

APPENDIX 1

COMPANY PROFILE



Prime Resources (Pty) Ltd
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COMPANY PROFILE

Prime Resources (Pty) Ltd is a medium-sized group of consulting environmental engineers and scientists serving clients across a wide range of industries, although the majority of our project work is based around natural resources, waste and mining.

The company was established in Johannesburg in 2003. Our head offices are located in Parktown North, Johannesburg, South Africa.

Prime Resources employs a talented and innovative group of professional people. We also have an extensive network of specialist sub-contractors who, together with our team, provide specialist environmental and civil design services. We provide consulting services and solutions to clients in a wide range of fields including:

- Project Management and implementation of environmental solutions
- Environmental Social Impact Assessments (ESIA) and Environmental Management Programmes (EMPr)
- Public consultation and engagement with Interested and Affected Parties (IAPs)
- Water Use Licence Applications (WULA)
- Waste management strategies and licensing
- Mining Right Applications
- Mine closure and rehabilitation planning
- Social and Labour Plans (SLP)
- Environmental and social compliance auditing and performance assessments
- Geographic Information Systems (GIS) services
- Environmental / civil / geotechnical engineering solutions
- Geotechnical and tailings dam assessments
- Feasibility studies
- Environmental advisors on purchase and sale transactions – Independent Technical Advisors
- Environmental and social due diligence and risk assessments both in terms of national legislation and international best practice
- Advising on compliance with international best practice, most importantly the Equator Principles, IFC Performance Standards, and World Bank EHS Guidelines

KEY STAFF AND QUALIFICATIONS

PROFESSIONAL STAFF	ROLE	QUALIFICATIONS
Peter Theron	Company Director Environmental Engineer Project Manager	Professional Engineer (Pr. 950329) BSc Eng. (Civil) GDE Environmental Engineering, Tailings & Geotechnical
Gené Main	Project Manager Principal Environmental Scientist	Pr. Sci. Nat. (Environmental Science) Registered Environmental Assessment Practitioner (EAP) MSc Botany BSc (Hons) Environmental Science
Dr Bronwyn Grover	Environmental Scientist Geochemistry	Pr. Sci. Nat. (Environmental Science) PhD Environmental Analytical Chemistry BSc Geology and Chemistry
Dr Fiona Paumgarten	Social Environmental Scientist	PhD in Philosophy BSc (Masters) Environmental Science
Fernanda Smook	Office Manager	Business Management courses
Lindsay Lightfoot	Senior Social Scientist	MA Environmental Science BA (Hons) Environmental Science
Louise Jones	Senior Environmental Scientist GIS Specialist	MSc Environmental Sciences BSc (Hons) Applied Chemistry
Monique van der Westhuizen	Environmental Scientist	BSc (Hons) Hydrogeology BSc Environmental and Engineering Geology
Stephan Geyer	Senior Civil Engineer Geotechnical Engineer	BSc Eng. (Civil)
Stephen Tarlton	Senior Environmental Scientist	Pr. Sci. Nat. (Environmental Science) MSc Plant conservation ecology BSc Plant Sciences and Ecology

ASSOCIATES:

PROFESSIONAL STAFF	ROLE	QUALIFICATIONS
Niel Scheepers	Civil Engineering Technician	B Tech (Civil)

PROJECT EXPERIENCE

Prime Resources has considerable in-house experience in the technical and civil design of mine and waste residue storage facilities, including geotechnical engineering, geochemical evaluation, barrier selection and design, hydrogeology and wastewater containment.

Our in-house technical project team includes Peter Theron, Director of Prime Resources and a Professional Engineer (Civil) with over 33 years' experience and specialising in Environmental Engineering, Tailings, Waste Management and Geotechnical Design.

We have further associated ourselves with a number of specialist service providers whom we work together with to provide a complete range of design solutions, including civil engineering technicians and draughtsmen, hydrogeologists and hydrologists.

INTERNATIONAL PROJECTS

- **Al Amar Tailings Storage Facility Design, Saudi Arabia**
 - Tailings and Waste disposal aspects of Al Amar Tailings Retreatment Project
 - Detailed design of the liner system and contract documentation
- **Minas Moatize due diligence, Mozambique**
 - Review of environmental, social and legislative aspects
 - Review of the waste disposal discard disposal aspects
- **Lemur Resources Coal Project, Madagascar**
 - High level review of the coal discard, environmental and social work undertaken during PFS
- **Avesoro New Liberty Access Road Review, Liberia**
 - Review of geotechnical, road design aspects
- **Tri-K due diligence, Guinea**
 - Review of environmental, social and legislative aspects
 - Review of the waste disposal discard disposal
 - Compilation of a Stage 2 Due Diligence report
- **Segilola Gold due diligence, Nigeria**
 - Review of environmental, social, geochemical and tailings aspects
 - Compilation of a Stage 2 Due Diligence report
- **Ar Rjum Due Dilligence, Saudi Arabia**
 - Independent Technical Review of tailings aspects
- **Nouvelle Gabon Manganese, Gabon**
 - Review of environmental, social, geochemical and tailings aspects
 - Compilation of a Stage 1 high level report
- **Itasca Africa Lubambe Extension Project, Zambia**
 - Review of environmental, social and legislative aspects for Pre-Feasibility Study
 - Compilation of an integrated environmental and social report
- **Araguaia Nickel Project, Brazil**
 - Detailed design of slag disposal facility for Feasibility Study
 - Site geotechnical investigations
 - Detailed design of cooling water dam and river abstraction pipeline

- **Lindi Jumbo Graphite Project, Tanzania**
 - Surface geotechnical study
 - Site selection for tailings storage facility
 - Pre-Feasibility Study design for tailings storage facility
 - Definitive Feasibility Study design for tailings storage facility
 - Terracing design for plant infrastructure
- **Cacata Phosphate Project, Angola**
 - Environmental licensing according to Angolan legislative requirements
 - Environmental and Social Impact Assessment process according to international best practice
- **Ganajur Gold Project, India**
 - Review of environmental aspects for Feasibility Study
 - Surface geotechnical study
 - Site selection for tailings storage facility
 - Feasibility Study design for tailings storage facility
- **Salamanca Uranium Project, Spain**
 - Feasibility Study design for lined surface waste disposal facilities
 - Feasibility Study design and detailing for an in-pit waste disposal liner system
- **Mpokoto Gold Project, Democratic Republic of Congo**
 - Surface geotechnical study
 - Site selection for tailings storage facility
 - Pre-Feasibility Study design for tailings storage facility
 - Bankable Feasibility Study design for tailings storage facility
 - Terracing design for plant infrastructure
- **Unki Platinum Slag Storage Facility, Zimbabwe**
 - Geotechnical investigation for the slag stockpile area and borrow material;
 - Detailed design for construction of a slag stockpile and water management infrastructure.
- **Olovo Terrace Design, Bosnia**
 - Geotechnical design of a terrace for a run-of-mine ore pad and access ramp.
- **Caula Graphite Project, Mozambique**
 - Site selection and sizing of a graphite tailings storage facility
 - Scoping level design aspects including seepage management, surface water management
- **Cinovec Project, Czech Republic**
 - Pre-feasibility Study (PFS) for the waste rock disposal facility
 - Pre-feasibility Study (PFS) for the terracing and earthworks
- **Lucunga Phosphate Project, Angola**
 - Environmental licensing according to Angolan legislative requirements
- **Veduga Gold Project, Russia**
 - Technical review of environmental and mine waste disposal aspects
- **Ghaghoo Diamond Project, Botswana**
 - Independent technical review of the environmental, social and permitting documentation according to the Equator Principles, IFC Performance Standards, and World Bank EHS Guidelines
 - Preparation of an Equator Principles environmental and social action plan

