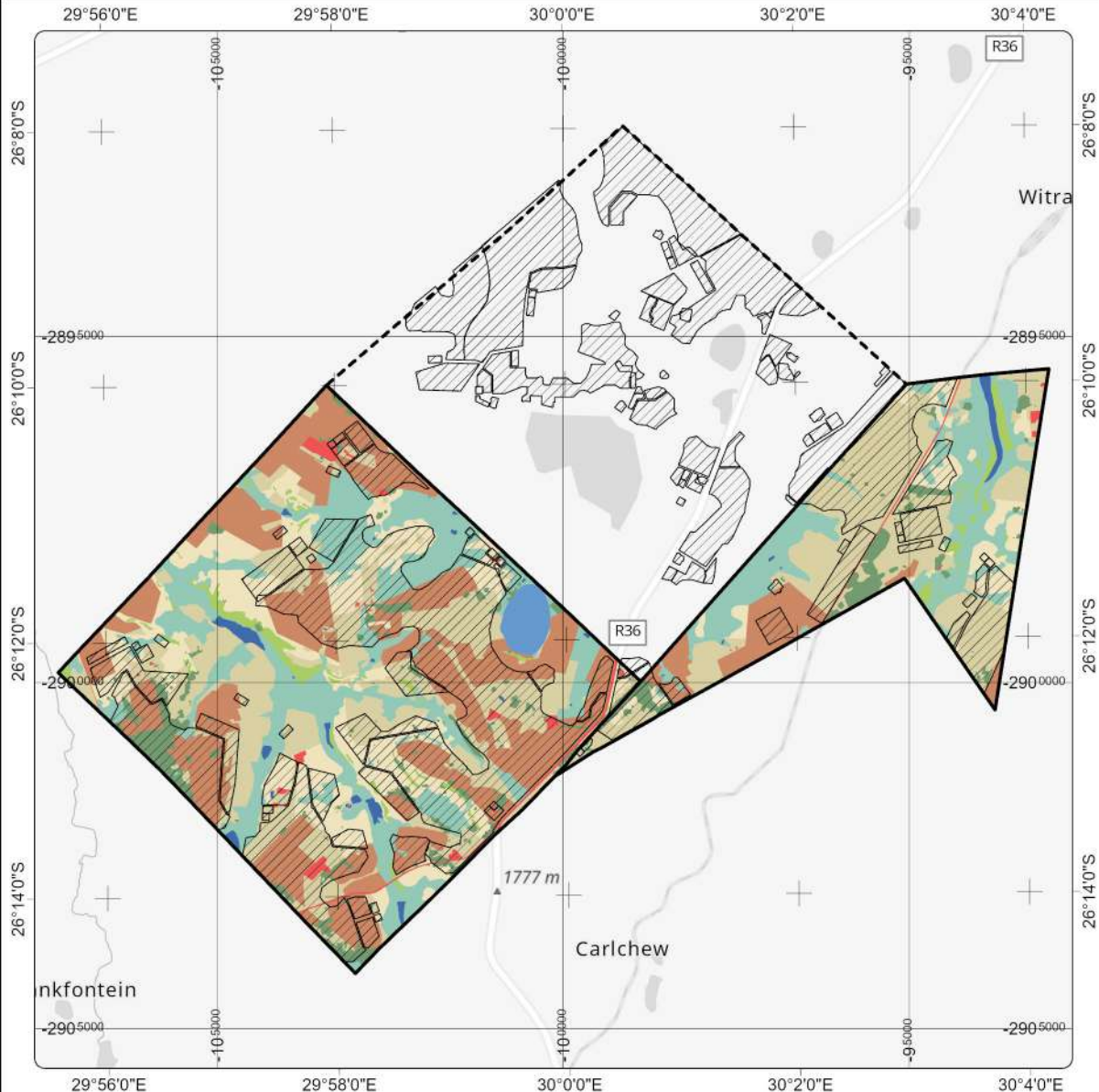
Date: 2022/10/10

Map ID: 107-020-13

MAP 11: VEGETATION UNITS OF THE SITE

Kranspan Mining Right Extension

Vegetation Communities



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- | | |
|------------------------------|-------------------------------|
| Existing Kranspan MRA | Infrastructure |
| Proposed MRA Extension Areas | Pan Wetland |
| Layout | Sandstone Scarp Shrubland |
| Alien trees | Secondary vegetation |
| Current Cultivation | Untransformed Grassland |
| Dams | Valley-Bottom & Seep Wetlands |



Scale: 1:100 000
WG31

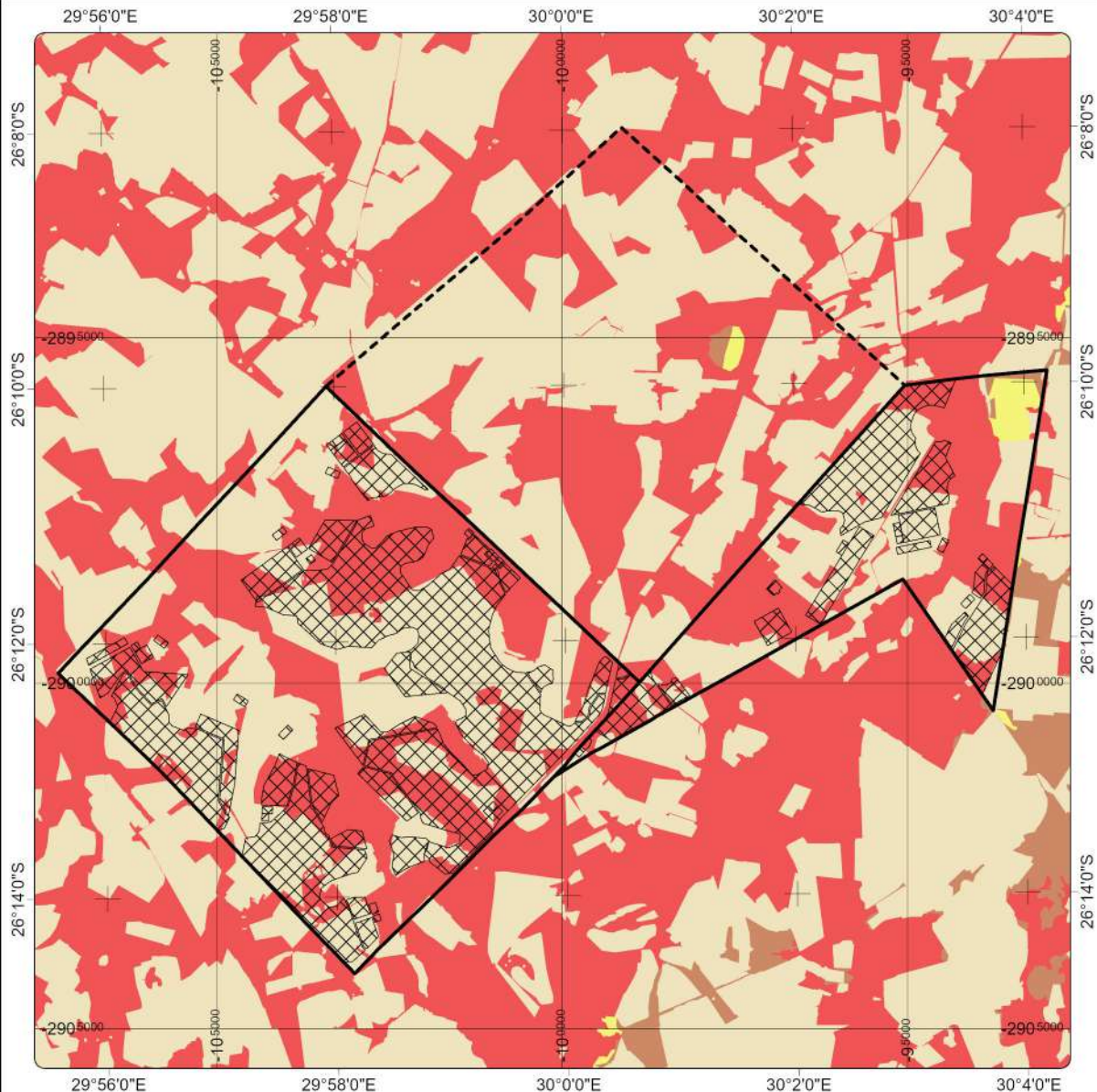
Date: 2023/03/16

Map ID: 107-020-34-v6

MAP 12: MPUMALANGA BIODIVERSITY SECTOR PLAN

Kranspan Mining Right Extension

Mpumalanga Biodiversity Sector Plan 2014



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

-  Existing Kranspan MRA
-  Proposed MRA Extension Areas
-  Mining Layout
-  MBSP 2014
Critical Biodiversity Area
-  Ecological Support Area
-  Heavily or moderately modified
-  Other Natural Areas



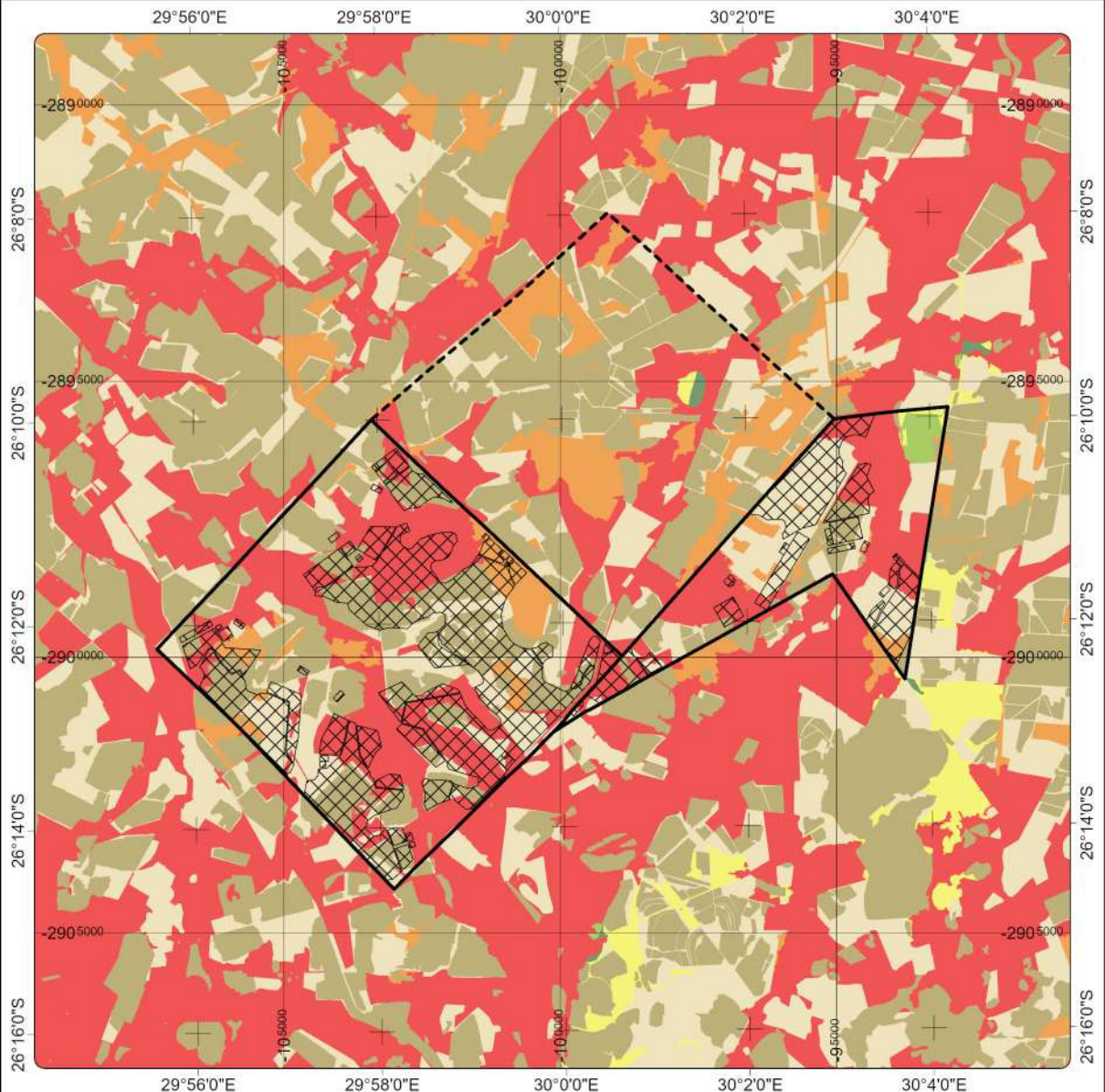
Scale: 1:100 000
WG31

Date: 2023/03/16

Map ID: 107-020-08-v2

Kranspan Mining Right Extension

Mpumalanga Biodiversity Sector Plan 2014



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Area
- Proposed Infrastructure
- CBA Irreplaceable
- CBA Optimal
- ESA Landscape corridor
- ESA Local corridor
- Heavily modified
- Moderately modified-Old lands
- Other Natural Areas



Scale: 1:125 000
WG31

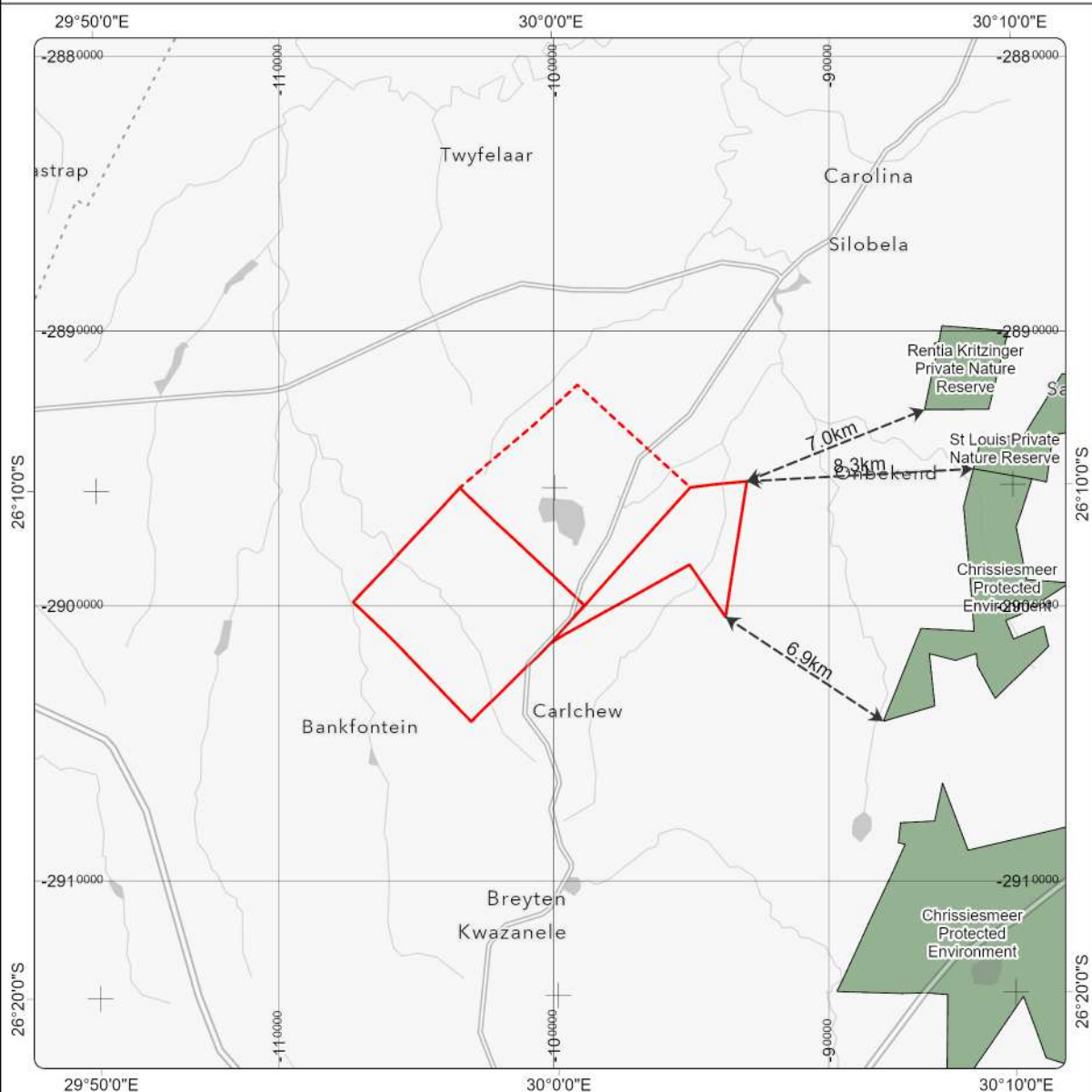
Date: 2023/03/14

Map ID: 08 MBSPinfra

MAP 13: PROTECTED AREAS

Kranspan Mining Right Extension

Protected Areas

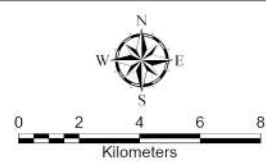


Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Protected Areas



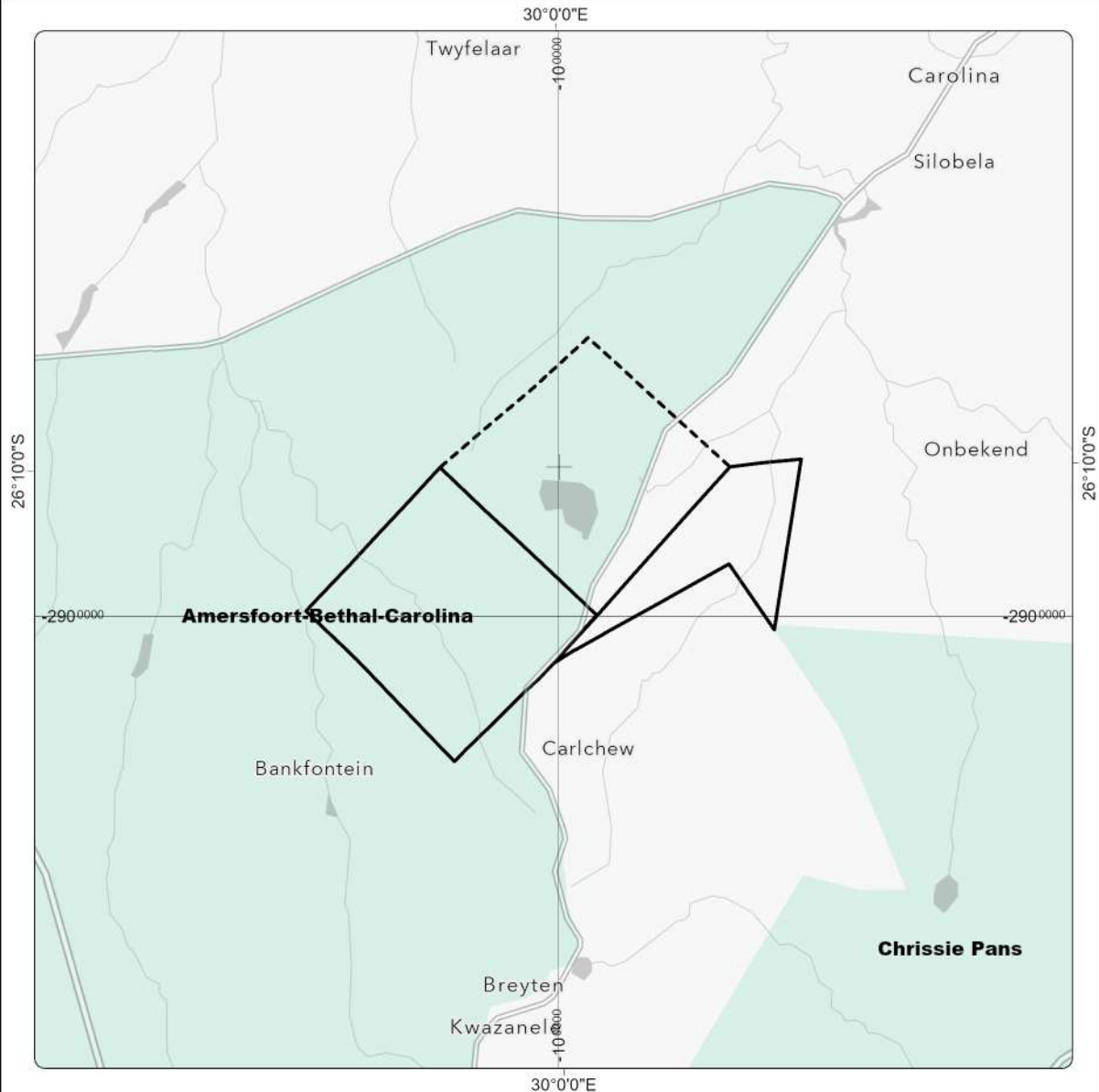
Date: 2022/10/10

Map ID: 107-020-16-v2

MAP 14: IMPORTANT BIRD AND BIODIVERSITY AREAS

Kranspan Mining Right Extension

Important Bird Areas 2015



LEGEND

-  Existing Kranspan MRA
-  Proposed MRA Extension Areas
-  Important Bird Area



Scale: 1:200 000
WG31

Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Date: 2022/10/10

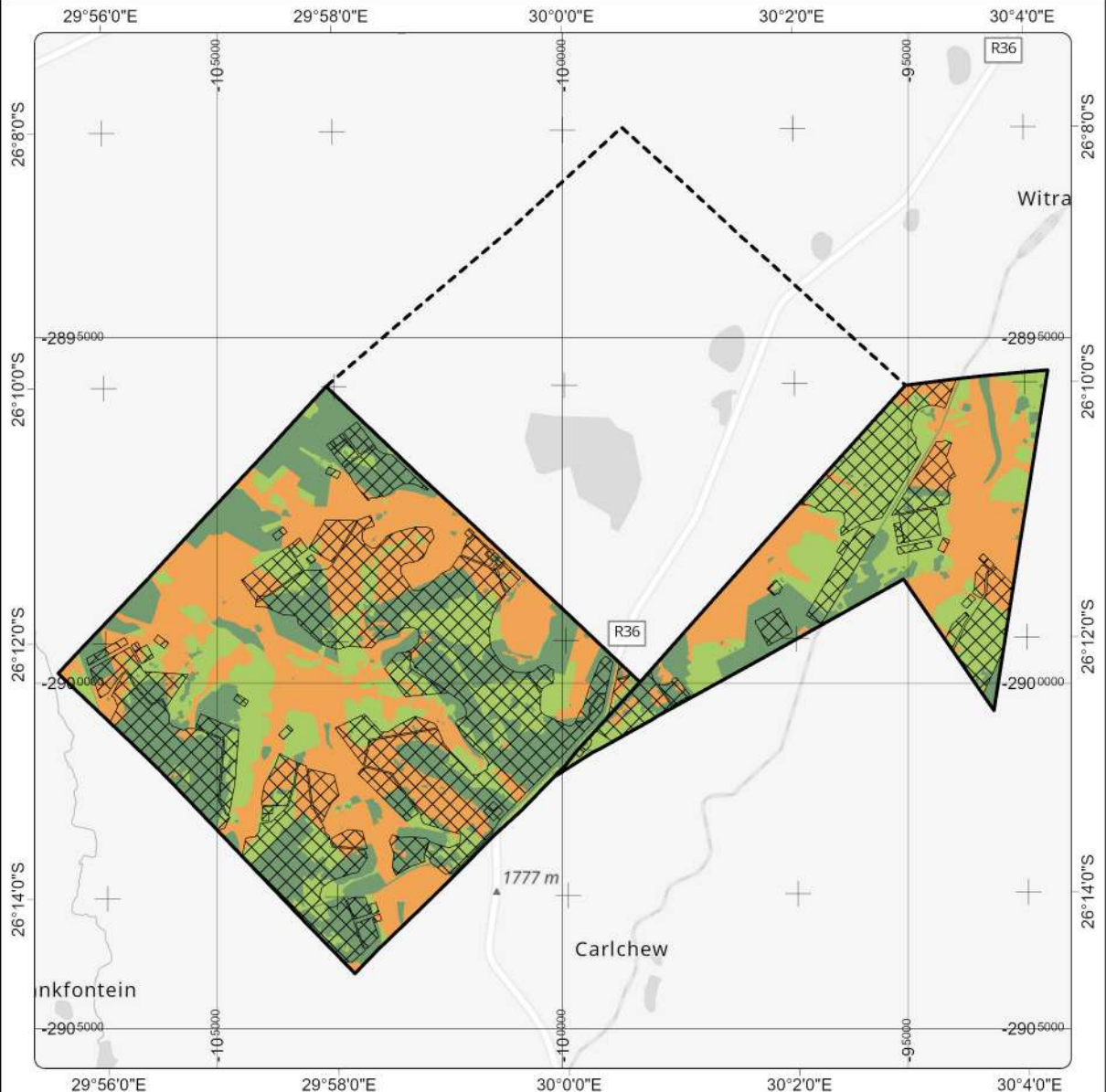
Drawn by:
L van Zyl
GIS Consultant

Map ID: 107-020-21

MAP 15: SITE ECOLOGICAL IMPORTANCE

Kranspan Mining Right Extension







Ecological Importance



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

-  Existing Kranspan MRA
 -  Proposed MRA Extension Areas
 -  Proposed Infrastructure
- Ecological Importance
-  High
 -  Low
 -  Very Low



Scale: 1:100 000
WG31

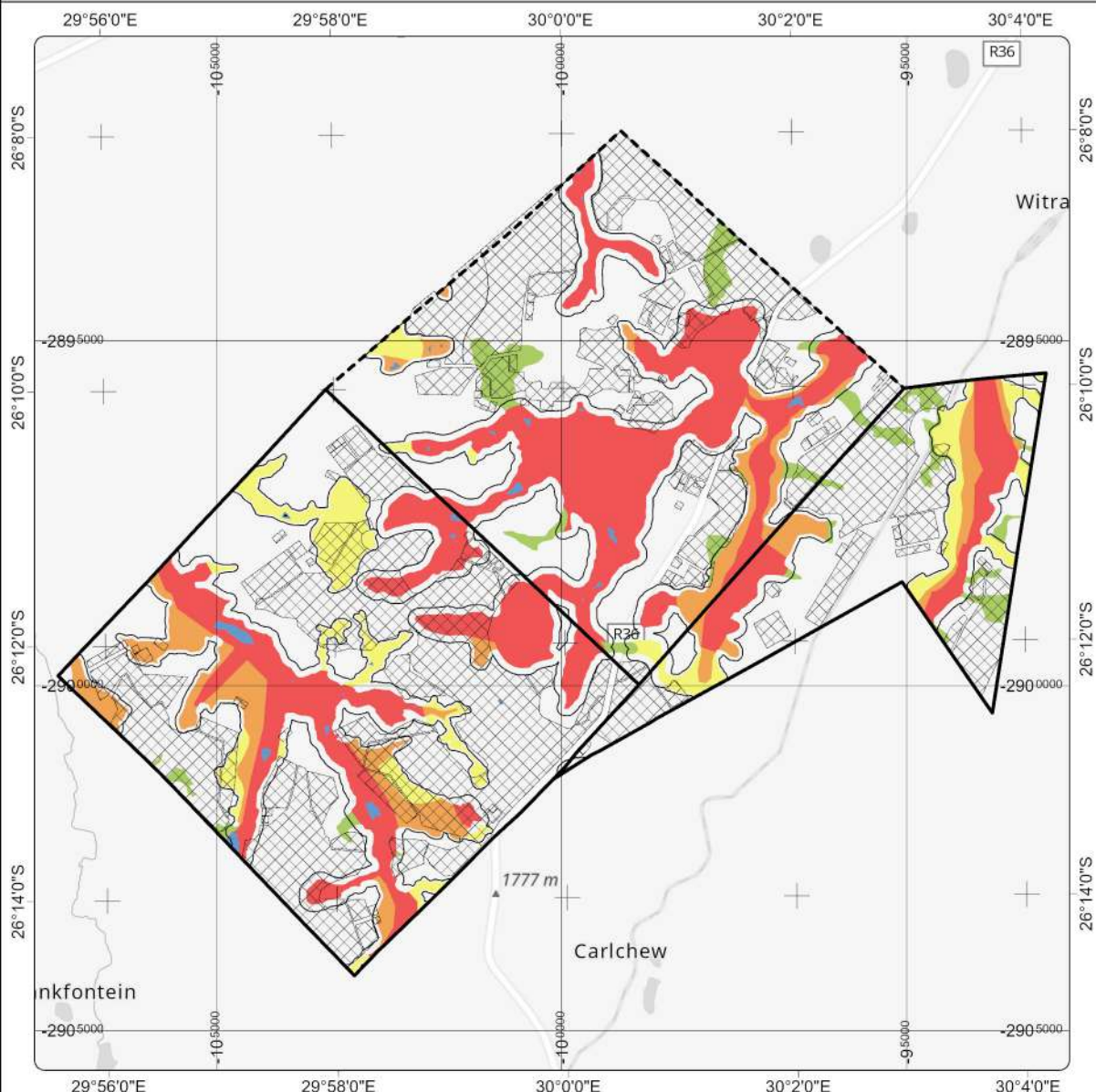
Date: 2023/03/15

Map ID: 107-020-39

MAP 16: SURFACE WATER: WETLANDS

Kranspan Mining Right Extension

Wetlands Sensitivity



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- | | |
|------------------------------|---------------------------------|
| Existing Kranspan MRA | 1 - Priority Wetlands |
| Proposed MRA Extension Areas | 2 - Secondary Priority Wetlands |
| Layout | 3 - Tertiary Priority Wetlands |
| Wetland Buffers | 4 - Low Priority Wetlands |
| Artificial | Artificial Wetlands |



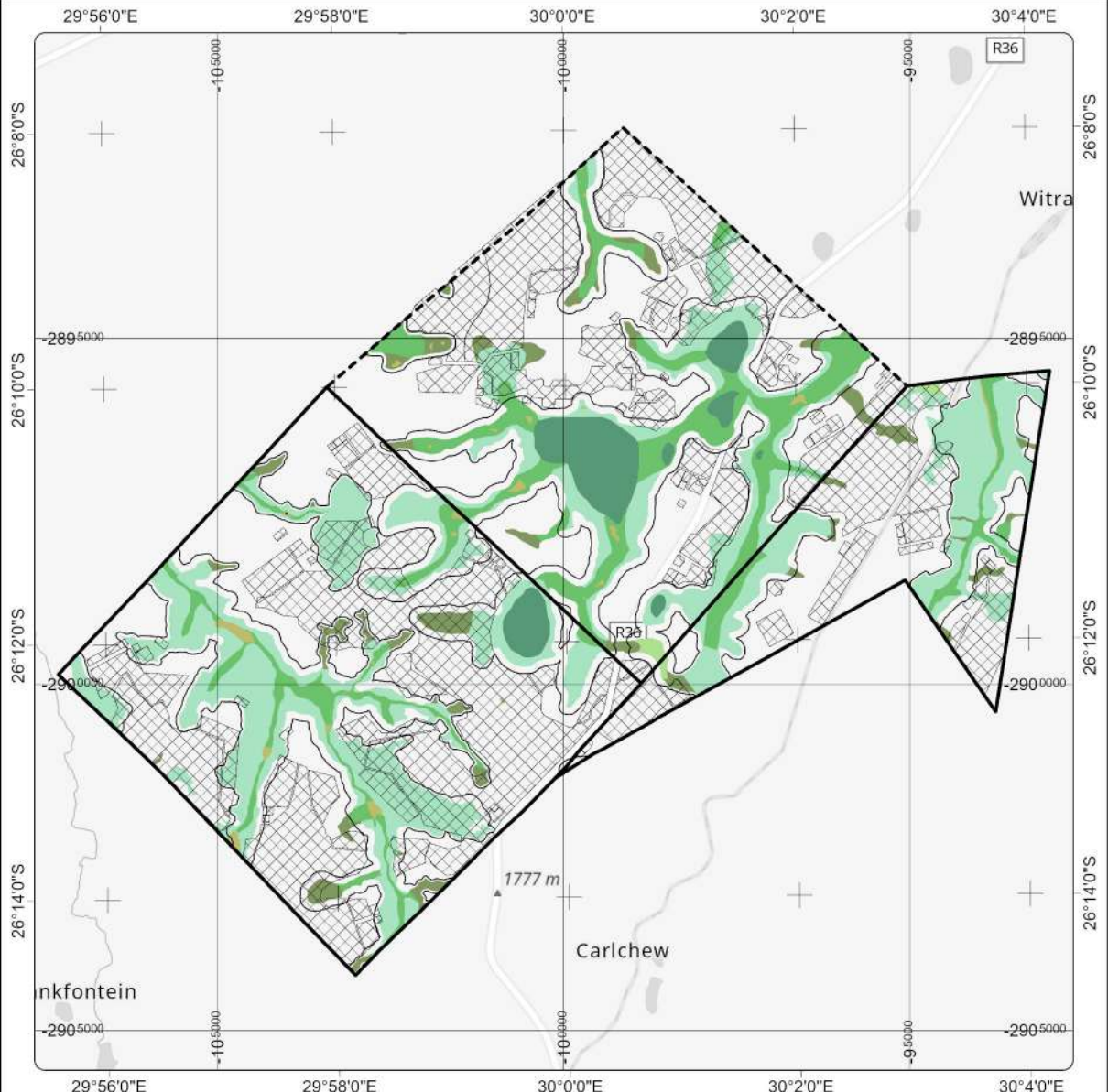
Scale: 1:100 000
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Date: 2023/03/16

Map ID: 107-020-33-v4

Kranspan Mining Right Extension

Wetlands



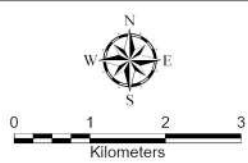
Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Layout
- Wetland Buffers

- Type
- Bench
 - Depression
 - Hillslope Seep
 - Impoundment
 - Valley Bottom
 - Valleyhead Seep



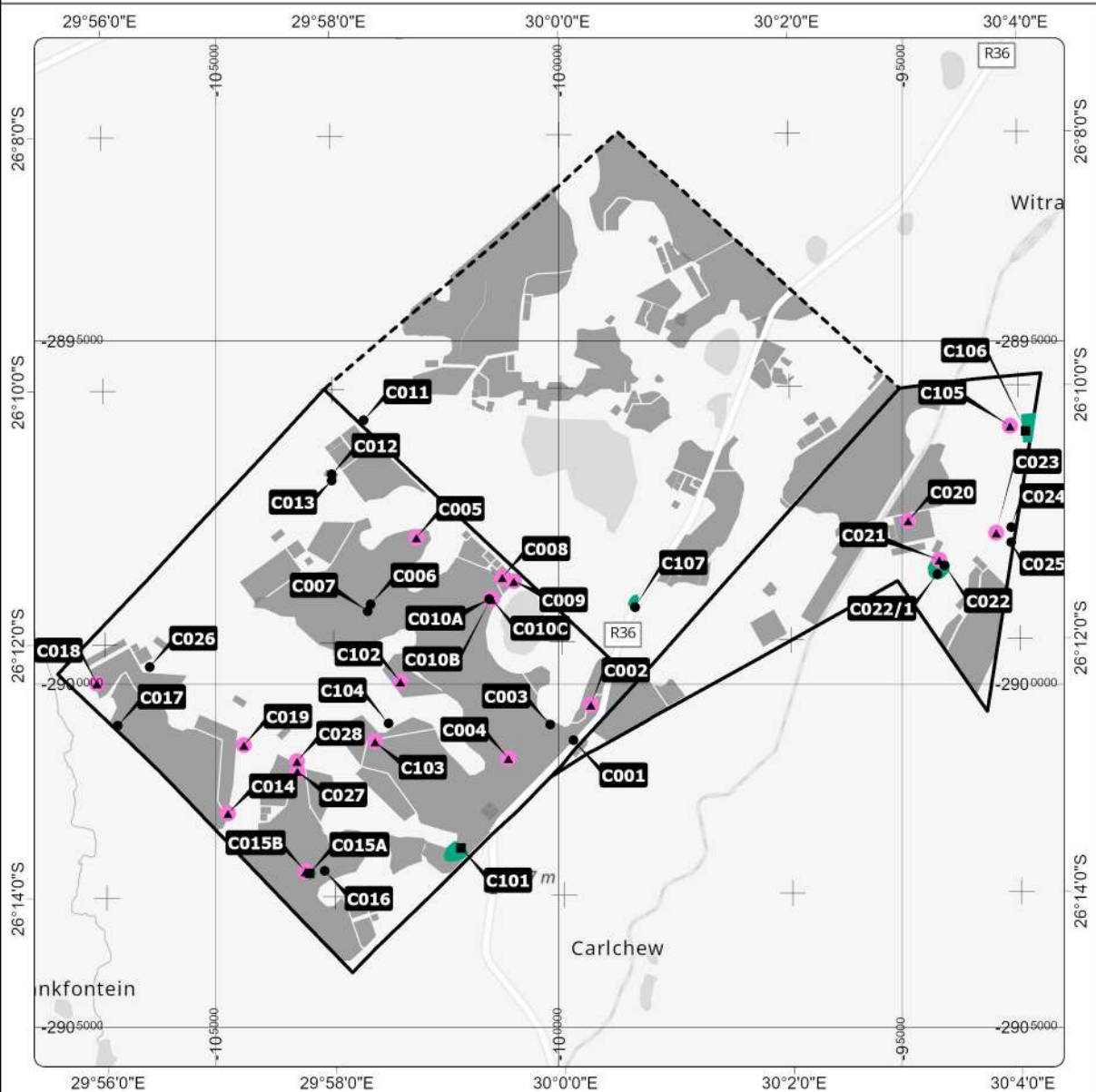
Date: 2023/03/16

Map ID: 107-020-41

MAP 17: HERITAGE RESOURCES

Kranspan Mining Right Extension

Heritage Sensitivity



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Heritage Localities
 - Farmstead
 - Graves
 - Ruins/Historical Structures
 - Heritage Areas around Points
 - 100m Burial Site Buffer
 - Layout