- **Debswana Diamond Projects, Botswana**
 - Peer review of environmental and mine waste aspects for Pre-Feasibility Studies
- **Liqhobong Diamond Mine, Lesotho**
 - Independent technical review of the environmental and social aspects, permitting, water management and residue management - according to the Equator Principles, IFC Performance Standards, and World Bank EHS Guidelines
- **Koidu Diamond Project, Sierra Leone**
 - Review of environmental, social, groundwater and tailings documentation for compliance with Equator Principles, IFC Performance Standards and EHS Guidelines
- **Araguaia Nickel Project, Brazil**
 - Environmental and social baseline report Pre-Feasibility Study
 - Preliminary design of slag disposal facility for Pre-Feasibility Study
- **Maminskoye Gold Project, Central Urals, Russia**
 - Environmental and social audit of the Pre-Feasibility Study
- **Cabinda Phosphate Project, Angola**
 - Social impact plan and Environmental Management Plan for prospecting
 - Environmental and social baseline report towards the Definitive Feasibility Study stage
- **Owere Gold Project, Ghana**
 - Independent technical review of the environmental, social and permitting documentation
- **Kinsevere Copper Project, Democratic Republic of Congo**
 - Review of tailings dam risks and opportunities for compliance with Equator Principles
- **Kipoi Copper Mine, Democratic Republic of Congo**
 - Review of environmental, social, heap leach and tailings of the Kipoi Central RDFS operations, Tiger Resources
 - Independent technical review of the environmental, social and permitting documentation according to the Equator Principles, IFC Performance Standards, and World Bank EHS Guidelines
- **Zanaga Iron Ore Project, Democratic Republic of Congo**
 - Environmental and social section of the order of magnitude study
- **Pakrut Gold Mine, Tajikistan**
 - Social and Environmental Impact Assessment process, baseline evaluations according to international best practice requirements
- **Lece Gold Mine, Serbia**
 - Tailings technical review and concept design work for a tailings retreatment project
- **Langer Heinrich Uranium Mine, Namibia**
 - Independent technical review of the tailings storage facility and storage strategy
- **Maamba Coal Mine, Zambia**
 - Independent technical review of the environmental, social, permitting, discard and water management according to the Equator Principles, IFC Performance Standards, and World Bank EHS Guidelines
- **North River Resources Lead Zinc, Namibia**
 - High level review of the environmental and social documentation according to Namibian legislative requirements
- **Minas Moatize Coal Expansion Project, Mozambique**

- Independent technical review and due diligence of mine residue facilities (slurry and discard), water management, environmental and social aspects
- **Aquarius Shipping International, Warehouse and Container Depot, Beira, Mozambique**
 - Geotechnical investigation
- **Passendro Gold Project, Democratic Republic of Congo**
 - Independent peer review for tailings storage facility
- **Banro Twangiza Project, Democratic Republic of Congo**
 - Independent technical review of the environmental, social, tailings and water management aspects according to the Equator Principles

NATIONAL PROJECTS

Projects are all conducted in terms of relevant National legislation, including the National Environmental Management Act, No. 107 of 1998 (NEMA); the Mineral and Petroleum Resources Development Act, No. 28 of 2002 (MPRDA); the National Environmental Management: Waste Act, No. 59 of 2008; the National Water Act, No. 36 of 1998 etc.

- **Bacarac Trading 104 – Buffelsdoorn Mine, North West**
 - Social and Labour Plan
 - Scoping Report and Environmental Management Programme
 - Water Use Licence Application
- **Middelvlei Minerals – Middelvlei Mine, Gauteng**
 - Environmental Impact Assessment and Environmental Management Programme
 - Waste Management Licence
 - Water Use Licence Application
- **CGERO – Van Dyk Prospecting Right, Gauteng**
 - Prospecting Right Application
 - Environmental Authorisation process incl. BAR, EMP and closure plan
- **ERPM Extension Area 1 – ERPM Ext 2 Mine, Gauteng**
 - Environmental Impact Assessment and Environmental Management Programme
 - Waste Management Licence
 - Water Use Licence Application
- **Sebilo Resources – Perth Mine, Northern Cape**
 - Assessment of the quantum for rehabilitation-related financial provision
- **Samancor^{Cr} – TC Smelters, North West**
 - Closure, Decommissioning and Rehabilitation Plan
 - Assessment of the quantum for rehabilitation-related financial provision
- **Samancor^{Cr} – Ferrometals, Mpumalanga**
 - EMP performance assessment for decommissioning of the IC3 facility
 - Slag dump waste management licence compliance audit
 - Water use license compliance audit
- **Tawana Investment Holdings – Prospecting Right, Northern Cape**
 - Prospecting Right Application
 - Environmental Authorisation process incl. BAR, EMP and closure plan

- **Pan African Mineral Development Company – Prospecting Right, Northern Cape**
 - Prospecting Right Application
 - Environmental Authorisation process incl. BAR, EMP and closure plan
- **Newshelf – Cons Modder Project, Gauteng**
 - Social and Labour Plan
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence Application
- **Imperial Cargo Solutions – Flammable Goods Store, Gauteng**
 - Environmental Impact Assessment and Environmental Management Programme
- **Gold One Africa – Ventersburg Project, Free State**
 - Social and Labour Plan
 - Environmental Impact Assessment and Environmental Management Programme
 - Waste Management Licence
 - Water Use Licence Application
 - Atmospheric Emission Licence
- **WRE – EJV Gold Project, Free State**
 - Site selection for tailings storage facility
 - Pre-Feasibility Study design for tailings storage facility
- **Rietvlei Mine, Mpumalanga**
 - Technical input on discard dump and pollution control dam design
- **Gold One Africa – Holfontein Gold Project, Gauteng**
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence Application and water dam designs
- **New Kleinfontein Goldmine – Modder East Operations, Gauteng**
 - Environmental Impact Assessment and Environmental Management Programme and amendments thereto
 - Basic Assessment for a return water dam and Environmental Management Programme amendment
 - Water Use Licence Application and amendments thereto
 - Atmospheric Emission Licence application
 - Rehabilitation Strategy and Implementation Programme
 - Social and Labour Plan revision
 - Equator Principles and IFC compliance review
 - Alien invasive vegetation eradication plan
 - Emergency preparedness and response plan
 - Stormwater management plan
- **Interwaste – Various sites in Gauteng, Mpumalanga and Western Cape**
 - Environmental compliance auditing at various landfill sites and depots
 - Water quality monitoring and reporting
 - External environmental control officer for the Klinkerstene Landfill Site, Environmental Authorisation and construction Environmental Management Programme compliance auditing
- **Ekurhuleni Metropolitan Municipality – Various landfill sites in Gauteng**