Scale: 1:100 000
WG31

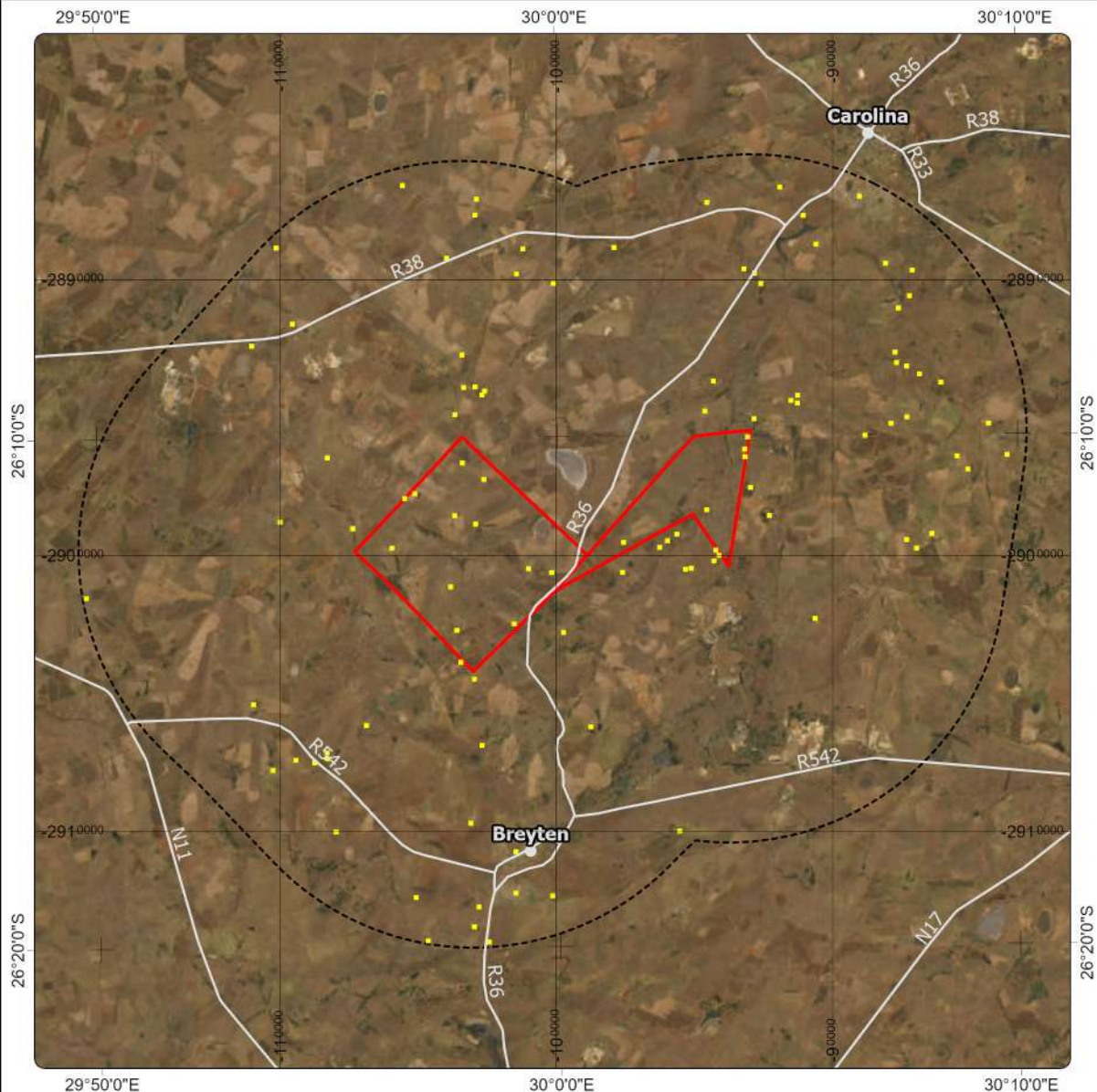
Date: 2023/03/16

Map ID: 107-020-30-v4

MAP 18: VISUAL RECEPTORS

Kranspan Mining Right Extension

Visual Receptors

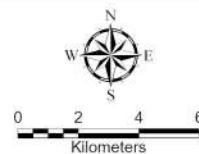


Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Roads
- PZI
- Proposed MRA Extension Areas
- Homesteads / Groups of Homesteads



Scale: 1:250 000
WG31

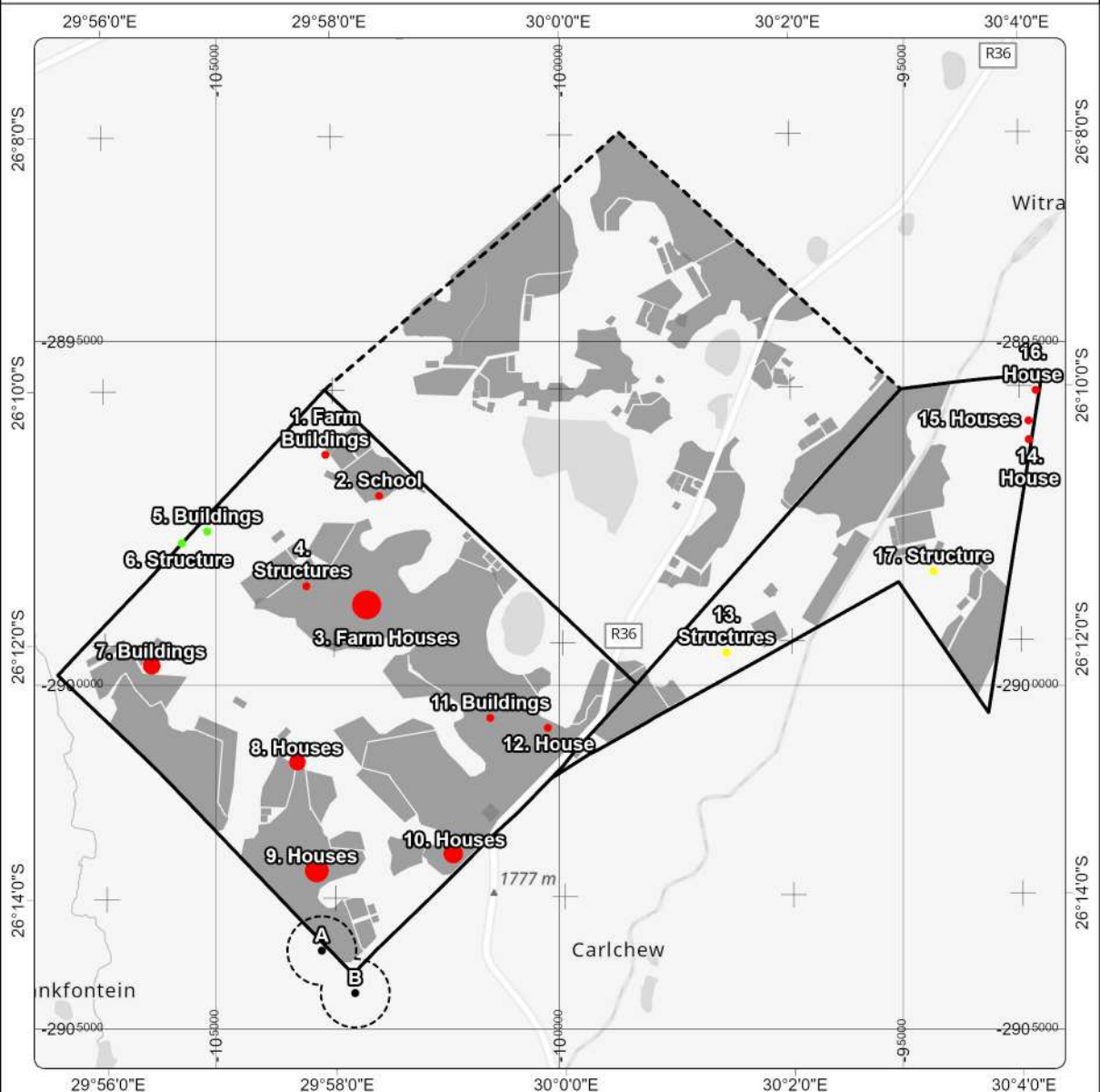
Date: 2023/02/20

Map ID: **Receptors-v2**

MAP 19: SENSITIVE RECEPTORS

Kranspan Mining Right Extension

Sensitive Receptors



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Sensitivity
 - Very High
 - High
 - Low
- Outside MR
- 500m Buffer
- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Layout



Scale: 1:100 000
WG31

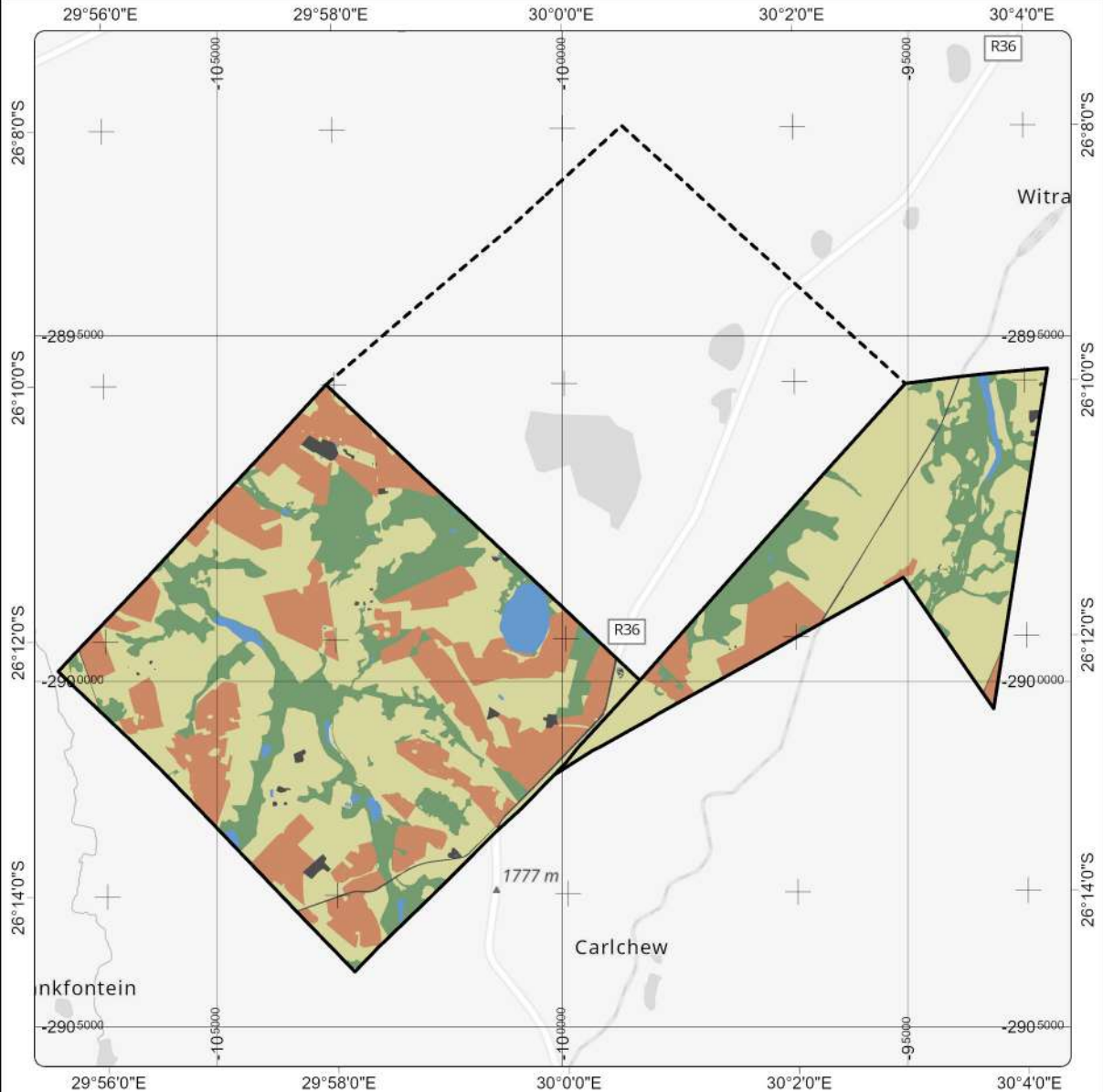
Date: 2023/03/16

Map ID: 107-020-36-v2

MAP 20: LAND USE MAP

Kranspan Mining Right Extension








Pre-Mining Land Use



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

-  Existing Kranspan MRA
-  Proposed MRA Extension Areas
-  Cultivation
-  Grazing
-  Infrastructure
-  Waterbody
-  Wetland



Scale: 1:100 000
WG31

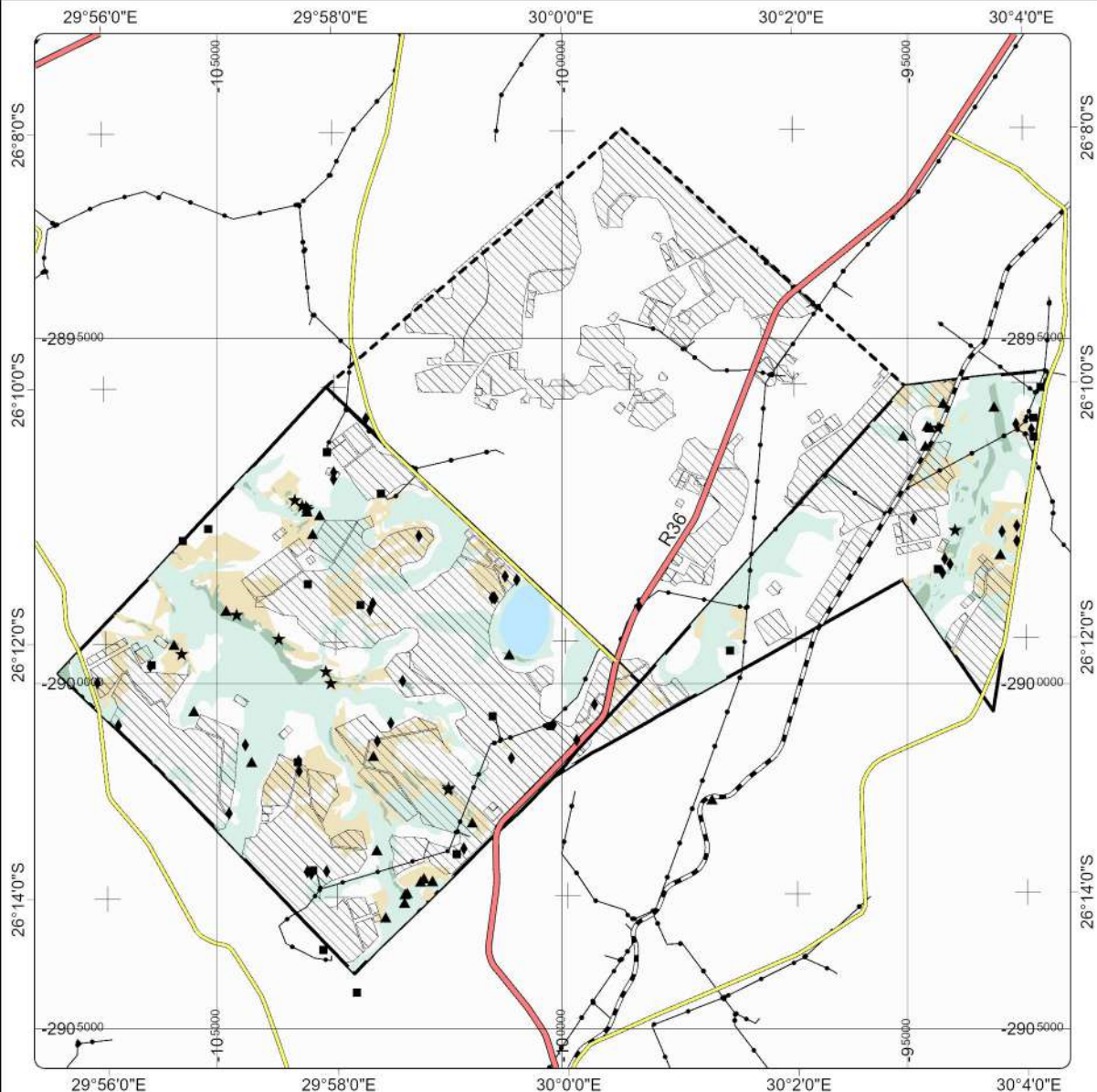
Date: 2023/03/22

Map ID: 107-020-44

MAP 21: ENVIRONMENTAL FEATURES AND EXISTING INFRASTRUCTURE

Kranspan Mining Right Extension

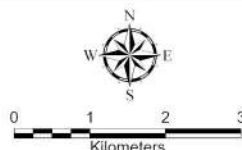
Environmental Features and Layout



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

- ▲ Fauna species of conservation importance
- ◆ Heritage
- ★ Flora species of conservation importance
- Sensitive Receptors
- Arterial Road
- Secondary Road
- Railway Line
- Powerline
- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Layout
- Pan
- Untransformed Grassland
- Sandstone Scarp Shrubland
- Wetland



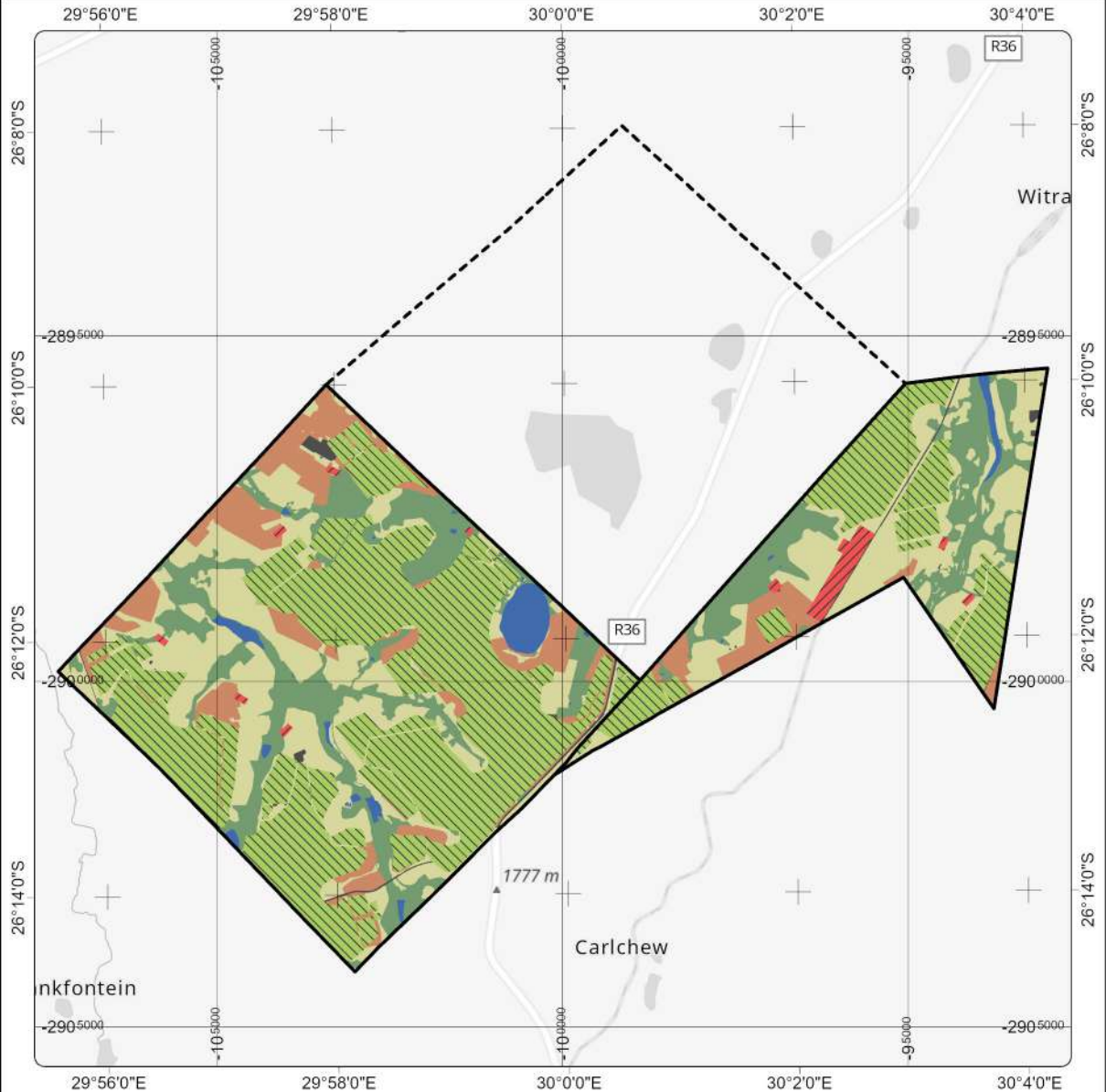
Date: 2023/03/16

Map ID: 107-020-38-v3

MAP 22: POST-CLOSURE LAND USE

Kranspan Mining Right Extension

Post-Mining Land Use



Reviewed by:
P Furniss / F Coetzee
Environmental Scientist

Drawn by:
L van Zyl
GIS Consultant

LEGEND

- Existing Kranspan MRA
- Proposed MRA Extension Areas
- Rehabilitated for Agriculture
- Post Mining Infrastructure
- Cultivation
- Grazing
- Infrastructure
- Waterbody
- Wetland



Scale: 1:100 000
WG31

Date: 2023/03/22

Map ID: 107-020-45-v3

APPENDIX 4: FINAL LAYOUT PLAN

ILIMA COAL COMPANY

K-PAN - ROODEBLOEM VAALBANK COLLIERY

MINE WORKS PLAN

NOTES

SCALE 1: 22500

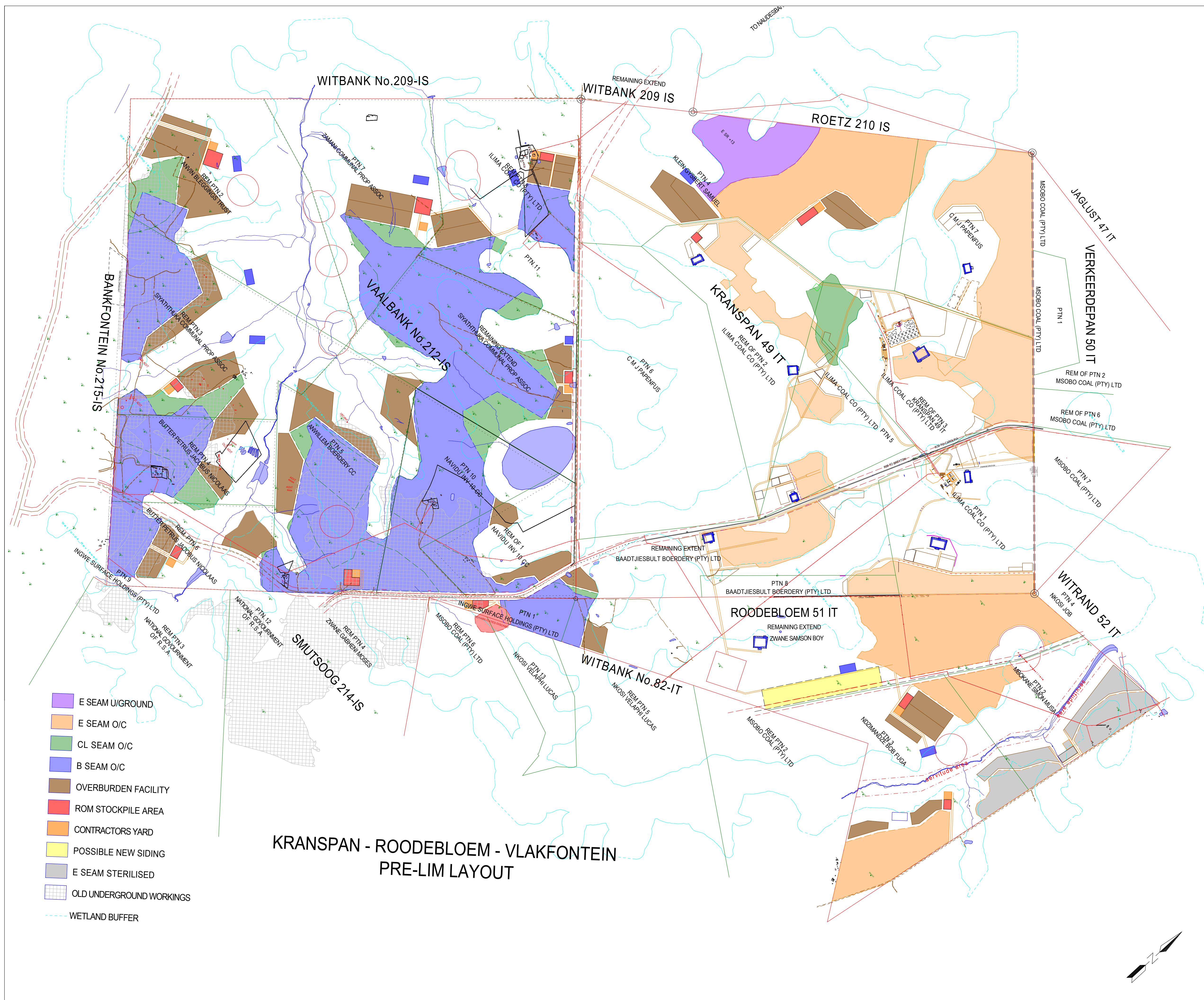
DATE :13/3/2023

PLAN REFERENCE



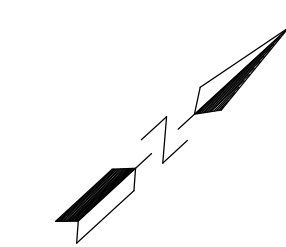
EUGENE PRETORIUS
& ASSOCIATES (PTY) LTD

TEL : (013) 243 5864/5
FAX : (013) 243 5866
E - MAIL : stephan@epasurvey.co.za
Website : www.epasurvey.co.za
30 LITER STREET, MIDDELBURG.1050



KRANSKAN - ROODEBLOEM - VLAKFONTEIN
PRE-LIM LAYOUT

- E SEAM U/GROUND
- E SEAM O/C
- CL SEAM O/C
- B SEAM O/C
- OVERBURDEN FACILITY
- ROM STOCKPILE AREA
- CONTRACTORS YARD
- POSSIBLE NEW SIDING
- E SEAM STERILISED
- OLD UNDERGROUND WORKINGS
- WETLAND BUFFER



APPENDIX 5: ILIMA ROLL OVER MINING METHOD

ILIMA COAL COMPANY (PTY) LTD

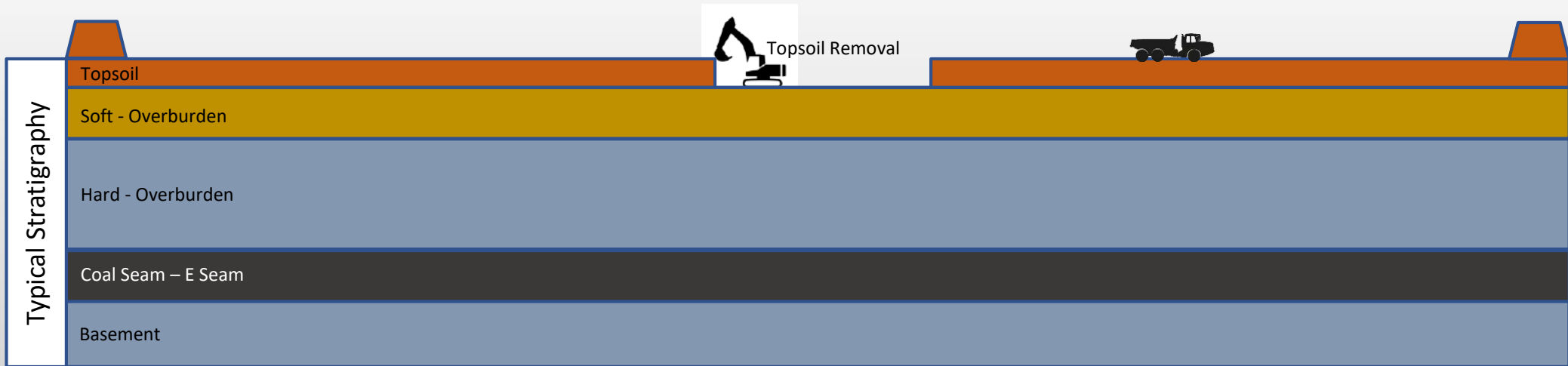
ROLL-OVER MINING SEQUENCE

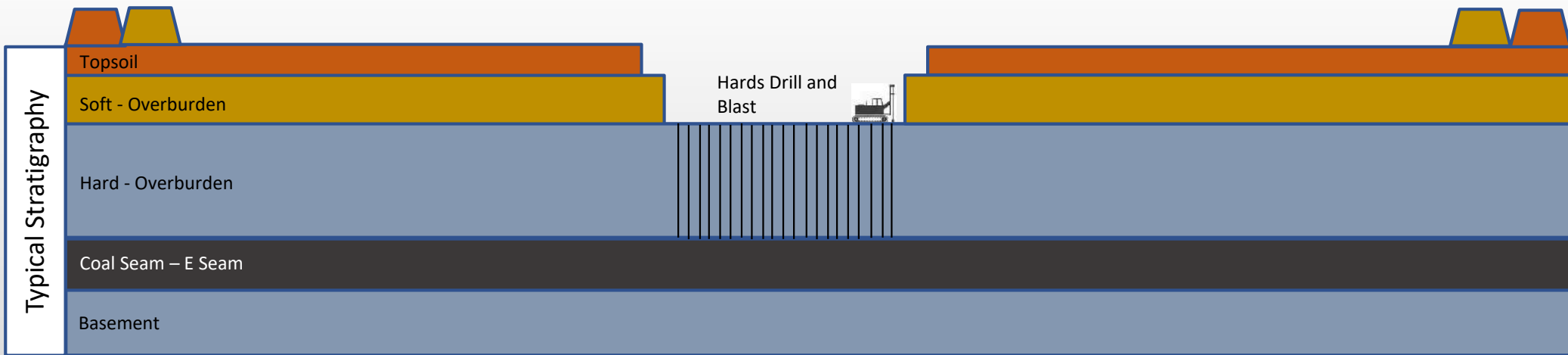
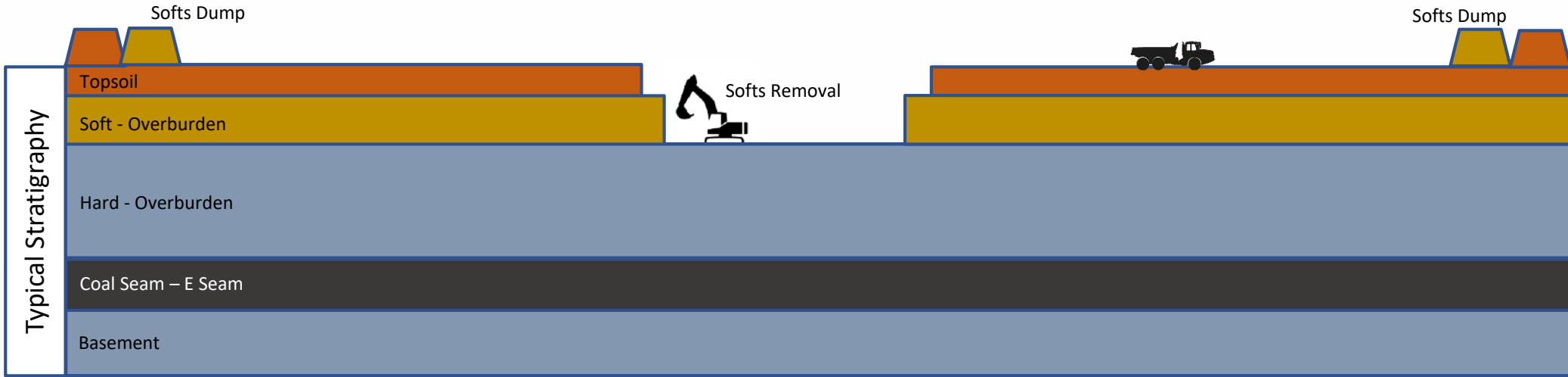
Original Ground Level - OGL

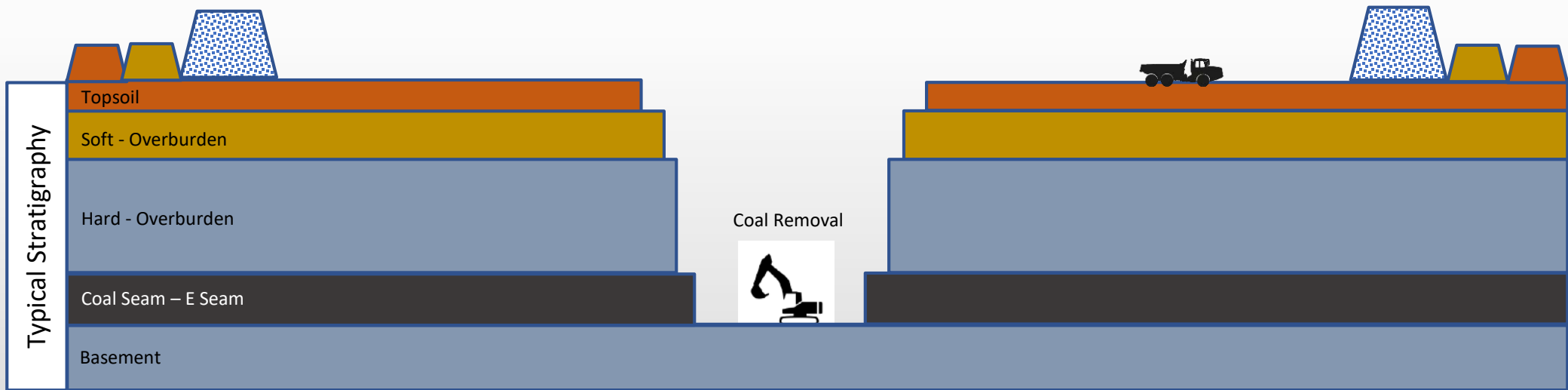
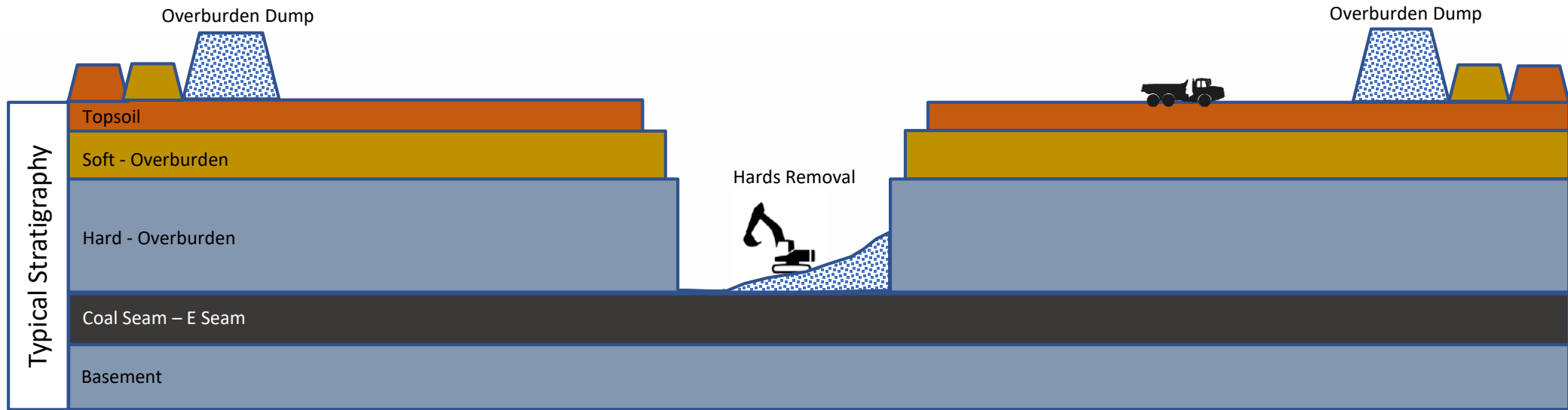