- Environmental compliance auditing at various landfill sites and transfer stations
- Permit amendment application
- Water quality monitoring and reporting
- **Royal Bafokeng Platinum, North West**
 - Annual assessment of the quantum for rehabilitation-related financial provision for Prospecting Rights
- **Samancor^{Cr} – Various sites in Limpopo**
 - Performance assessments and assessment of the quantum for rehabilitation-related financial provision for various Prospecting Rights
- **Modikwa Platinum Mine, Mpumalanga**
 - Water Use Licence compliance audit and action plan
 - Annual assessment of the quantum for rehabilitation-related financial provision
 - Annual Rehabilitation Plan
 - Final Rehabilitation Decommissioning and Closure Plan
 - Environmental Risk Assessment
 - Waste Management Licence Amendment
- **Coal of Africa – Vele Colliery, Limpopo**
 - Independent technical review of the environmental, social, tailings and water management aspects according to the Equator Principles and IFC Performance Standards
- **Canyon Springs Coal Mine, Mpumalanga**
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence Application
 - Waste Management Licence application
 - High level bulk water supply assessment
 - External environmental control officer, construction Environmental Management Programme compliance auditing
 - Water Use Licence execution
- **Elsmore Pafuri Camp, Limpopo**
 - Environmental Authorisation amendment
- **Elsmore Luvuvhu Camp, Limpopo**
 - External environmental control officer, Environmental Authorisation and construction Environmental Management Programme compliance auditing
- **Bio-2-Watt – Biogas Plant, Gauteng**
 - External environmental control officer, construction Environmental Management Programme compliance auditing
 - Technical advice
- **Samancor^{Cr} – Scheiding Chrome Mine, Limpopo**
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence Application
- **African Exploration Mining Finance Corporation – T-Project Colliery, Mpumalanga**
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence Application

- Closure and rehabilitation plan
- Bulk water supply assessment
- Equator Principles compliance review and gap analysis
- Stakeholder engagement plan and grievance mechanism
- Emergency preparedness and response plan
- Alien invasive vegetation eradication plan
- Water Use Licence execution
- **Mbila Anthracite Mine, KwaZulu-Natal**
 - Basic Assessment and Environmental Management Programme
 - Water Use Licence amendment
- **Msebe Opencast Anthracite Mine, KwaZulu-Natal**
 - Environmental Impact Assessment and Environmental Management Programme
- **Tjate Platinum Mine, Limpopo**
 - Environmental and social baseline report
 - Baseline environmental assessments and project management of the environmental inputs into the Pre-Feasibility Study
 - Social and Labour Plan update
 - Site selection and preliminary design for a tailings storage facility
- **Tharisa Platinum Mine, North West**
 - Due diligence for independent technical engineers report (ITE), review of the environmental, social and tailings documentation and reporting and annual updates thereto
- **Anglo American Platinum Limited – Rustenburg Platinum Mines, Limpopo**
 - The consolidation of existing approved Environmental Management Programmes and the alignment thereof with the requirements of the MPRDA
- **Kalagadi Manganese Mine, Northern Cape**
 - Review of environmental documentation to determine compliance with Equator Principles and international best practice, on behalf of Standard Bank
- **African Exploration Mining Finance Corporation – Vlakvarkfontein Colliery, Mpumalanga**
 - Water Use Licence Application
 - Closure and rehabilitation plan
 - The technical design, 3D modelling and detailing of the conceptual backfill plan for an opencast pit
 - Compilation of an alien invasive vegetation eradication plan
 - Social and Labour Plan amendment
 - Basic Assessment and Environmental Management Programme for a haul/ access road and above ground diesel storage area
- **Western Bushveld Joint Venture – Project 1, North West**
 - Review of environmental, hydrology and tailings dam documentation for compliance with Equator Principles, IFC Performance Standards and EHS Guidelines, on behalf of Standard Bank
- **Anglo American Platinum Limited – Amandelbult Chrome Recovery Plant, Limpopo**
 - Basic Assessment and Environmental Management Programme for a chrome recovery plant
 - Addendum to the existing Environmental Impact Assessment and Environmental Management Programme in terms of the MPRDA

- **Steenkampskraal Project, Western Cape**
 - Review of environmental, hydrology and tailings dam documentation for compliance for PEA Canadian NI 43-101 filing
- **Malalane Iron Ore Project, Mpumalanga**
 - Preliminary environmental and social baseline studies
- **Rand Uranium – Reclamation of Lindum Tailings Storage Facility, Gauteng**
 - Environmental Impact Assessment and Environmental Management Programme addendum
- **Hlabisa Coal, KwaZulu-Natal**
 - High-level, desktop environmental evaluation (sensitivity analysis)
- **Anglo American Platinum Limited – Kilken Tailings, Limpopo**
 - Independent technical review of the environmental and social aspects permitting and water management according to the Equator Principles, IFC Performance Standards, and World Bank EHS Guidelines
- **Mooiplaats Platinum Mine, Limpopo**
 - Social and Labour Plan
- **Rietkuil Coal Project, Mpumalanga**
 - Independent technical review and due diligence of environmental documentation
- **Evander Gold Mine, Mpumalanga**
 - Review of environmental, social and tailings dam documentation for compliance with South African Environmental and Social Standards
- **Holgoun Energy – Springbok Flats Coal Fields, Limpopo**
 - Competent Persons Report
 - High level bulk water supply assessment
 - High level environmental review for the Western Complex Project
- **Kudumane Manganese Mine, Northern Cape**
 - Independent technical review of the environmental and social aspects
- **ZYL Limited – KaNgwane Anthracite Mine, Mpumalanga**
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence Application
 - Closure and rehabilitation plan
- **ZYL Limited – Southern Anthracite Project, Mpumalanga**
 - Environmental Impact Assessment and Environmental Management Programme
- **DRDGold – Blyvooruitzicht Mining Operation, Gauteng**
 - High level environmental review
- **Lonmin – Akanani Platinum Project, Limpopo**
 - Pre-Feasibility Study, review of the environmental and social documentation and reporting of high level risks and opportunities
- **Anglo American Platinum Limited – Dishaba Mine, Limpopo**
 - Environmental Impact Assessment and Environmental Management Programme
 - Water Use Licence amendment
- **Majuba Colliery, Mpumalanga**
 - Closure and rehabilitation plan

- **Rietfontein Prospect, Limpopo**
 - Geotechnical investigation
 - Environmental Management Programme amendment
- **Namaqualand Mines, Northern Cape**
 - Independent technical review of the environmental, social and tailings aspects according to the Equator Principles and IFC Performance Standards
- **Leeufontein and Blinkpan project areas, Mpumalanga**
 - Geotechnical investigation
- **Bafokeng Rasimone Platinum Mine, North West**
 - Preliminary closure and rehabilitation plan
- **Umtu (Manganese) Mine Project, Northern Cape**
 - Independent technical review of the environmental and social aspects according to the Equator Principles and IFC Performance Standards
- **Koornfontein Mines, Mpumalanga**
 - Environmental Impact Assessments and Environmental Management Programmes for the separate sections of the mining operations
 - Environmental Impact Assessments and Environmental Management Programmes amendment for the Leeufontein Block
 - Water Use Licence Applications for the separate sections of the mining operations
 - Identification of a suitable host area and conditions for resettlement and the compilation of the Resettlement Action Plan and agreement on timeframes and responsibilities
- **Bafokeng Rasimone Platinum Mine, North West**
 - Due diligence on environmental and tailings dam documentation for listing purposes on the JSE stock exchange
 - Competent Persons Report including environmental, social, hydrological and tailings aspects
- **Simmer & Jack Limited – Elandsdrift Heap Leach Pad, Mpumalanga**
 - Geotechnical and slope stability investigation
 - As built drawings for the Elandsdrift heap leach pad
- **Simmer & Jack Mines Limited Transvaal Gold Mining Estates, Mpumalanga**
 - Design, quality control/assurance manual, site support and part time project management for the design and construction of a heap leach dam extension
- **Afrikander Leases Gold Mine, North West**
 - Environmental Impact Assessment and Environmental Management Programme amendment
- **Grass Valley Platinum Project, Limpopo**
 - Update the environmental aspects in the Pre-Feasibility Study report
- **Lonmin PLC Western Platinum Mine, North West**
 - Basic Assessment and Environmental Management Programme for a hazardous waste storage facility
 - Waste Management Licence application

APPENDIX 2

EAP CURRICULUM VITAE



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Louise Jones – Principal Environmental Consultant | GIS Specialist, *EAPASA registered*

Present Appointment	Principal Environmental Consultant and GIS Specialist
Professional Registration	Registered Environmental Assessment Practitioner (EAP), EAPASA registration 2019/1367
Nationality	South African (English Speaking)
Education	MSc Environmental Sciences, University of the Witwatersrand, 2013 BSc (Hons.) Applied Chemistry, University of the Witwatersrand, 2010 BSc, Environmental Science and Chemistry, University of the Witwatersrand, 2009

Synopsis

Louise has over ten years of experience in environmental consulting. She has experience in the compilation of Environmental Impact Assessments (EIAs), Environmental Management Programmes (EMPRs), conducting public participation, environmental compliance auditing, performance assessments, social and labour plans, mine closure and rehabilitation planning and water monitoring. She also have experience in Geographic Information Systems (GIS).

Project History

Environmental Authorisation Processes (Basic Assessments, EIA's, Stakeholder Engagement and EMP's)

- Made To Last, Proposed prospecting on Farm Dikgathlong 268, Northern Cape Province, South Africa
- Tawana Hotazel Mining, Tawana Hotazel Mine, Northern Cape Province, South Africa
- Sebilo Resources, Perth Manganese Mine, Northern Cape Province, South Africa
- Bacarac Trading 104, Buffelsdoorn Mine, North West Province, South Africa
- CGERO, Van Dyk Prospecting Right Application, Gauteng Province, South Africa
- ERPM Extension Area 1, ERPM Extension 2 Mine, Gauteng Province, South Africa
- Middelvlei Minerals, Middelvlei Mine, Gauteng Province, South Africa
- PAMDC, Prospecting Right Application, Northern Cape Province, South Africa
- Newshelf, Cons Modder Project, Gauteng Province, South Africa
- Gold One Africa, Ventersburg Project, Free State Province, South Africa
- Vale Fertil, Lucunga Phosphate Project, Angola

- Horizonte Minerals, Araguaia Nickel Project, Brazil
- Gold One International, Holfontein Project, Gauteng Province, South Africa
- Mbila Resources, Mbila and Msebe Anthracite Mines, KwaZulu-Natal, South Africa
- Moongate Barberton Iron Ore, Mpumalanga, South Africa
- Anglo American Platinum, Amandelbult Chrome Recovery Plant, Limpopo, South Africa
- Samancor Chrome, Scheiding Chrome Mine, Limpopo, South Africa

Water, Waste Management and Compliance Auditing

- Integrated Water Use Licence and GN704 compliance audit for the Modikwa Platinum Mine, Limpopo Province, South Africa
- Water Monitoring, Ekurhuleni Metropolitan Municipality, Closed Landfill Sites, Gauteng Province, South Africa
- Water Monitoring, Ekurhuleni Metropolitan Municipality, Ekurhuleni Metropolitan Municipality, operational landfill sites, Gauteng Province, South Africa
- Environmental Compliance Auditing, Ekurhuleni Metropolitan Municipality, operational landfill sites, Gauteng Province, South Africa
- Environmental compliance auditing of the Marble Hall Landfill Site, Ephraim Mogale Local Municipality, Limpopo Province, South Africa
- Groundwater Monitoring and Environmental Compliance Auditing, Interwaste Klinkerstene Landfill Site, Mpumalanga Province, South Africa
- Groundwater Monitoring and Environmental Compliance Auditing, Interwaste F.G. Landfill Site, Gauteng Province, South Africa
- Bi-annual Environmental Compliance Audit, Interwaste Hazardous Waste Transfer Facility, Germiston, Gauteng Province, South Africa

Environmental Authorisation and Environmental Management Programme Compliance Auditing

- Environmental Control Officer and Environmental Compliance Monitoring for the Interwaste Klinkerstene Landfill Site, Delmas, Mpumalanga Province, South Africa

Soil and Agricultural / Land Capability Impact Assessment

- Newshelf, Cons Modder Project, Gauteng Province, South Africa
- Vale Fertil, Lucunga Phosphate Project, Angola
- Holfontein Project, New Kleinfontein Goldmine (Pty) Ltd, Modder East Operations, Gauteng, South Africa

Social and Labour Plans

- Bacarac Trading 104, Buffelsdoorn Mine, North West Province, South Africa
- Newshelf, Cons Modder Project, Gauteng Province, South Africa
- Gold One Africa, Ventersburg Project, Free State Province, South Africa
- Mbila Resources, Msebe Opencast Mining Activities, KwaZulu-Natal, South Africa
- Jubilee Platinum, Tjate Platinum Mine, Mpumalanga, South Africa
- SAMDC, Mooiplaats Platinum Mine, Limpopo, South Africa

Due Diligence

- Review of Lihobong Diamond Mine, Lesotho
- Review of Maamba Colliery's existing and proposed expansion project, Zambia
- Environmental and social baseline report (pre-feasibility) for the Horizonte Minerals, Araguaia Nickel Project, Brazil
- Review and gap analysis preparation for T-Project Colliery, Kinross, Mpumalanga Province, South Africa

Mine Closure Liability and Performance Assessments

- Annual review and update of the quantum for closure-related financial provision, Tawana Hotazel Mining, Hotazel Mine, Northern Cape Province, South Africa
- Annual review and update of the quantum for closure-related financial provision, Sebilo Resources, Perth Mine, Northern Cape Province, South Africa
- Annual review and update of the quantum for closure-related financial provision, Newshelf, Cons Modder Project, Gauteng Province, South Africa
- Annual review and update of the quantum for closure-related financial provision, Gold One International, Holfontein Project, Gauteng Province, South Africa
- Annual review and update of the quantum for closure-related financial provision, Gold One International, Ventersburg Project, Free State Province, South Africa
- Closure Plans and Annual assessment of the Quantum for Closure-Related Financial Provision for the Modikwa Platinum Mine, Limpopo Province, South Africa
- Care and Maintenance Plan for the Samancor Chrome, Western Chrome Mines, Lannex Mine, Limpopo Province, South Africa
- Performance Assessment and Evaluation of the Quantum for Closure-Related Financial Provision, Mbila Resources and various Samancor^{Cr} prospecting right areas
- Annual Financial Liability Auditing, Shiva Uranium, Dominion Reefs Uranium Mine, North West Province, South Africa