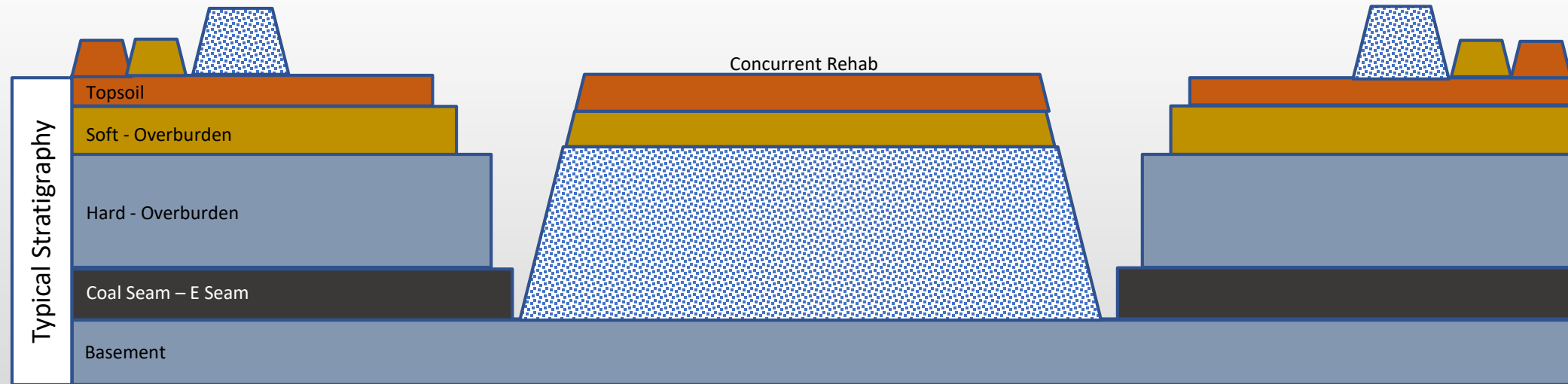
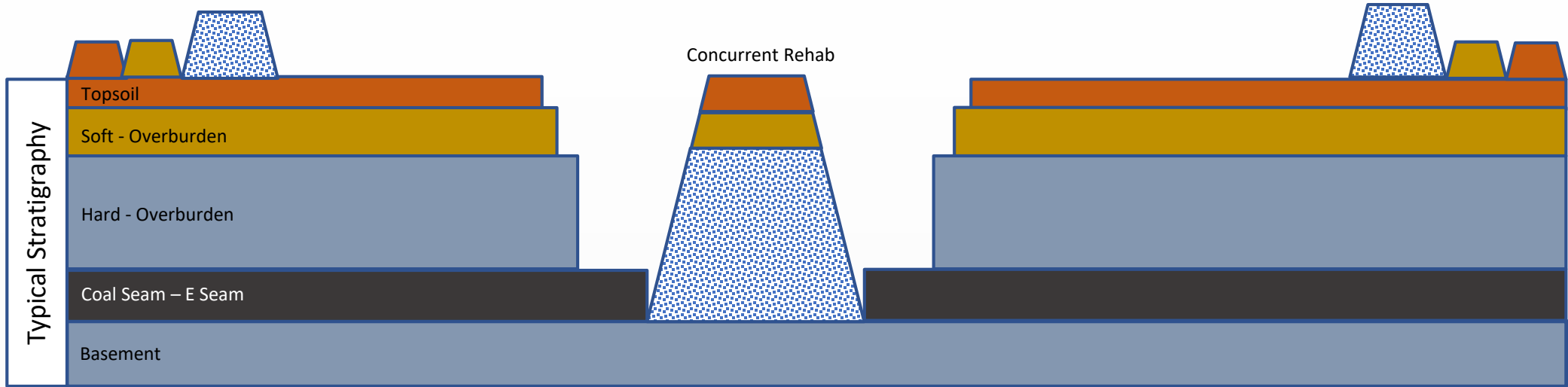
Topsoil Dump

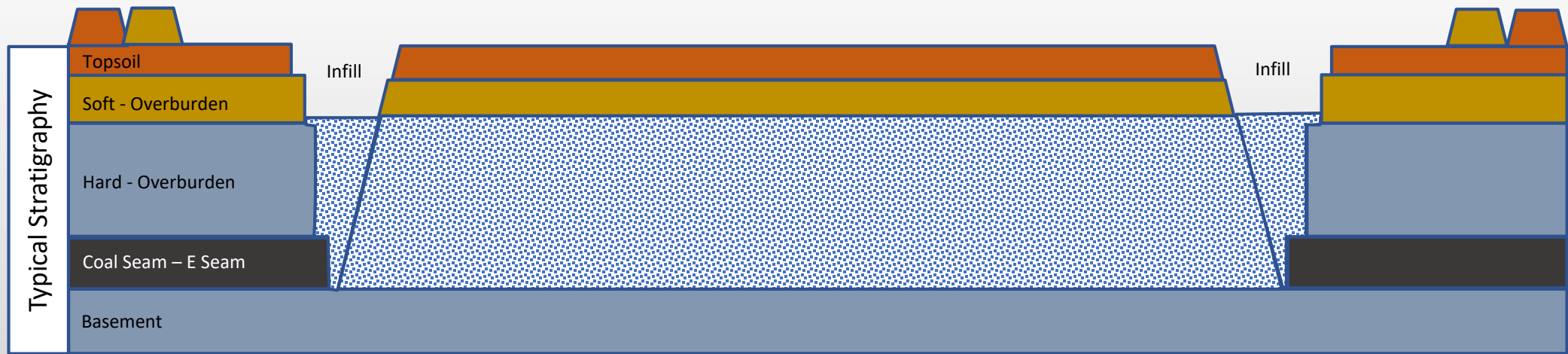
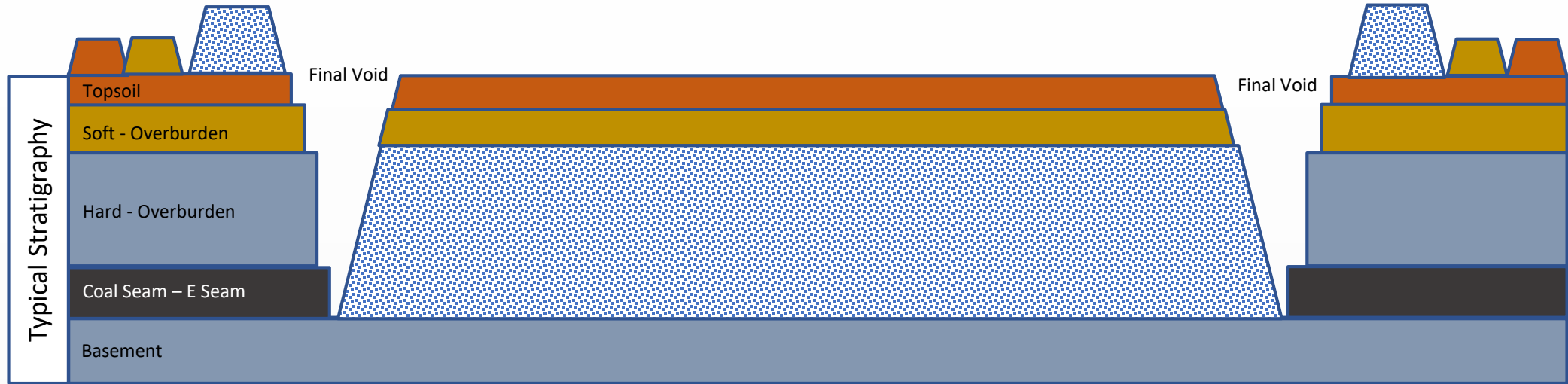
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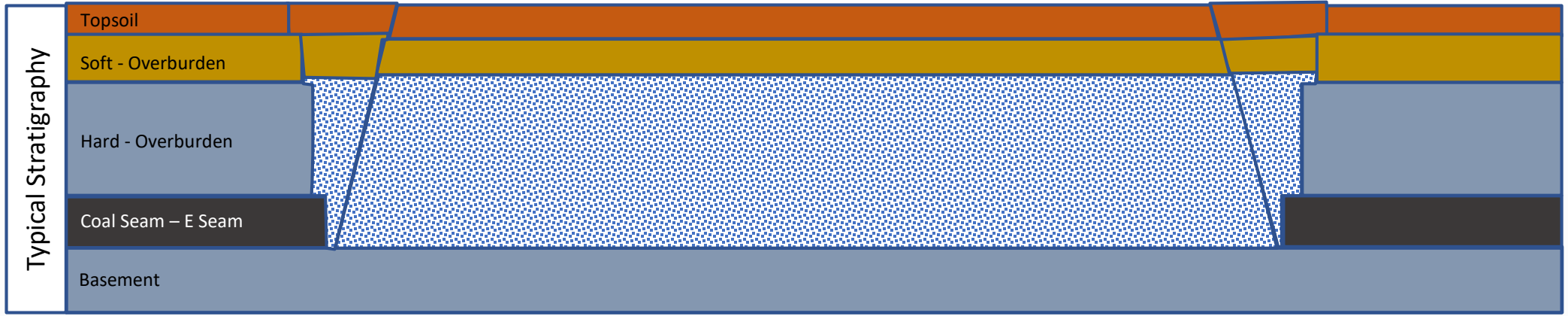












APPENDIX 6: PUBLIC PARTICIPATION

APPENDIX 6A: IAP DATABASE

APPENDIX 6B: PROOF OF NOTIFICATION IN EIA PHASE

APPENDIX 6C: COMMENTS AND RESPONSES REPORT

APPENDIX 6A: IAP DATABASE

LAST NAME	FIRST NAME	ORGANISATION	FARM NAME	FARM PORTION
Landowners (Within the Mining Rights Area Boundary)				
Jordaan	Elza	BAADTJIESBULT BOERDERY PTY LTD	KRANSpan 49	RE
Applicant		ILIMA COAL COMPANY PTY LTD	KRANSpan 49	1
Applicant		ILIMA COAL COMPANY PTY LTD	KRANSpan 49	2
Applicant		ILIMA COAL COMPANY PTY LTD	KRANSpan 49	3
Kleyn	Gysbert Samuel	PRIVATE LANDOWNER	KRANSpan 49	4
Applicant		ILIMA COAL COMPANY PTY LTD	KRANSpan 49	5
Papenfus	Kobus	CMJ PAPERFUS TRUST	KRANSpan 49	6
Papenfus	Kobus	CMJ PAPERFUS TRUST	KRANSpan 49	7
Jordaan	Elza	BAADTJIESBULT BOERDERY PTY LTD	KRANSpan 49	8
Occupiers of the Site (Within the Mining Rights Area Boundary)				
Marais	Frans	Private - Lessee	KRANSpan 49	4
Prinsloo	Rudi	ROODEBLOEM TRUST	KRANSpan 49	8
Jordaan	Elza	BAADTJIESBULT BOERDERY PTY LTD	KRANSpan 49	1
Habindele	Sydwiel	Community leader	KRANSpan 49	1
Landowners (Within both Prospecting Rights Area Boundaries)				
Zwane	Samson	SAMSON BOY ZWANE	ROODEBLOEM 51	RE
Leteane	Festus	INGWE SURFACE HOLDING (PTY) LTD / Seriti	ROODEBLOEM 51	1
Ndzimande	Bob Fuga	NDZIMANDE BOB FUGA	ROODEBLOEM 51	2
Mbokani	Simon Musa	MBOKANE SIMON MUSA	ROODEBLOEM 51	3
Nkambule	Sbongile	SIYATHUTHUKA COMMUNAL PROP ASSOCIATION (CPA)	VAALBANK 212	RE
Nkosi	Busi	SIYATHUTHUKA COMMUNAL PROP ASSOCIATION (CPA)	VAALBANK 212	RE
Lukhele	C	SIYATHUTHUKA COMMUNAL PROP ASSOCIATION (CPA)	VAALBANK 212	RE
Sibagyonni	Nellie	SIYATHUTHUKA COMMUNAL PROP ASSOCIATION (CPA)	VAALBANK 212	RE
Jordaan	Elza	NAVIDU INV 10 CC	VAALBANK 212	RE/1
Schulze	Vincent	ANVIN BLEGGINGS TRUST	VAALBANK 212	RE/2
Nkambule	Sbongile	SIYATHUTHUKA COMMUNAL PROP ASSOCIATION (CPA)	VAALBANK 212	RE/3
Butter	Petra	BUTTER PETRUS JACOBUS NOCOLAAS	VAALBANK 212	RE/4
Fourie	Anton	ANWILLEM BOERDERY CC	VAALBANK 212	5
Butter	Petra	BUTTER PETRUS JACOBUS NOCOLAAS	VAALBANK 212	RE/6
Mashinini	Jan	ZAMANI COMMUNAL PROP ASSO	VAALBANK 212	7
Applicant		ILIMA COAL COMPANY (PTY) LTD	VAALBANK 212	RE/8
Zwane	Samson	INGWE SURFACE HOLDING (PTY) LTD	VAALBANK 212	9
Jordaan	Elza	NAVIDU INV 10 CO	VAALBANK 212	10
Applicant		Ezindongeni primary school	VAALBANK 212	11
Occupiers of the Site (Within the Prospecting Rights Area Boundary)				
Janse van Rensburg	Leon	Private - Lessee	VAALBANK 212	5
	Wikus	Private - Lessee	VAALBANK 212	RE/4 and RE/6
Zwane	Samson	INGWE SURFACE HOLDING (PTY) LTD	ROODEBLOEM 51	1
Wilken	Braam	Farmer on site	VAALBANK 212	RE/8
Cornelius	Corne	Representative of Ilima working with occupiers	VAALBANK 212	RE/8

LAST NAME	FIRST NAME	ORGANISATION	FARM NAME	FARM PORTION
Directly Adjacent Landowners (Landowners Surrounding the PRA Boundary)				
Gangazhe	Mashudu	MSOBO COAL PTY LTD	VERKEERDEPAN 50	7
Mansoor	Yacoob	WILLIE ENGELBRECHT LANDGOED (PTY) LTD	WITRAND 52	1
Nkosi	Job	PRIVATE LANDOWNER		
Nkosi	Rosina Mango	PRIVATE LANDOWNER	WITRAND 52	4
Mansoor	Yacoob	NORTHERN COAL (PTY) LTD	WITKRANZ 53	1
Jordaan	Elza	BAADTJIESBULT BOERDERY (PTY) LTD	WITKRANZ 53	15
		VAN ASWEGEN MECHIEL DAVID	GOEDVERWACHTING 81	2
Gangazhe	Mashudu	MSOBO COAL (PTY) LTD	WITBANK 82	2
	Lucas	NKOSI VELAPHI LUCAS	WITBANK 82	5
Gangazhe	Mashudu	MSOBO COAL (PTY) LTD	WITBANK 82	6
	Lucas	NKOSI VELAPHI LUCAS	WITBANK 82	13
Zwane	Moses	ZWANE GABHENI MOSES	WITBANK 82	19
Kleyn	Gysbert Samuel	Nova trust	NAUDES BANK 172	14
Motha	Happy	RSA GOVERNMENT - Dept of Rural Development and Land Reform	SMUTSOOG 214	3
Zwane	Moses	ZWANE GABHENI MOSES	SMUTSOOG 214	4
Motha	Happy	RSA GOVERNMENT - Dept of Rural Development and Land Reform	SMUTSOOG 214	12
Dyman	George/ Estelle	BENICON MINING (PTY) LTD	BANKFONTEIN 215	7
Butter	Corne	BUTTER PETRUS JACOBUS NOCOLAAS	BANKFONTEIN 215	9
Motha	Happy	RSA GOVERNMENT - Dept of Rural Development and Land Reform	BANKFONTEIN 215	12
		VILAKAZI & NKABINDE GEMEENSKAPSTRUST	KROGHSHOOP 213	1
Motha	Happy	RSA GOVERNMENT - Dept of Rural Development and Land Reform	KROGHSHOOP 213	3
Papenfus	Kobus	CMJ PAPERFUS TRUST	WITBANK 209	RE
Mashinini	Jan	ZAMANI COMMUNAL PROP ASSOCIATION	WITBANK 209	1
	THULANI MTSUKI ATTORNEYS	ZAMANI COMMUNAL PROP ASSOCIATION- Attorneys		
		VILAKAZI & NKABINDE GEMEENSKAPSTRUST	WITBANK 209	2
Papenfus	Kobus	CMJ PAPERFUS TRUST	WITBANK 209	3
Directly Adjacent Occupiers (Occupiers Surrounding the PRA Boundary)				
Nkosi	Thembi	Thembi's Shop	WITBANK 209	
Nkabinde	Lebo		WITBANK 209	
Sibanyoni	Phethile		WITBANK 209	
Mahlangu	Sophie		WITBANK 209	
Samuel	Nkambule		WITBANK 209	
Municipal Councillors				
Mbokane	Peter	Ward Councillor: Ward 21		

LAST NAME	FIRST NAME	ORGANISATION	FARM NAME	FARM PORTION
Local and District Municipality				
Nkosi	Paulos	Albert Luthuli Local Municipality		
Mavumbela	Lovedale	Albert Luthuli Local Municipality		
-	Molly	Albert Luthuli Local Municipality: Electricity		
		Albert Luthuli Local Municipality		
Nkosi	D	Albert Luthuli Local Municipality: Mayor		
-	Mbuso	Albert Luthuli Local Municipality: Roads		
Shabangu	JW	Albert Luthuli Local Municipality: Community and Safety Services		
Gumede	ME	Albert Luthuli Local Municipality: Water		
		Albert Luthuli Local Municipality		
Chirwa	MG	Gert Sibande District Municipality: Mayor		
B	Phiwe	Gert Sibande District Municipality: Roads		
P	Tshidi	Gert Sibande District Municipality: Water		
Organs of State with Jurisdiction				
Sekgetho	Seapei	Department of Mineral Resources DDMLA		
Tshivhandekano	Aubrey	Department of Mineral Resources: Regional Manager		
Netshikweta	Herbert	Department of Mineral Resources Senior Inspector		
Mutengwe	Mashudu	Department of Mineral Resources: Emalahleni		
Mathavhela	Sam	Department of Mineral Resources: Pretoria - Environment Authorisations: Mpumalanga		
Masuku	Lazarus	Department of Rural Development and Land Reform		
Mathabe	Thato	Department of Rural Development and Land Reform		
Mulaudzi	Masala	Department of Water and Sanitation		
Maliaga	Simon	Department of Water and Sanitation (Bronkhorstspuit)		
Mare	Charmaine	Eskom Holdings SOC LTD		
Muswubi	Mpho	Eskom Transmission Land and Rights Mpumalanga		
Rasiuba	Thabo	Inkomati Usuthu Catchment Management Agency (IUCMA)		
Ndlovu	Zomakhale	Inkomati Usuthu Catchment Management Agency (IUCMA)		
Dzhangani	Thandi	Inkomati Usuthu Catchment Management Agency (IUCMA)		
Luyt	Robyn	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs		
Ntuli	Pamela	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs: Agriculture		
Nyathikazi	Bheki	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs		
Mbedu	Noma	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs		
Mthombothi	W	Mpumalanga Department of Community Safety, Security and Liason: HoD		