GIS (Proficient with ArcGIS software - currently using ArcGIS 10.1)

- Mapping and spatial analysis of the mine layout, underground mine plan, farm portions and environmental information for various projects
- High level environmental review to identify environmentally sensitive areas by mapping all available environmental information for various projects
- Mapping and spatial analysis of newly mined, previously mined and rehabilitated areas for various annual financial liability audits and closure plans
- Mapping of boreholes forming part of the water monitoring networks for various projects



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Dr Bronwyn Grover – Senior Environmental Scientist

Present Appointment	Senior Environmental Scientist / Chemist
Professional Registration	South African Council for Natural Scientific Professions (SACNASP) No. 116334 (Environmental Science)
Nationality	South African
Education	PhD (Environmental Analytical Chemistry), University of the Witwatersrand BSc Hons. (Chemistry, <i>with distinction</i>), University of the Witwatersrand BSc. (Geology and Chemistry, <i>with distinction</i>), University of the Witwatersrand

Synopsis Bronwyn is an environmental chemist with a specialisation in mine water chemistry. She has seven years of experience in characterising and assessing the impacts of mine residue stockpiles on surface and ground water systems. In recent projects at Prime Resources, Bronwyn has undertaken geochemical assessments, mine waste classification, water monitoring, contaminated land assessments, soil and land capability studies. Bronwyn has experience in Water Use Licence Applications and Environmental Authorisation processes.

Project History

Geochemical Assessments and Waste Classification

- Geochemical assessment of materials associated with a proposed lithium mine, Kwazulu Natal, South Africa
- Geochemical assessment of tailings and waste rock for co-disposal, Dordabis Iron Ore, Namibia
- Geochemical assessment of tailings material, Osino Resources Twin Hills Project, Namibia
- Waste classification of waste rock, Songwe REE, Malawi
- Geochemical Assessment of waste rock material, Tawana Hotazel Manganese Mine, Northern Cape, South Africa
- Geochemical assessment of coal and waste rock, Lemur Imaloto Coal, Madagascar
- Waste classification of overburden material, Middelvllei Mine, Gauteng Province, South Africa
- Geochemical assessment of Deccan Gold Mines Ltd, Ganajur Project, India
- Review of geochemical analyses and international waste classification standards, Unki Slag, Zimbabwe
- Review of geochemical and water data for Due Diligence reports, Maamba Colliery, Zambia
- Review of geochemical data for new tailings storage facility liner design, Al Amar, Saudi Arabia

Contaminated Land Studies and Soil Assessments

- Contaminated land assessment, landfill facility, Gauteng, South Africa

- Dust source analysis and identification, Vaal Racecourse, South Africa
- Soil and land capability assessment of Buffelsdoorn Gold Mine, North West Province, South Africa
- Soil impact assessment and land capability assessment, Cons Modder, Gauteng Province

Wastewater Management Studies

- Review and analysis of the options available for the disposal or discharge of treated effluent arising at the Klinkerstene Waste Management Park, South Africa
- Review and analysis of the options available for the disposal of wastewater arising from water treatment at Northam Zondereinde Platinum Mine, Limpopo

Salt Balances

- 2019, 2020, 2021 and 2022 Salt balances complemented with geochemical modelling, Modder East, Gauteng Province, South Africa
- 2021 and 2022 Salt Balance for Sebilo Perth Manganese Mine, Northern Cape, South Africa

Water Quality Monitoring

- Water quality monitoring at Interwaste, Klinkerstene Waste Management Park, South Africa
- Water quality monitoring at Interwaste, FG Landfill, South Africa
- Water quality assessment of Gold One International, Modder East Operations, Gauteng Province, South Africa

Environmental Authorisation Processes and Public Participation

- Scoping Report for Buffelsdoorn Gold Mine, North West Province, South Africa
- Desktop Environmental and Social Review of the Lomati Gold Mine, Eswatini
- Environmental Impact Assessment, Gold One Africa, Ventersburg Project, Free State Province, South Africa
- Environmental Impact Assessment, Cons Modder Gold Mine, Gauteng Province, South Africa
- Basic Assessment, Prospecting Right, Pan African Mineral Development Company, Northern Cape, South Africa
- Scoping Report for Class A Waste Management Licence, Interwaste Klinkerstene, Mpumalanga, South Africa

Water Use and Waste Management Licensing

- Water Use Licence Application for Tawana Hotazel Mine, Northern Cape
- Water Use Licence Amendment for Sebilo Perth Mine, Northern Cape
- General Authorisation and Water Use Licence Amendment for Klinkerstene Waste Management Park, Mpumalanga
- Water Use Licence Application and Integrated Waste and Water Management Plan for the proposed Ventersburg Gold Mine, Free State Province, South Africa
- Water Use Licence Application and Integrated Waste and Water Management Plan for the proposed Samancor Haakdoorn drift Chrome Mine, Limpopo Province, South Africa
- Water Use Licence Application and Integrated Waste and Water Management Plan for the proposed Cons Modder Gold Mine, Gauteng Province, South Africa
- Water management strategy and Water Use Licence Application for New Kleinfontein Goldmine, Gauteng Province, South Africa

Care and Maintenance and Mine Closure Planning

- Care and Maintenance Plan for Samancor Bokone and Morula mines, South Africa
- Rehabilitation Plan for the proposed Cons Modder Gold Mine, Gauteng Province, South Africa
- Rehabilitation Plan for the proposed Samancor Chrome Mine, Limpopo Province, South Africa
- Financial Provision determination and reporting, Sebilo Devon, Northern Cape, South Africa

Waste Management and Compliance Auditing

- Environmental compliance auditing of operational landfill sites, Ekurhuleni Metropolitan Municipality, Gauteng Province, South Africa
- Environmental compliance auditing of operational landfill sites, Interwaste, Gauteng and Mpumalanga Provinces, South Africa



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Stephen Tarlton – Senior Environmental Scientist Pr. Sci. Nat.

Present Appointment	Senior Environmental Consultant
Professional Registration	South African Council for Natural Scientific Professions (SACNASP) registration No. 115011 (Environmental Science)
Nationality	South African
Education	MSc (Ecology and Plant Science) University of the Witwatersrand 2012 BSc Hons (Plant Science) University of the Witwatersrand, 2007 BSc (Ecology and Plant Science) University of the Witwatersrand, 2006
Languages	English

Synopsis Stephen is a Professional Natural Scientist with a background in ecology. He has undertaken environmental management assignments on various mining, waste, water and linier infrastructure projects in Africa. Projects include environmental authorisations, impact assessments, management plans, environmental monitoring, audits, and due diligence reporting. Furthermore, he has hands-on experience aligning site environmental performance to the IFC Standard, during his time on the Neckartal Dam construction site and has undertaken a number of environmental review assignments in terms of the Equator Principles and World Bank EHS Guidelines.