LAST NAME	FIRST NAME	ORGANISATION	FARM NAME	FARM PORTION
Ngubane	S	Mpumalanga Department of Co-Operative Governance and Traditional Affairs: HoD		
Ntombela	GS	Mpumalanga Department of Culture, Sports and Recreation: HoD		
Nxumalo	Tinyiko	Mpumalanga Department of Economic Development and Tourism		
Nkosi	Prudence	Mpumalanga Department of Economic Development and Tourism		
Sebitso	N	Mpumalanga Department of Economic Development and Tourism		
Thobela	M	Mpumalanga Department of Economic Development and Tourism		
Mdluli	JD	Mpumalanga Department of Economic Development and Tourism		
Mnisi	JM	Mpumalanga Department of Economic Development and Tourism		
Mdluli	LM	Mpumalanga Department of Economic Development and Tourism		
Mhlabane	M	Mpumalanga Department of Education: HoD		
	Josephine	Mpumalanga Department of Health: HoD		
Mashilo	Speedy Katisho	Mpumalanga Department of Human Settlements: MEC		
Mohlaseedi	K	Mpumalanga Department of Public Works, Roads and Transport: HoD		
Mahlalela	X	Mpumalanga Department of Social Development: HoD		
Sithole	XGS	Mpumalanga Economic Growth Agency		
Johnson	U	Mpumalanga Economic Growth Agency		
Moduka	Benjamin	Mpumalanga Heritage Resources Authority		
Mokoena	Lineth	Mpumalanga Heritage Resources Authority		
Mtshweni	R	Mpumalanga Premier		
Nkosi	Phumla	Mpumalanga Tourism and Parks Agency		
Mnisi	Thabile	Mpumalanga Tourism and Parks Agency		
Narasoo	Komilla	Mpumalanga Tourism and Parks Agency		
de Kock	Rene	SANRAL SOC LTD.		
Khumalo	Nokukhanya	South African Heritage Resource Agency		
Ndou	Livhuwani	Transnet SOC LTD.		
Papenfus	Norman	Transnet SOC LTD.		
Azwihangwisi	Nemulodi	Department of Mineral Resources		
Tshivhandekano	Aubrey	Department of Mineral Resources		
Nkosi	Sam	Department of Rural Development and Land Reform		
Tshabalala	Nomfundo	DFFE Director-General		
Ntshanga	Skumsa	DFFE- Chief Directorate: Biodiversity Management and Permitting		
Lekota	Seoka	DFFE-Biodiversity Conservation		
Malete	Simon	DEA- Directorate		
Matibe	Khorommbi	DEA-Chief Directorate: Biodiversity Economy and Sustainable Use		
Other				
Stols	Nico	Mine Manager Msobo		
Mukwevho	Livhuwani	Environmental Manager: Ilima		
Rathbone	David	Chrissiesmeer Lake District		
/	/	Anonymous Registered IAP		
Gibbons	Bradley	Endangered Wildlife Trust		
		BirdLife South Africa		

APPENDIX 6B: PROOF OF NOTIFICATION IN EIA PHASE

To be provided in Final EIR

APPENDIX 6C: COMMENTS AND RESPONSES REPORT

PROPOSED KRANSPAN MINING RIGHT EXTENSION PROJECT: COMMENTS AND RESPONSES REPORT

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
Directly affected landowners on Farms Vaalbank 212 IS and Roodebloem 51 IT	All landowners	September 2022	Emails and meetings	<p>Ilima Coal Company had on-site meetings with various landowners to introduce the project and to request access to undertake specialist studies needed for the EIA on their properties.</p> <p>ABS Africa spoke telephonically with various landowners to introduce the project and to request access to undertake specialist studies needed for the EIA on their properties and confirmed detailed information on the project in the form of a letter which was emailed to the landowner.</p>	The landowners provided consent and their various contact details to receive the information on the project.
Directly Affected Landowner: Portion 5 of Farm Vaalbank 212 IS	Anton Fourie	20 September 2022	Telephone Call	<p>ABS Africa spoke telephonically with Mr. Anton Fourie to introduce the project and to request access to undertake specialist studies needed for the EIA on his property and confirmed detailed information on the project in the form of a letter which was emailed to the landowner.</p>	Mr. Anton Fourie provided his email address to receive the information on the project.
		21 and 22 September 2022	Email	<p>Baie dankie vir u tyd en ons oproep vroër en gister. Soos bespreek, vind asb. aangeheg die kennisgewingsbrief in verband met die omgewingstudies wat uitgevoer moet word op u grond (Gedeelte 5 van Plaas Vaalbank 212 IS). Die studies is ter ondersteuning van die uitvoerbaarheid van die voorgestelde uitbreiding van die Kranspan Mynreggebied. Kontak my gerus indien u enige verdere inligting benodig of navrae het.</p> <p><i>Translated: Thank you so much for your time and our call earlier and yesterday. As discussed, please</i></p>	<p>Ek kan ongelukkig nie toestemming gee om my grond te betree vir hierdie aangeleentheid nie, weens persoonlike redes.</p> <p><i>Translated: I unfortunately cannot give permission to enter my land for this matter, due to personal reasons.</i></p>

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
				<i>find attached the letter of notification in connection with the environmental studies to be carried out on your land (Portion 5 of Farm Vaalbank 212 IS). The studies are in support of the feasibility of the proposed expansion of the Kranspan Mining Right Area. Please feel free to contact me should you require any further information or have enquiries.</i>	
		22 September 2022	Telephone Call	ABS Africa spoke telephonically with Mr. Anton Fourie to determine why the landowner is refusing access to his property to undertake the required specialist studies for the EIA application.	Mr. Anton Fourie stated that he is against the mining project and does not want to allow any specialist investigations on his property. He indicated that he previously applied for a mining right on his property five years ago and undertook all the relevant specialist studies which was submitted to the DMRE. The landowner advised he has had no feedback from DMRE and was last notified by the DMRE that his application is “in process”. ABS Africa advised the Applicant of the response from Mr. Anton Fourie. Portion 5 of Vaalbank 212 IS has been excluded from the specialist fieldwork.
		09 November 2022	Google Form	Completed the online Google Form and registered as an IAP. Selected the following for Concerns, Questions & Queries on the Scoping Report: Baseline environment and impacts identified, Specialist studies, Health & safety concerns, Social governance, Proposed activity & operations, Public Participation Process.	ABS Africa sent an email to Mr. Anton Fourie on 24 November 2022, stating the following: Dankie dat u gerigistreer het as ‘n Belanghebene via die Google vorm. Neem asb. kennis dat ons u besonderhede in ons datastelsel gevoeg het en sal voortdurend u op hoogte te hou deur die Omvangbepalings- en OIB-proses. Kan u asseblief adviseer indien u op hierdie stadium enige spesifieke

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
					<p>opmerkings oor die Omvangbepalingsverslag het?</p> <p><i>Translated: Thank you for registering as an Interested and Affected Party (IAP) via the Google link form. Kindly note that we have recorded your information in the database and will continue to keep you informed throughout the Scoping and EIA process.</i></p> <p><i>Please can you advise if you have any specific comments on the Scoping Report at this stage?</i></p>
		28 November 2022	Telephone Call	Mr. Anton Fourie called ABS Africa in response to the email he received on 24 November 2022. He enquired about what information was in the Scoping Report and confirmed he had no formal comments to be recorded at this stage.	Acknowledged.
		06 December 2022	Telephone Call and Email	ABS Africa spoke telephonically with Mr. Anton Fourie to request access again to his property to undertake the required specialist studies for the EIA application.	Mr. Anton Fourie agreed that the specialists may undertake the studies on his property. An email was sent to Mr. Anton Fourie to confirm the conversation.
Interested IAP from previous Kranspan MRA EIA	Mr. Koos Davel	29 September 2022	Telephone Call	ABS Africa contacted Mr. Koos Davel telephonically to confirm his contact details in order to be notified about the proposed project and the Scoping & EIA process. During the telephone conversation, Mr. Koos Davel confirmed he did not want to be notified about the project.	<p>An email was sent to Mr. Koos Davel by ABS Africa on 29 September 2022 to confirm the telephone discussion:</p> <p>As discussed, ABS Africa are responsible for the public participation process for the proposed Kranspan Mining Right Extension Project, and this includes notifying potentially interested and affected parties. As per your request, ABS Africa will hereby remove you from the Interested and Affected Party (IAP)</p>

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
					Database for the proposed project. It is hereby confirmed that you do not want to receive any information regarding the project or details regarding the Scoping and EIA Process.
Adjacent landowners/occupiers		20 October 2022	Verbal discussions during on-site notification	During on-site public notification, several discussions were held with adjacent landowners when handing out project notification letters. A summary of the comments/concerns raised by the adjacent landowners included the following: <ul style="list-style-type: none"> Relocation of their households; Noise from blasting; and If the mine will implement local employment. 	The following responses were provided during the discussions: <ul style="list-style-type: none"> There will be no relocation of the households visited as these are adjacent properties to the proposed Mining Right Extension area; Noise impacts from blasting will be assessed in the EIA Phase and depends on the mining schedule; and The Environmental Management Programme (EMPr) will require implementation of the mine Social and Labour Plan which supports local employment.
Mpumalanga Tourism and Parks Agency (MTPA)	Mervyn Lotter	25 October 2022	Email	Please note that I am not the correct person to be sending these notifications to. I do not review or process them. Please send them to Thabile Mnisi (Thabile.Mnisi@mtpa.co.za) or Phumla Nkosi (Phumla.Nkosi@mtpa.co.za). They will ensure that it gets processed and reviewed by one of our Landuse Advisors. I can also confirm that the MTPA requires you to deliver a hardcopy to the following address: MTPA N4 National Road Hall's Gateway Mataffin	Thank you for the reply and sending correct people with contact information. We will update the database and forward it to them.

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
				Mbombela 1200 Att: Thabile Mnisi	
MTPA	Phumla Nkosi	25 October 2022	Email	I hope you are doing well, may you please send the hardcopy of the scoping report to: MTPA N4 Halls Gateway Mataffin 1200 Att: Phumla Nkosi Office G3D	Thank you for contacting us. Please let us know if there is difficulty in downloading the document from our website (http://www.absafrica.com/project-documents/). Alternatively, we can send the document to you to download via another link. No response to date from MTPA.
Thulani Mtsuki Attorneys on behalf of directly affected landowner	Thulani Mtsuki	25 October 2022	Email and letter	Kindly find herewith letter for your kind attention. We act herein on behalf of the trustees and/or lawful beneficiaries for Zamani Community Property Association, who are the registered owners of Portion 7 of the Farm Vaalbank 212 IS Mpumalanga Province. Our client is in possession of your Notice for Environmental Authorisation dated 20 October 2022. Our client would like to register as an Intersted and Affected Part herein and would be pleased if your goodselves will furnish is with copies of the relevant Mining Right and the Prospecting Right on Vaalbank Portions herein. We thank you and look forward to hearing from your goodselves in due course.	Thank you for your letter. We hereby confirm your registration as an IAP on behalf of Zamani Community Property Association and will ensure you are kept informed throughout the Scoping and EIA Process. Please kindly note that there is no Mining Right over Vaalbank at present, the extension of the existing Mining Right Area (MRA) at the Farm Kranspan 49 IT to incorporate the adjacent Prospecting Right Areas (PRAs), namely Farm Vaalbank 212 IS and Roodebloem 51 IT, is currently being applied by Ilima Coal Company through the Section 102 amendment application process as per the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) ("MPRDA"). Ilima have been copied in this correspondence and have advised they will provide you with the Vaalbank Prospecting

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
					Right. If there are any queries related to the Prospecting Right or Section 102 Process in terms of the MPRDA, separate to the Scoping and EIA Process, they can be directed to Ilima (copied in this email). Attached is the renewal of the Vaalbank Prospecting Right for your records.
Directly Affected Landowner: Portion 2 of Roodebloem 51 IT	Bob Fuga Nzimande	31 October 2022	Telephone Call	Mr. Bob Fuga requested a meeting with ABS Africa and Ilima Coal Company to discuss the project, the mining process and planning. He advised that his neighbour would also like to attend the meeting: Mr. Simon Musa Mbokani (Owner of Portion 3 of Roodebloem 51 IT).	A meeting was arranged for 16 November 2022, however, the meeting had to be rescheduled because the landowner was unable to attend the scheduled meeting on his property. It was agreed telephonically with the landowner on 15 November 2022 to meet during the EIA Phase of the project in January 2023.
Directly Affected Landowner: Portion RE/4 and RE/6 of Farm Vaalbank 212 IS	Petra du Plessis	15 November 2022	Email	<p>Kan julle asb vir my die volgende aanstuur:</p> <ol style="list-style-type: none"> Vorm om te registreer as 'n belanghebbende; Afskrif van die Konsep Omvangsbepalingsverslag <p><i>Translated:</i> Can you please send me the following:</p> <ol style="list-style-type: none"> Form to register as a stakeholder; Copy of the Draft Scoping Report 	<p>Baie dankie vir u navrae.</p> <ol style="list-style-type: none"> Vind asb die vorm deur die volgende skakel te volg: https://forms.gle/9q4ZUiXhffS3hzt8, aangesien ons 'n e-pos van u ontvang het, is u besonderhede automaties op ons databasis vasgevang as belanghebbende. Die Konsep Omvangsbepalingsverslag is effens te groot om aan die e-pos te heg, maar is beskikbaar op af te laai vanaf ons webtuiste: http://www.abs-africa.com/project-documents/ . Laat weet gerus indien u nie regkom nie, sodat ons 'n alternatiewe skakel kan stuur om die dokument direk af te laai.

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
					<p><i>Translated:</i></p> <p><i>Thank you very much for your enquiries.</i></p> <p><i>1. Please find the form in the following link: https://forms.gle/9q4ZUiXhffS3hzt8, since we received an email from you, your details are automatically captured on our database as a stakeholder.</i></p> <p><i>2. The Draft Scoping Report is slightly too large to attach to the email, but is available to download from our website: http://www.abs-africa.com/project-documents/ . Please let us know if you cannot obtain it, so that we can send an alternative link to download the document directly.</i></p>
IAP	Anonymous	15 November 2022	Google Form	Registered as an IAP. Did not give consent for their personal information to be used for the purpose of this project.	<p>Acknowledged. IAP added to Database and contact details protected.</p> <p>ABS Africa sent an email to the IAP on 24 November 2022, stating the following: Thank you for registering as an Interested and Affected Party (IAP) via the Google link form. Kindly note that we have recorded your information in the database and will continue to keep you informed throughout the Scoping and EIA process. Please advise how we should record your affiliation with the project (Are you a landowner/ occupier on site/in the approximate area or are you just interested in knowing about the project and process)? Please can you also advise if you have any</p>

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
					<p>specific comments on the Scoping Report at this stage?</p> <p>No response from IAP to date.</p>
Department of Forestry Fisheries and the Environment (DFFE): Biodiversity Conservation	Ms Mmatlala Rabothata	23 November 2022	Email and letter	<p>Please receive the attached comments from Directorate :Biodiversity Conservation for your attention and implementation.</p> <p>Comments on the Draft Scoping Report: The Directorate: Biodiversity Conservation reviewed and evaluated the report. Based on the information provided in the report, the site overlaps within portions of Critical Biodiversity Area (CBA) and Ecological Support Areas (ESAs). There are several surface water features within the proposed Kranspan Mining Right Extension site, including several rivers and streams and at least four wetland types, namely channelled valley bottom wetlands, un-channelled valley-bottom wetlands, depression and seeps. The footprint of the extension area falls within the Amersfoort-Bethal-Carolina Important Bird Area (IBA). The following recommendations should be considered in the next phase of the report:</p> <ul style="list-style-type: none"> All biodiversity specialist studies must be prepared and submitted according to the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998. 	<p>The IAP Database has been updated by adding Birdlife South Africa and the relevant contact details of the DFFE Biodiversity Conservation unit.</p> <p>The desktop environmental sensitivities identified by DFFE have been included in the Scoping Report. The impacts of the proposed development will be assessed by the relevant environmental specialist studies during the EIA Phase, as per the plan of study in section 10.4 of the scoping report.</p> <p>Comments from Birdlife SA will be requested on the Draft EIA Report once the findings of the terrestrial specialist are presented in the EIA Report. All procedures, protocols and biodiversity guidelines have been considered in the Scoping Report and will be considered in the EIA Report and specialist studies.</p>

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
				<ul style="list-style-type: none"> Comments from Birdlife South Africa must be obtained and submitted as part of the final scoping report. The sensitivity Layout Map overlaid with sensitivities and indicating the final footprint for the proposed development avoiding environmentally sensitive areas must be included in the Final Scoping Report. All the relevant National and Provincial biodiversity guidelines must be considered. <p>The Directorate does not support any development within a very highly sensitive area (CBAs) and that will result with significant negative residual impacts after mitigation. In conclusion, please note that all Public Participation Process documents related to Biodiversity EIA review and any other Biodiversity EIA queries must be submitted to the Directorate: Biodiversity Conservation at Email: BCAdmin@environment.co.za for attention of Mr Seoka Lekota.</p>	
		23 January 2023	Email	<p>The following comments on the Final Scoping Report were received from Directorate: Biodiversity Conservation.</p> <p>The Directorate: Biodiversity Conservation reviewed and evaluated the report.</p> <p>The Directorate Biodiversity Conservation has noted the respond in the final scoping report relating to the recommendations made in the Draft Scoping Report and does not have any objections.</p>	The Draft EIAR will be provided to the Department for comment during the EIA public review period.

ORGANISATION	CONTACT PERSON	DATE	CHANNEL OF COMMENT	COMMENTS/ISSUE RECEIVED	RESPONSE PROVIDED
				All Public Participation Process documents related to Biodiversity EIA review and any other Biodiversity EIA queries must be submitted to the Directorate: Biodiversity Conservation at Email: BCAdmin@environment.gov.za for attention of Mr Seoka Lekota.	
Siyathuthuka Community Association	Sbongile Nkambule	March 2023	Telephone and SMS	A meeting has been arranged with the Siyathuthuka Community Association for March 2023 to discuss the project and capture any issues/concerns.	Any issues or concerns raised during the meeting will be included in the Final EIAR.
DMRE	Ms. A Nemulodi	02 December 2022	Email and Letter	Acknowledgement of receipt of Scoping Report.	Acknowledged.
		13 December 2022	Email and Letter	Acceptance of Scoping Report.	Acknowledged.

APPENDIX 7: IMPACT ASSESSMENT



**Ilima Coal Company Kranspan Mining Right Extension,
Near Carolina, Mpumalanga Province**
Impact Assessment Report

March 2023

1 INTRODUCTION

1.1 GENERAL

This Impact Assessment includes an assessment of each identified potentially significant impact and risk, including:

- The nature, significance and consequences of the impact and risk;
- The extent and duration of the impact and risk;
- The probability of the impact and risk occurring;
- The degree to which the impact and risk can be reversed;
- The degree to which the impact and risk may cause irreplaceable loss of resources; and
- The degree to which the impact and risk can be mitigated.

The purpose of the impact assessment was not to identify every possible risk and impact which the proposed project activities may have on the receiving environment. Rather, the assessment was focused on identifying and assessing the most material impacts, commensurate with the nature of the project activity and the characteristics of the receiving environment.

All impacts were assessed in the following phases:

- Construction;
- Operation; and
- Decommissioning and Closure.

1.2 ABS AFRICA METHODOLOGY

In the case of the Specialist Studies, some of the impact assessment methodologies deviated from the approach shown below. However, the quantitative basis for these specialist evaluations of the impacts to specific environmental features still satisfied the intention of the EIA. Where applicable, the impact assessments and significance ratings provided by the respective specialists are included.

The first phase of impact assessment is the identification of the various project activities which may impact upon the identified environmental and social categories. The identification of significant project activities is supported by the identification of the various receiving environmental receptors and resources. These receptors and resources allow for an understanding of the impact pathways and assessment of the sensitivity of the receiving environment to change.

The significance of the impact is then assessed by rating each variable numerically, according to defined criteria as provided in Table 1-1. The purpose of the significance rating of the identified impacts is to develop a clear understanding of the influences and processes associated with each impact.

The severity, spatial scope and duration of the impact together comprise the consequence of the impact; and when summed can obtain a maximum value of 15. The frequency of the activity and the frequency of the impact together comprise the likelihood of the impact and can obtain a maximum value of 10.

The values for likelihood and consequence of the impact are then read from a significance rating matrix as shown in Table 1-2 and Table 1-3.

The model outcome of the impacts is then assessed in terms of impact certainty and consideration of available information. The NEMA Precautionary Principle is applied in instances of uncertainty or lack of information by increasing assigned ratings or adjusting final model outcomes. In certain instances, where a variable or outcome

requires rational adjustment due to model limitations, the model outcomes are adjusted. Arguments and descriptions for such adjustments, as well as arguments for each specific impact assessments are presented in the text and encapsulated in the assessment summary table linked to each impact discussion.

The assessment of impacts is done initially for the scenario where no mitigation measures are implemented. Mitigation measures are then identified and considered for each impact and the analysis repeated in order to determine the significance of the residual impacts (the impact remaining after the mitigation measure has been implemented).

TABLE 1-1: CRITERIA FOR ASSESSING THE SIGNIFICANCE OF IMPACTS

SEVERITY OF IMPACT	RATING	} CONSEQUENCE
Insignificant / non-harmful / non-beneficial	1	
Small / potentially harmful / potentially beneficial	2	
Significant / slightly harmful / slightly beneficial	3	
Great / harmful / beneficial	4	
Disastrous / extremely harmful / extremely beneficial	5	
SPATIAL SCOPE OF IMPACT	RATING	
Activity specific	1	
Area specific	2	
Whole project site / local area	3	
Regional	4	
National/International	5	
DURATION OF IMPACT	RATING	
One day to one month	1	
One month to one year	2	
One year to ten years	3	
Life of operation	4	
Post closure / permanent	5	
FREQUENCY OF ACTIVITY / DURATION OF ASPECT	RATING	} LIKELIHOOD
Annually or less / low	1	
6 monthly / temporary	2	
Monthly / infrequent	3	
Weekly / life of operation / regularly / likely	4	
Daily / permanent / high	5	
FREQUENCY OF IMPACT	RATING	
Almost never / almost impossible	1	
Very seldom / highly unlikely	2	
Infrequent / unlikely / seldom	3	
Often / regularly / likely / possible	4	
Daily / highly likely / definitely	5	

Activity: a distinct process or task undertaken by an organisation for which a responsibility can be assigned.

Environmental aspect: an element of an organisation's activities, products or services which can interact with the environment.

Environmental impacts: consequences of these aspects on environmental resources or receptors.

Receptors: comprise, but are not limited to people or man-made structures.

Resources: include components of the biophysical environment.

Frequency of activity: refers to how often the proposed activity will take place.

Frequency of impact: refers to the frequency with which a stressor will impact on the receptor.

Severity: refers to the degree of change to the receptor status in terms of the reversibility of the impact; sensitivity of receptor to stressor; duration of impact (increasing or decreasing with time); controversy potential and precedent setting; threat to environmental and health standards.

Spatial scope: refers to the geographical scale of the impact.

Duration: refers to the length of time over which the stressor will cause a change in the resource or receptor.

TABLE 1-2: SIGNIFICANCE RATING MATRIX

		CONSEQUENCE (SEVERITY + SPATIAL SCOPE + DURATION)														
LIKELIHOOD (FREQUENCY OF ACTIVITY + FREQUENCY OF IMPACT)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	
	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	
	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	
	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	
	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	
	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	
	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135	
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	

TABLE 1-3: POSITIVE/NEGATIVE MITIGATION RATINGS

COLOUR CODE	SIGNIFICANCE RATING	VALUE	NEGATIVE IMPACT MANAGEMENT RECOMMENDATION	POSITIVE IMPACT MANAGEMENT RECOMMENDATION
	Very High	126-150	Improve current management	Maintain current management
	High	101-125	Improve current management	Maintain current management
	Medium-High	76-100	Improve current management	Maintain current management
	Low-Medium	51-75	Maintain current management	Improve current management
	Low	26-50	Maintain current management	Improve current management
	Very Low	1-25	Maintain current management	Improve current management

2 IMPACT ASSESSMENT

2.1 CLIMATE

Project Activity	Climate		Likelihood		Consequence			Significance Rating
	Phase of Project	Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Equipment and vehicles used during mining activities as well as Eskom electricity emissions	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Greenhouse Gas Emissions	4	3	2	1	4	49
			Significance Post- Mitigation					
			4	2	1	1	4	36

2.2 TOPOGRAPHY

Project Activity	Topography		Project Activity		Consequence			Significance Rating
Site clearing, levelling and cut and fill construction activities, blasting activities and mining of opencast pits	Phase of Project	Construction and Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Change in topography of the area which could have impacts on the sense of place and visual aesthetics as well as potentially result in the interception of natural runoff	5	4	2	2	4	72
			Significance Post- Mitigation					
		5	2	2	1	4	49	

Project Activity	Topography		Project Activity		Consequence			Significance Rating
Rehabilitation activities	Phase of Project	Rehabilitation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Positive - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Topography will be (as far as practically possible) restored to that of the pre-mining state, and must be free draining	5	2	4	3	5	84
			Significance Post- Mitigation					
		5	2	5	3	5	91	

2.3 GEOLOGY

Project Activity	Geology		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction and Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Site clearing, infrastructure siting, blasting activities and excavations required for all mine infrastructure and the opencast pits	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Underlying geology will be affected in that mineral resources will be sterilised or lost	5	4	4	3	4	99
			Significance Post- Mitigation					
			2	1	1	2	5	24

2.4 TERRESTRIAL ECOLOGY – FLORA

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Clearing of vegetation, excavation, and mine operation	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Loss of Natural Habitat of High Ecological Importance	5	5	5	2	5	120
			Significance Post- Mitigation					
			4	4	3	3	4	80

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Clearing of vegetation, excavation, and mine operation	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Loss of Plant Species of Conservation Concern	5	4	4	2	5	99
			Significance Post- Mitigation					
			4	3	3	2	4	63

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction Operational and Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Clearing of vegetation, excavation, and mine operation	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Introduction & proliferation of alien invasive plant species	4	4	4	3	5	96
			Significance Post- Mitigation					
			4	4	3	2	4	72

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operationa	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All staff activities that take place outdoors and illegal access by plant collectors	Impact Classification	Negative - Indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Increased illegal utilisation of plant resources due to an influx of mine personnel and trespasses.	3	3	2	3	5	60
			Significance Post- Mitigation					
			2	2	2	2	4	32

2.5 TERRESTRIAL ECOLOGY – FAUNA

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Loss of habitat and displacement of fauna	5	5	5	2	5	120
			Significance Post- Mitigation					
			5	5	2	2	5	90

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Disruption of ecological connectivity and faunal dispersal	5	5	4	3	4	110
			Significance Post- Mitigation					
			4	4	3	3	4	80

Project Activity	Terrestrial Biodiversity		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Illegal utilisation of faunal resources	3	3	4	3	5	72
			Significance Post- Mitigation					
			2	2	2	3	5	40

2.6 SURFACE WATER

Ecologically sensitive habitat (Wetland units)								
Project Activity		Destruction of sensitive habitat	Likelihood		Consequence			Significance Rating
Destruction of wetland units during all construction phase activities due to heavy machinery and indiscriminate habitat destruction.	Phase of Project	Construction & Operations Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Destruction of wetland habitat during construction phase if buffer zones are not taken into consideration. Destruction of wetland habitat as operations progress.	4	4	4	3	5	96 (MH)
			Significance Post-Mitigation					
			4	4	3	3	5	88 (MH)
Project Activity		Water quality degradation	Likelihood		Consequence			Significance Rating
Impacts to wetland units during the operations phase from runoff pollution, siltation, habitat smothering and vegetation alteration.	Phase of Project	Operations Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Everyday operations that will impact on wetland habitat integrity.	4	4	4	4	5	104 (H)
			Significance Post-Mitigation					
			3	3	3	3	4	63 (LM)
Project Activity		Impact to the hydrological functioning of wetlands	Likelihood		Consequence			Significance Rating
Excavation of deep opencast pits near to wetland habitat that will deviate lateral inter soil flow patterns into the pits that would otherwise sustain wetland units, leading	Phase of Project	Operations Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Direct and Indirect Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity		4	4	4	4	5	104 (H)
			Significance Post-Mitigation					

to loss of water source for the wetland and subsequent loss of the unit.		Dewatering of wetland units and loss of water source that will lead to loss of the impacted unit.	4	4	2	3	5	80(MH)
Project Activity		Fragmentation of linear surface water habitat.	Likelihood		Consequence			Significance Rating
Fragmentation of interconnected wetland units (watercourses) that would otherwise offer migratory corridors.	Phase of Project	Construction/Operations phases	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Secondary Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Fragmentation of interconnected habitat	5	5	3	3	4	100 (MH)
			Significance Post-Mitigation					
			2	2	2	1	1	16 (VL)
Project Activity		Destruction of sensitive habitat	Likelihood		Consequence			Significance Rating
Wetland vegetation alteration following disturbances that will enhance exotic vegetation encroachment.	Phase of Project	All phases of project	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Secondary & Cumulative Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Disturbances that induce invasion of exotic flora	5	5	3	2	5	100 (MH)
			Significance Post-Mitigation					
			1	1	2	1	1	8 (VL)

Soils								
Project Activity		Soil erosion that impacts watercourses and wetland habitat	Likelihood		Consequence			Significance Rating
All construction phase activities that result in soil destabilisation.	Phase of Project	All phases of project	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
	Impact Classification	Secondary & Cumulative Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity		4	4	4	4	5	104 (H)

		Soil erosion will impact watercourses both locally as well as downstream within more established habitat.	Significance Post-Mitigation					
			2	2	2	1	1	16 (VL)

Water quality									
Project Activity		Water quality	Likelihood		Consequence			Significance Rating	
All construction phase and operations phase activities associated with water contamination	Phase of Project	All phases of project	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration		
	Impact Classification	Direct, Secondary & Cumulative Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	Contamination of surface water will impact the integrity of all surface water resources and will reach further downstream to the greater aquatic system.	4	4	4	4	5	104 (H)	
			Significance Post-Mitigation						
		3	3	3	2	4	54 (LM)		

2.7 GROUNDWATER

Project Activity	Geohydrology		Likelihood		Consequence			Significance Rating	
Impact on groundwater during the construction phase of mining	Phase of Project	Construction	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	20	
	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	No significant impacts on groundwater are expected during the construction phase	2	2	1	1	3		
			Significance Post- Mitigation						
2	2	1	1	3	20				
Project Activity	Geohydrology		Likelihood		Consequence			Significance Rating	
Impact of mining on wetlands and springs	Phase of Project	Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	72	
	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	Wetlands and springs may not function optimally due to lowering in groundwater table as a result of mine dewatering. Wetlands/springs may be lost or mined out in some areas. Mitigation: Implement and maintain concurrent rehabilitation to reduce the duration of impacts and allow recovery of wetlands/springs	4	4	4	2	3		
			Significance Post- Mitigation						
3	3	4	2	3	54				

Project Activity	Geohydrology		Likelihood		Consequence			Significance Rating	
Destroying of private boreholes during opencast mining	Phase of Project	Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	120	
	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity		5	5	5	2	5		

		Loss of access to groundwater by existing private groundwater users. Mitigation: Affected users must be provided with a negotiated and suitable alternative	Significance Post- Mitigation					
			5	2	2	2	5	63
Project Activity	Geohydrology		Likelihood		Consequence			Significance Rating
	Phase of Project	Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Lowering of groundwater levels as a result of mine dewatering	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Lowering of groundwater levels in private boreholes, thus affecting the performance of the boreholes that fall within the dewatering cone. Mitigation: Implement an effective groundwater level monitoring plan during the planning phase of mining. Affected users must be provided with a negotiated and suitable alternative	4	4	3	3	4	80
			Significance Post- Mitigation					
			4	4	2	2	4	64
Project Activity	Geohydrology		Likelihood		Consequence			Significance Rating
	Phase of Project	Operational and post closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Spread of contamination from underground and opencast mining areas	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Contamination of groundwater in private boreholes, making the groundwater unfit for use. Mitigation: Implement an effective groundwater level monitoring plan during the planning phase of mining. Affected users must be provided with a negotiated and suitable alternative	4	4	3	3	5	88
			Significance Post- Mitigation					
			4	4	2	2	5	72
Project Activity	Geohydrology		Likelihood		Consequence			

	Phase of Project	Post closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
Decant from pits	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Uncontrolled decant will impact on groundwater quality, wetland functioning and surface water quality. Mitigation: Implement a sound monitoring programme during the operational phase. Implement the Decant Management Plan during decommissioning of mining	5	5	4	2	5	110
			Significance Post- Mitigation					
			2	3	3	2	5	50

2.8 AIR QUALITY

Project Activity	Air Quality		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction and Decommissioning / Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Elevated PM ₁₀ and PM _{2.5} Concentrations and dustfall due to unmitigated activities	Impact Classification	Negative -Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Elevated PM ₁₀ and PM _{2.5} Concentrations and Elevated Dust Fall Levels	4	4	2	1	3	48
			Significance Post- Mitigation					
			4	4	2	1	3	48

Project Activity	Air Quality		Likelihood		Consequence			Significance Rating
	Phase of Project	Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Elevated PM ₁₀ and PM _{2.5} Concentrations	Impact Classification	Negative- Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Elevated PM ₁₀ and PM _{2.5} Concentrations	4	5	4	3	3	90
			Significance Post- Mitigation					
			4	4	3	3	3	72
Project Activity	Air Quality		Likelihood		Consequence			Significance Rating
	Phase of Project	Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Dustfall due to unmitigated activities	Impact Classification	Negative- Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Elevated Dust Fall Levels	4	5	3	2	3	72
			Significance Post- Mitigation					
			4	4	2	2	3	56

2.9 NOISE

Project Activity	Noise		Likelihood		Consequence			Significance Rating	
	Phase of Project	Construction and Decommissioning / Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration		
All construction and decommissioning activities	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	Elevated Noise Levels	4	4	3	3	3	72	
			Significance Post- Mitigation						
			4	3	3	2	3	56	
Project Activity	Noise		Likelihood		Consequence			Significance Rating	
	Phase of Project	Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration		
Blasting, mining operations, haulage	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	Elevated Noise Levels	4	4	3	3	4	80	
			Significance Post- Mitigation						
			4	3	3	2	4	63	

2.10 VISUAL AESTHETICS

Project Activity	Visual Aesthetics		Likelihood		Consequence			Significance Rating	
	Phase of Project	Construction and Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration		
Construction activities and opencast mining	Impact Classification	Negative - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	Visual disturbance of the sense of place	4	5	5	3	4	108	
			Significance Post- Mitigation						
			4	4	4	2	4	80	
Project Activity	Visual Aesthetics		Likelihood		Consequence			Significance Rating	
	Phase of Project	Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration		
Rehabilitation	Impact Classification	Positive - Direct Impact	Significance Pre-Mitigation						
	Resulting Impact from Activity	Visual improvement of the sense of place	4	5	5	3	4		
			Significance Post- Mitigation						
			4	4	4	2	4		

2.11 SOCIO-ECONOMIC

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Positive - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Coal Production for Electricity Generation	5	5	5	5	4	140 Very High
			Significance Post- Mitigation					
			-	-	-	-	-	-

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Positive - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Economic Growth	5	5	5	5	4	140 Very High
			Significance Post- Mitigation					
			-	-	-	-	-	-

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All activities involving employment and procurement of goods and services	Impact Classification	Positive - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Employment Opportunities	5	5	5	2	4	110 High
			Significance Post- Mitigation					
			5	5	5	3	4	120 High

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction, Operational and Decommissioning and Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All activities involving employment and procurement of goods and services	Impact Classification	Positive - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Skills Development and Education Opportunities	5	4	3	3	5	99 Medium-High
			Significance Post- Mitigation					
			5	5	4	3	5	120 High

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	All	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All activities involving employment and procurement of goods and services	Impact Classification	Positive - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Local Economic Development	3	4	4	3	4	77 Medium-High
			Significance Post- Mitigation					
			3	5	5	3	4	96 Medium-High

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Positive - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Government Revenue and Royalties	3	4	3	3	4	70 Low-Medium
			Significance Post- Mitigation					
			-	-	-	-	-	-

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction, Operational and Decommissioning and Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Change in Land Use – Loss of Agricultural Land	5	5	4	2	5	110 High
			Significance Post- Mitigation					
			4	5	3	1	4	72 Low-Medium

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction, Operational and Decommissioning and Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Change in Land Use – Loss of Jobs	5	5	5	2	5	120 High
			Significance Post- Mitigation					
			4	5	3	1	4	72 Low-Medium

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All activities involving employment and procurement of goods and services	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Population Influx	3	5	3	3	3	72 Low-Medium
			Significance Post- Mitigation					
			3	4	3	3	2	56 Low-Medium

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All activities involving employment and procurement of goods and services	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Security Risks	4	4	5	2	4	88 Medium-High
			Significance Post- Mitigation					
			2	3	5	2	4	55 Low-Medium

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
All mining activities	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Mine Health and Safety: General	4	5	5	3	4	108 High
			Significance Post- Mitigation					
			2	2	5	3	4	48 Low

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Operation	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Opencast mining and stockpiling	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Mine Health and Safety: Spontaneous Combustion of Coal	4	4	5	3	4	96 Medium-High
			Significance Post- Mitigation					
			4	3	3	2	2	49 Low