Project History

International

Environmental assessments and management plans

- Environmental and Social Impact Assessment Update, Neckartal Dam, Ministry of Agriculture Water and Forestry, //Karas Region, Namibia
- Environmental management plan for the Komsberg Farm Redevelopment, Fine Fare Food Market LLC, Namibia
- Environmental and Social Impact Assessment Update, Kinsevere Copper Mine, MMG, DRC
- Environmental and Social Impact Assessment for the Oniipa Sewage Treatment Plant near Onethindi, Oshikoto Region, Namibia
- Environmental and Social Impact Assessment, Farim phosphate project, GB Minerals LTD., Guinea-Bissau
- Environmental Impact Statement, Combination Plant and Fresh Rock Project, Siguiro Gold Mine, Société AngloGold Ashanti de Guinée, State of Guinea
- Environmental management system to the ISO: 14001 Standard, Mongbwalu Gold Project, Ashanti Gold Kilo, DRC.

Construction supervision and auditing

- Contractor supervision and monitoring for the construction of the Neckartal Dam Project, Ministry of Agriculture Water and Forestry, //Karas Region, Namibia
- Drafting and supervision of the implementation of Sustainable Rehabilitation Plan, Kinsevere Copper Mine, MMG, DRC
- Environmental Control Officer Audit, Oshoopala Bridge and Bridge in Extension 16 over the Okatana River, Oshakati, Namibia
- Environmental Control Officer Auditing for the Komsberg Farm Redevelopment, Fine Fare Food Market LLC, Namibia.

Reporting in terms of Equator Principles (EPII) / IFC / World Bank

- Review of Newfields Diamond Project, Sierra Leone
- Review of Boamhaun Gold Project, Sierra Leone
- Review of zinc mining projects, Namibia
- Review of gold mining project, Tanzania
- Review of lithium mining projects in Zimbabwe and Portugal
- Desktop Environmental and Social Review of the Lomati Gold Mine, Eswatini
- Review of Lindi Jumbo Graphite Project, Tanzania
- Review of Bon Ami Bauxite Project, Republic of Guinea
- Reporting of IFC compliance progress to the Development Bank of Namibia, Neckartal Dam Project, Ministry of Agriculture Water and Forestry, //Karas Region, Namibia

Environmental Monitoring

- Independent operational monitoring of environmental and social management, Maamba Collieries Limited, Zambia
- Independent operational monitoring of environmental and social management, Liqhobong Mining Development Company, Lesotho
- Water, soil and noise monitoring for the Farim Phosphate Project, GB Minerals, Guinea-Bissau
- Water quality monitoring, Kinsevere Copper Mine, MMG, DRC
- Air quality monitoring, Kinsevere Copper Mine, MMG, DRC
- Meteorological monitoring / lightning warning system, Kinsevere Copper Mine, MMG, DRC
- Stream flow monitoring for proposed hydropower stations (Magembe and Ulindi), Banro, South Kivu, DRC
- Stream flow monitoring for proposed hydropower stations and the Kalungwishi river, Olympic milling, Zambia
- Stream flow monitoring / underwater survey for the 11 MW Azambi Hydroelectric Project, Kibali Goldmines S.A. (Barrick, AngloGold Ashanti, and Société Minière de Kilo-Moto), Haut-Uele, DRC.

National

Environmental assessment, environmental management plans and water use licences

- Basic Assessment Report and Water Use Licence amendment application for the merger of Dams 4a and 4B at Middleburg Ferrochrome, Mpumalanga Province, South Africa
- Strategic Environmental Assessment for the site selection and installation of a 70 MW DC Arc Furnace for Samancor, Limpopo, South Africa
- Environmental Impact Assessment and Water Use Licence amendment application for fine chrome recovery plants and rail extension, Siyanda Bakgatla Platinum Mine, North West Province, South Africa.
- Care and Maintenance Plan for the Buffelsfontein East and Moinooi Chrome Mines, Western Chrome Mines, Samancor Chrome Limpopo Province, South Africa
- Environmental and Social Impact Assessment for ERPM Ext 1 Mining Right, ERPM, Gauteng, South Africa
- Environmental Scoping process for Buffelsdoorn Mining Right Application, Bacarac Trading, North-West Province, South Africa

- Water use licence application for Scheiding Chrome Mine, Mpumalanga, South Africa.
- Basic Assessment Report for a Prospecting Right Application for Van Dyk, CGERO, Gauteng Province, South Africa
- Ecological Assessment of Johannesburg impoundments, City of Johannesburg, Gauteng, South Africa.
- Basic Assessment Report for rezoning of erf 23205 Milnerton, City of Cape Town, Western Cape Province, South Africa
- Environmental Management Plan amendments for various borrow pits and quarries for National route 17 upgrade (Davel to Ermelo), SANRAL, Mpumalanga, South Africa Scoping for the Klinkerstene Waste Management Licence Application, Mpumalanga, South Africa.

Environmental auditing

- Environmental Control Officer Auditing Construction of the Gedex Mine, Gauteng, South Africa
- Final Environmental Performance Assessment Report and associated closure reports for the closure of six prospecting rights in Limpopo and North West Provinces, Samancor, South Africa
- Environmental Audit of the Cons Modder (Gedex) Gold Mine, Gauteng, South Africa
- Environmental Audit for the Ventersburg Gold Project, Gold One, Free State, South Africa
- Environmental Auditor for various waste disposal, storage, treatment and recovery facilities, Interwaste / Séché Environmental, Gauteng, Mpumalanga and Eastern Cape, South Africa
- Environmental Control Officer and Environmental Compliance Monitoring for the Interwaste Klinkerstene Landfill Site, Delmas, Mpumalanga Province, South Africa
- Environmental Control Officer Auditing for Gauteng Freeway Improvement Project (packages F, C K & I), SANRAL, Gauteng, South Africa
- Environmental Control Officer Auditing for National route 17 upgrade (Davel to Ermelo), SANRAL, Mpumalanga, South Africa
- Environmental Control Officer Auditing for the construction and rehabilitation of Provincial Roads D2690 and D636 between Provincial road P17/6, Yaverland and Plaston, Palabora Copper (Pty) Limited, Mpumalanga, South Africa.
- Section 20 Audit, Middleburg Ferrochrome, Samancor Chrome Limited, South Africa

Reporting in terms of Equator Principles (EPII) / IFC / World Bank

- Review of zinc mining projects in terms of GIIP and national legislation, Northern Cape, South Africa
- Independent operational monitoring of environmental and social management, Tharisa Minerals, North-West Province, South Africa.

Environmental Monitoring

- Water quality monitoring for the Ventersburg Gold Project, Gold One Ltd., Free State, South Africa
- Water quality monitoring for the Maluti Waste Facility and FG Landfill, Interwaste / Séché Environmental, Gauteng, South Africa
- Water quality monitoring for the Klinkerstene Landfill, Interwaste / Séché Environmental, Gauteng, South Africa
- Water quality monitoring for various sewage treatment works in Johannesburg, Johannesburg water, Gauteng, South Africa
- Water quality monitoring, Sedibelo Platinum Project, I.B.M.R., South Africa
- Water quality monitoring for Leeuwkop Platinum Project, Afplats, South Africa

APPENDIX 3

ENVIRONMENTAL SCREENING REPORT

**SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS
REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED DEVELOPMENT
FOOTPRINT ENVIRONMENTAL SENSITIVITY**

EIA Reference number: NC 30/5/1/1/2/13728 PR

Project name: Gappepin Reserve 670

Project title: Prospecting Right Application

Date screening report generated: 22/04/2024 11:05:10

Applicant: Monnapula Mining (Pty) Ltd

Compiler: Prime Resources (Pty) Ltd

Compiler signature:
.....