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Pre-Construction, Construction and Operational	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Movement of man and materials	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Community Health and Safety: Diseases	4	4	4	3	5	96 Medium-High
			Significance Post- Mitigation					
			1	2	2	3	4	27 Low

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Construction, Operational, Decommissioning and Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Movement of man and materials	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Community Health and Safety: Traffic and Road Safety	4	5	4	2	4	90 Medium-High
			Significance Post- Mitigation					
			4	2	2	2	4	48 Low

BLASTING – GROUND VIBRATION								
Project Activity	Blast-induced ground vibration resulting in high irritation to neighbours closer than 1200 m from blasting		Likelihood		Consequence			
Overburden and midburden blasting with blasting hole depths between 20 and 30 m	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Minor damage to buildings (real or perceived by building owners) in the form of cracks in walls. Irritation of and complaints from homeowners	4	4	3	3	4	80
			Significance Post-Mitigation					
		4	3	2	2	4	56	
Project Activity	Blast-induced ground vibration resulting in high irritation to neighbours closer than 1200 m from blasting		Likelihood		Consequence			
Overburden and midburden blasting with blasting hole depths between 10 and 20 m	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Minor damage to buildings (real or perceived by building owners). Irritation of and complaints from homeowners	4	2	1	3	4	48
			Significance Post-Mitigation					
		4	2	1	1	4	36	

Project Activity	Blast-induced ground vibration resulting in high irritation to neighbours closer than 500 m from blasting		Likelihood		Consequence			
Overburden and midburden blasting with blasting depths between 5 and 11 m	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Minor damage to buildings (real or perceived by building owners). Irritation of and complaints from homeowners	4	4	3	3	4	80
			Significance Post-Mitigation					
			4	3	2	2	4	56
Project Activity	Blast-induced ground vibration resulting in high irritation to neighbours farther than 500 m from blasting		Likelihood		Consequence			
Overburden and midburden blasting with blasting hole depths between 5 and 11 m	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Minor damage to buildings (real or perceived by building owners). Irritation of and complaints from homeowners	4	2	1	3	4	48
			Significance Post-Mitigation					
			4	2	1	1	4	36

Project Activity	Blast Induced vibration causing damage to wells		Likelihood		Consequence			Significance Rating
	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Overburden and midburden blasting with blasting depths between 20 and 30 m	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Loss of water perceived to be caused by blasting induced vibration	4	2	1	2	4	42
			Significance Post-Mitigation					
			4	2	1	2	4	42
Project Activity	Blast Induced vibration causing damage to road surfaces and earth dams		Likelihood		Consequence			Significance Rating
	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Overburden and midburden blasting with blasting hole depths between 20 and 30 m	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Road substrate and compacted earth dams may suffer desegregation from high ground vibration radiated by blasting	4	4	3	2	4	72
			Significance Post-Mitigation					
			4	2	1	2	4	42

BLASTING – FLY ROCK								
Project Activity	Damage to structures or injury to people closer than 1000 m caused by fly rock		Likelihood		Consequence			
All blasting	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Serious to fatal injury or damage to property and infrastructure caused by uncontrolled fly rock	4	4	5	3	4	96
			4	2	2	1	4	42

BLASTING – AIR BLAST								
Project Activity	Damage to structures or complaints from neighbours caused by high air blast		Likelihood		Consequence			
All blasting, but particularly presplit and coal blasting	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Direct Impact	Significance Pre-Mitigation					
	Resulting Impact from Activity	Complaints or minor damage to buildings caused by high air blast levels	4	4	5	4	4	104
			4	3	2	1	4	49

BLASTING – DISSOLVED NITRATES

Project Activity	Water Pollution from Dissolved Nitrates		Likelihood		Consequence				
All blasting	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating	
	Impact Classification	Cumulative	Significance Pre-Mitigation						
	Resulting Impact from Activity	Accumulation of dissolved nitrates in the water system causing an increase in algal and weed growth in waterways	5	4	4	4	5	117	
			Significance Pre-Mitigation						
			1	2	1	1	4	18	

BLASTING – DUST AND FUMES

Project Activity	Dust and fumes generated by blasting affecting health and wellbeing of surrounding neighbours		Likelihood		Consequence				
All blasting	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating	
	Impact Classification	Cumulative	Significance Pre-Mitigation						
	Resulting Impact from Activity	Dust and fumes are a risk to health of people within a zone of 2 to 3 km from blasting	4	4	4	3	5	96	
			Significance Post- Mitigation						
			4	2	2	2	4	48	

BLASTING – VIBRATION AND FLY ROCK: HERITAGE SITES AND GRAVES

Project Activity	Damage to ruins, graves and heritage sites caused by vibration		Likelihood		Consequence			
All blasting	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Cumulative	Significance Pre-Mitigation					
	Resulting Impact from Activity	Vibration may cause damage to structures and graves	4	4	3	3	4	80
			Significance Post- Mitigation					
			4	2	1	2	4	42
Project Activity	Damage to ruins, graves and heritage sites caused by fly rock		Likelihood		Consequence			
All blasting	Phase of Project	Operational Phase	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	Significance Rating
	Impact Classification	Cumulative	Significance Pre-Mitigation					
	Resulting Impact from Activity	Fly rock impact will cause damage to structures and graves.	4	4	4	4	4	96
			Significance Post- Mitigation					
			4	2	2	2	4	48

Project Activity	Socio-Economic		Likelihood		Consequence			Significance Rating
	Phase of Project	Decommissioning and Post Closure	Frequency of Activity	Frequency of Impact	Severity	Spatial Scope	Duration	
Closure of the mine	Impact Classification	Negative - Direct and indirect	Significance Pre-Mitigation					
	Resulting Impact from Activity	Mine Closure and Associated Effects on the Local Economy	1	5	5	3	5	78 Medium-High
			Significance Post- Mitigation					
			1	4	3	3	5	55 Low-Medium

2.12 SOILS AND AGRICULTURAL LAND CAPABILITY

2.12.1 IMPACT ASSESSMENT METHODOLOGY

TABLE 2-1: IMPACT ASSESSMENT RATINGS

Aspect	Score	Criteria
Duration	7	Permanent
	6	Beyond project life
	5	Project Life
	4	Long term
	3	Medium term
	2	Short term
	1	Immediate
Extent	7	International
	6	National
	5	District
	4	County
	3	Local
	2	Site-specific
	1	Very limited
Intensity	-7	Extremely high - negative
	-6	Very high - negative
	-5	High - negative
	-4	Moderately high - negative
	-3	Moderate - negative
	-2	Low - negative
	-1	Very low - negative
	0	Negligible
	1	Very low - positive
	2	Low - positive
	3	Moderate - positive
	4	Moderately high - positive
	5	High - positive
	6	Very high - positive
	7	Extremely high - positive
Probability	7	Certain
	6	Highly probable
	5	Likely
	4	Probable
	3	Unlikely

	2	Improbable
	1	Highly unlikely
Significance	>-108	Major - Negative
	(-73) – (-108)	Moderate - Negative
	(-36) – (-72)	Minor - Negative
	(-1) – (-35)	Negligible - Negative
	1 - 35	Negligible – Positive
	36 – 72	Minor – Positive
	73 – 108	Moderate – Positive
	>108	Major - Positive

2.12.2 IMPACT ASSESSMENT

TABLE 2-2: ANCILLARY INFRASTRUCTURE (OFFICES AND WORKSHOPS)

Code	Phase	Impact	Pre-mitigation					Post-mitigation				
			Duration	Extent	Intensity	Probability	Significance	Duration	Extent	Intensity	Probability	Significance
Agriculture	Planning	Loss of land capability	Immediate	Very limited	Low - negative	Unlikely	Negligible - negative	Immediate	Very limited	Very low - negative	Improbable	Negligible - negative
Agriculture	Construction	Loss of land capability	Short term	Site-specific	Moderately high - negative	Likely	Minor - negative	Short term	Site-specific	Moderate - negative	Probable	Negligible - negative
Agriculture	Operational	Loss of land capability	Project life	Site-specific	Moderate - negative	Probable	Negligible - negative	Life term	Site-specific	Low - negative	Unlikely	Negligible - negative
Agriculture	Decommissioning	Loss of land capability	Medium term	Site-specific	Moderate - negative	Probable	Negligible - negative	Short term	Site-specific	Low - negative	Unlikely	Negligible - negative
Agriculture	Rehabilitation	Loss of land capability	Medium term	Site-specific	Very low - negative	Highly unlikely	Negligible - negative	Short term	Site-specific	Very low - negative	Highly unlikely	Negligible - negative

TABLE 2-3: STOCKPILING

Code	Phase	Impact	Pre-mitigation						Post-mitigation					
			Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
Agriculture	Planning	Loss of land capability	Immediate	Very limited	Very low - negative	Negligible	Unlikely	Negligible - negative	Immediate	Very limited	Very low - negative	Negligible	Improbable	Negligible - negative
Agriculture	Construction	Loss of land capability	Short term	Site-specific	Moderately high - negative	Slightly detrimental	Probable	Negligible - negative	Short term	Site-specific	Moderate - negative	Slightly detrimental	Unlikely	Negligible - negative
Agriculture	Operational	Loss of land capability	Medium term	Local	High - negative	Highly detrimental	Probable	Minor - negative	Beyond project life	Site-specific	Moderate - negative	Moderately detrimental	Unlikely	Negligible - negative
Agriculture	Decommissioning	Loss of land capability	Short term	Site-specific	Moderately high - negative	Slightly detrimental	Unlikely	Negligible - negative	Short term	Site-specific	Moderate - negative	Slightly detrimental	Improbable	Negligible - negative
Agriculture	Rehabilitation	Loss of land capability	Medium term	Site-specific	Moderate - negative	Slightly detrimental	Unlikely	Negligible - negative	Medium term	Site-specific	Low - negative	Slightly detrimental	Highly unlikely	Negligible - negative

TABLE 2-4: OPENCAST MINING

Code	Phase	Impact	Pre-mitigation						Post-mitigation					
			Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
Agriculture	Planning	Loss of land capability	Immediate	Very limited	Very low - negative	Negligible	Improbable	Negligible - negative	Immediate	Very limited	Very low - negative	Negligible	Highly unlikely	Negligible - negative
Agriculture	Construction	Loss of land capability	Long term	Local	Very High - negative	Highly detrimental	Certain	Moderate - negative	Medium term	Local	Moderate - negative	Highly detrimental	Highly Probable	Minor - negative
Agriculture	Operational	Loss of land capability	Long term	Local	Very high - negative	Highly detrimental	Certain	Moderate - negative	Medium term	Local	Moderate - negative	Highly detrimental	Highly probable	Minor - negative
Agriculture	Decommissioning	Loss of land capability	Medium term	Local	Moderately high - negative	Moderately detrimental	Probable	Minor - negative	Short term	Site - specific	Moderate - negative	Moderately detrimental	Probable	Minor - negative
Agriculture	Rehabilitation	Loss of land capability	Long term	Site - specific	Moderate - negative	Moderately detrimental	Unlikely	Negligible - negative	Long term	Site - specific	low - negative	Moderately detrimental	Unlikely	Negligible - negative

2.13 HYDROPEDELOGY

2.13.1 IMPACT ASSESSMENT METHODOLOGY

The criteria used for assessing the significance of the impacts is presented below. The procedure considers the current environment, the details of the proposed development and the findings of the hydrogeological study. Both positive and negative impacts resulting from the development on the water resources are considered. The significance of the impact is dependent on the consequence and the probability that the impact will occur:

$$\text{Significance} = (\text{Extent} + \text{Duration} + \text{Magnitude}) \times \text{Probability}$$

Each criterion is given a score based on the definitions given below. Positive impacts can also be assessed by ranking the Magnitude criteria from high (10) to low (1) in terms of restoring ecosystem patterns, processes, and functioning. Although the criteria used for the assessment of impacts attempts to quantify the significance, it is important to note that the assessment is generally a qualitative process and therefore the application of this criteria is open to interpretation. The process adopted will therefore include the application of scientific measurements and professional judgement to determine the significance of environmental impacts associated with the project. The assessment thus largely relies on experience of the EAP and the information from this hydrogeological study.

ASPECTS OF THE IMPACT	DESCRIPTION OF THE CRITERIA	RATING
MAGNITUDE	Negligible: Ecosystem pattern, processes and functions will not be impacted	1
	Minor: Minor impact on the environment and processes will occur	2
	Low: Slight impact on ecosystem pattern, process, or function	4
	Moderate: Valued, important or sensitive processes or communities are negatively impacted but general processes and functions will continue in altered way	6
	High: Environment affected to the extent that ecosystem patterns, processes and functions are altered or may cease temporarily. Valued, important and sensitive systems or communities are substantially affected.	8
	Very high: Ecosystem pattern, process and functions are completely destroyed and may permanently cease.	10
EXTENT	Site only: Impact remains within footprint	1
	Local: Impact include areas immediately adjacent to site	2
	Regional: Impact includes the greater surrounding area of the site	3
	National: Extent of the impact is applicable to South Africa	4
	Global: Impact has global significance	5
DURATION	Very short-term: impact lasts for a very short time (less than a month)	1
	Short-term: impact lasts for a short time (months but less than a year)	2
	Medium-term: impact lasts for the for more than a year but less than the life of operation.	3
	Long-term: impact occurs over the operational life of the proposed extension.	4
	Residual: impact is permanent (remains after mine closure)	5
PROBABILITY	Highly unlikely: the impact is highly unlikely to occur	1
	Unlikely: the impact is unlikely to occur	2
	Possible: the impact could possibly occur	3
	Probable: the impact will probably occur	4
	Definite: the impact will occur	5

Descriptors	Definitions	Score
Low	The perceived impact will not have a noticeable negative influence on the environment and is unlikely to require management intervention that would incur significant cost.	0 – 19
Low to Moderate	The perceived impact is considered acceptable, and application of recommended mitigation measures recommended.	20 – 39
Moderate	The perceived impact is likely to have a negative effect on the receiving ecosystem, and is likely to influence the decision to approve the activity. Implementation of mitigation measures is required, as is routine monitoring to ensure effectiveness of recommended mitigation measures.	40 – 59
Moderate to High	The perceived impact will have a significant impact on the receiving ecosystem, and will likely to have an influence on the decision-making process. Strict implementation of mitigation measures as provided is required, and strict monitoring and high levels of compliance and enforcement in respect of the impact in question are required.	60 – 79
High	The impact on the receiving ecosystem is considered of high significant and likely to be irreversible, and therefore highly likely to result in a fatal flaw for the project. Alternatives to the proposed activity are to be investigated as impact will have an influence on the decision-making process.	80 - 100

2.13.2 IMPACT ASSESSMENT

TABLE 2-5: INCREASED EROSION AND SEDIMENTATION DUE TO INCREASE OVERLAND FLOW ON THE ENVIRONMENT

	Without Mitigation	With Mitigation
Magnitude	Moderate (6)	Low (4)
Extent	Local (2)	Local (2)
Duration	Long-term (4)	Short-term (2)
Probability	Probable (4)	Possible (3)
Significance	48	24

TABLE 2-6: DECREASED LATERAL FLOW ON WETLAND REGIMES AND WATER RESOURCES

	Without Mitigation	With Mitigation
Magnitude	High (8)	Low (4)
Extent	Local (2)	Local (2)
Duration	Residual (5)	Medium term (3)
Probability	Probable (4)	Probable (4)
Significance	60	36

2.14 HERITAGE RESOURCES

2.14.1 IMPACT ASSESSMENT METHODOLOGY

The criteria below are used to establish the impact rating on sites:

- The nature, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The extent, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- The duration, wherein it will be indicated whether:
 - the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
 - the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
 - medium-term (5-15 years), assigned a score of 3;
 - long term (> 15 years), assigned a score of 4; or
 - permanent, assigned a score of 5;
- The magnitude, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The probability of occurrence, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The significance, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- the status, which will be described as either positive, negative or neutral.
- the degree to which the impact can be reversed.
- the degree to which the impact may cause irreplaceable loss of resources.
- the degree to which the impact can be mitigated.

The significance is calculated by combining the criteria in the following formula:

$$S = (E+D+M) P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

2.14.2 IMPACT ASSESSMENT

TABLE 2-7: RECORDED STRUCTURES (C003, C006, C007, C010A, C015A, C016, C101)

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	Without mitigation	With mitigation (Preservation/recording)
Extent	Site specific (1)	Site specific (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Moderate (6)	Minor (2)
Probability	Probable (3)	Not Probable (2)
Significance	36 (Medium)	16 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	Yes

TABLE 2-8: RUINS (KP 12, KP 13, KP 17, KP 21, KP 22, C001, C012, C013, C017, C024, C025)

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	Without mitigation	With mitigation (Preservation/recording)
Extent	Site specific (1)	Site specific (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (4)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	30 (Low to Medium)	24 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	Yes

TABLE 2-9: STONE CAIRNS (KP19 AND C102)

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	Without mitigation	With mitigation (Preservation/recording)
Extent	Site specific (1)	Site specific (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (4)	Minor (2)
Probability	Probable (3)	Probable (3)
Significance	30 (Low to Medium)	24 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	Yes

TABLE 2-10: BURIAL SITES (KP 14, KP 18, C004, C010B, C010C, C014, C015B, C020, C027, C103 AND C105).

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.		
	Without mitigation	With mitigation (Preservation/recording)
Extent	Local (2)	Local (2)
Duration	Permanent (5)	Permanent (5)
Magnitude	Moderate to high (7)	Moderate (6)
Probability	Highly Probable (4)	Not Probable (2)
Significance	56 (Medium to high)	26 (Low)
Status (positive or negative)	Negative	Negative
Reversibility	Not reversible	Not reversible
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	Yes

2.15 PALAEOLOGICAL RESOURCES

2.15.1 IMPACT ASSESSMENT METHODOLOGY

PART A: DEFINITION AND CRITERIA		
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national
PROBABILITY (of exposure to impacts)	H	Definite/ Continuous
	M	Possible/ frequent
	L	Unlikely/ seldom

2.15.2 IMPACT ASSESSMENT

PART B: ASSESSMENT		
SEVERITY/NATURE	H	-
	M	-
	L	Soils do not preserve plant fossils; so far there are no records from the Vryheid formation of plant or animal fossils in this region so it is very unlikely that fossils occur on the site. The impact would be very unlikely.
	L+	-
	M+	-
	H+	-
	DURATION	L
M		-
H		Where manifest, the impact will be permanent.
SPATIAL SCALE	L	Since the only possible fossils within the area would be fossil plants from the <i>Glossopteris</i> flora in the shales, the spatial scale will be localised within the site boundary.
	M	-
	H	-
PROBABILITY	H	-
	M	-
	L	It is extremely unlikely that any fossils would be found in the loose sand that will be developed for infrastructure but it is unknown what lies below the soils. Therefore, a Fossil Chance Find Protocol should be added to the eventual EMPr.