Application Category: Mining|Prospecting rights

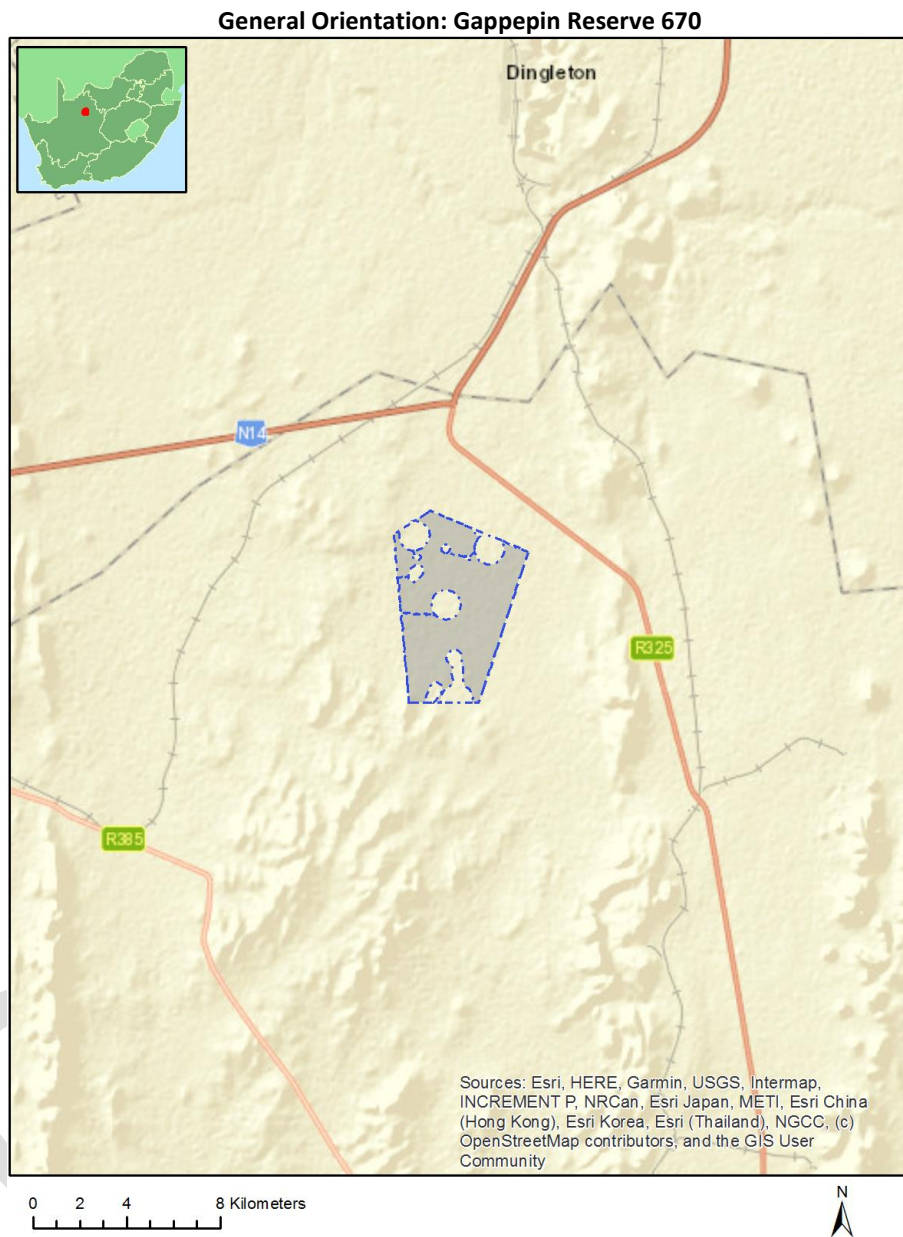


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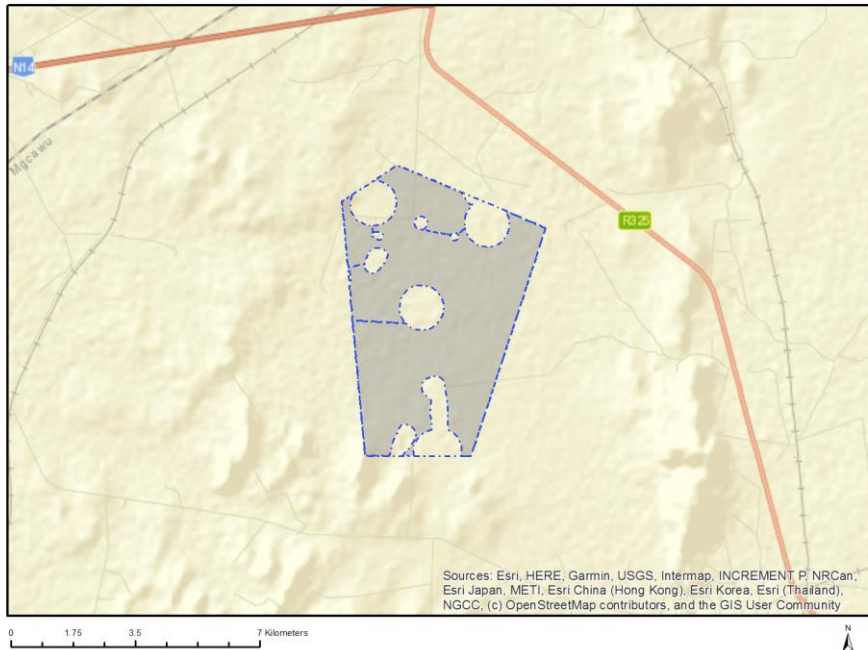
- Proposed Project Location 3
 - Orientation map 1: General location 3
- Map of proposed site and relevant area(s) 4
 - Cadastral details of the proposed site 4
 - Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area 10
 - Environmental Management Frameworks relevant to the application 10
- Environmental screening results and assessment outcomes 11
 - Relevant development incentives, restrictions, exclusions or prohibitions 11
 - Proposed Development Area Environmental Sensitivity 11
 - Specialist assessments identified 11
- Results of the environmental sensitivity of the proposed area 13
 - MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY 13
 - MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY 14
 - MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY 15
 - MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY 16
 - MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY 17
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Proposed Project Location

Orientation map 1: General location



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	GAPPEPIN RESERVE	670	0	27°58'1.09S	22°57'43.4E	Farm
2	GAPPEPIN RESERVE	670	0	27°58'1.09S	22°57'43.4E	Farm Portion

Development footprint¹ vertices:

Footprint	Latitude	Longitude
1	27°57'27.21S	22°56'27.55E
1	27°56'49.25S	22°56'23.65E
1	27°56'34.24S	22°56'22.11E
1	27°56'33.11S	22°56'24.29E
1	27°56'30.63S	22°56'28.41E
1	27°56'28.88S	22°56'31.42E
1	27°56'32.58S	22°56'30.38E
1	27°56'35.41S	22°56'30.15E
1	27°56'38.67S	22°56'30.2E
1	27°56'42.74S	22°56'31.32E
1	27°56'45.74S	22°56'33.06E

¹ “development footprint”, means the area within the site on which the development will take place and includes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

1	27°56'49.81S	22°56'37.02E
1	27°56'51.05S	22°56'39.49E
1	27°56'52.59S	22°56'42.98E
1	27°56'53.64S	22°56'48.06E
1	27°56'53.72S	22°56'49.6E
1	27°56'59.1S	22°56'51.13E
1	27°56'59.23S	22°56'49.61E
1	27°56'59.67S	22°56'49.5E
1	27°57'1.54S	22°56'49.78E
1	27°57'2.06S	22°56'49.83E
1	27°57'2.52S	22°56'50.68E
1	27°57'2.9S	22°56'53.01E
1	27°57'3.92S	22°56'53.6E
1	27°57'4.77S	22°56'54.56E
1	27°57'5.22S	22°56'56.15E
1	27°57'5.04S	22°56'57.78E
1	27°57'4.23S	22°56'59.12E
1	27°57'3.44S	22°56'59.85E
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1	27°56'59.09S	22°56'51.16E
1	27°56'53.72S	22°56'49.64E
1	27°56'53.03S	22°56'56.18E
1	27°56'50.88S	22°57'2E
1	27°56'47.38S	22°57'6.67E
1	27°56'42.49S	22°57'10.36E
1	27°56'39.89S	22°57'11.41E
1	27°56'35.01S	22°57'12.16E
1	27°56'31.25S	22°57'11.59E
1	27°56'30.79S	22°57'11.41E
1	27°56'29.76S	22°57'11.26E
1	27°56'26.8S	22°57'10.1E
1	27°56'24.2S	22°57'8.26E
1	27°56'22.46S	22°57'6.7E
1	27°56'19.55S	22°57'2.2E
1	27°56'18.04S	22°56'58.04E
1	27°56'17.41S	22°56'51.24E
1	27°56'5.1S	22°57'12.37E
1	27°56'27.32S	22°58'11.99E
1	27°56'27.56S	22°58'11.9E
1	27°56'28.62S	22°58'11.66E
1	27°56'29.09S	22°58'11.73E
1	27°56'31.23S	22°58'13.34E
1	27°56'32.96S	22°58'15.94E
1	27°56'33.41S	22°58'16.43E
1	27°56'33.63S	22°58'16.64E
1	27°56'35.19S	22°58'17.57E
1	27°56'36.35S	22°58'19.34E
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1	27°56'36.89S	22°58'21.82E
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1	27°56'39.51S	22°58'18.73E
1	27°56'41.9S	22°58'16.94E
1	27°56'44.34S	22°58'15.63E
1	27°56'46.94S	22°58'14.7E
1	27°56'48.6S	22°58'14.33E
1	27°56'51.73S	22°58'14.16E

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1	27°56'54.75S	22°58'14.35E
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1	27°56'49.49S	22°57'40.12E
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1	27°57'5.08S	22°58'3E
1	27°57'5.4S	22°58'3.57E
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1	27°57'5.64S	22°58'5.29E
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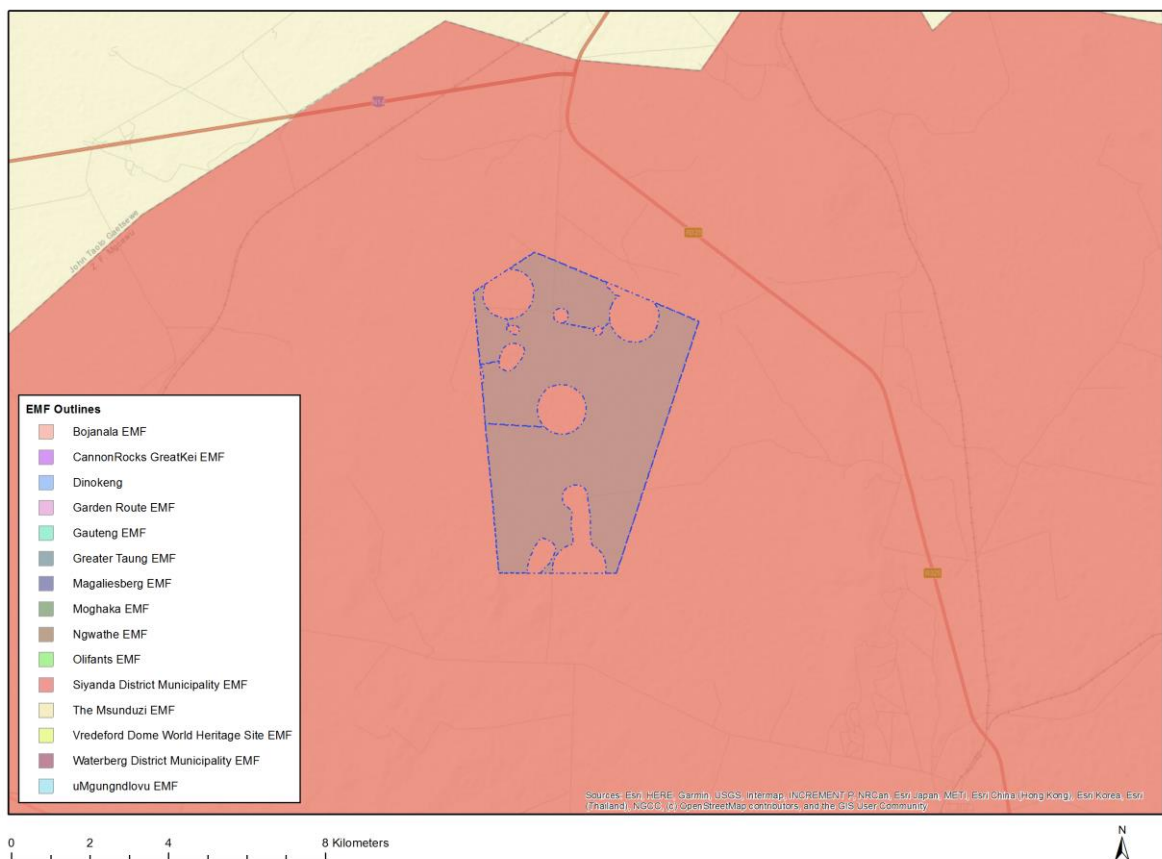
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1	27°59'54.29S	22°57'22.29E
1	27°59'51.81S	22°57'25.15E
1	27°59'49.6S	22°57'26.14E
1	27°59'46.32S	22°57'28.55E
1	27°59'42.8S	22°57'29.98E
1	27°59'41.3S	22°57'29.73E
1	27°59'39.65S	22°57'29.1E
1	27°59'37.62S	22°57'28.09E
1	27°59'36.43S	22°57'26.73E
1	27°59'35.14S	22°57'24.41E
1	27°59'34.05S	22°57'21.59E
1	27°59'33.63S	22°57'19.31E
1	27°59'33.63S	22°57'17.68E
1	27°59'34S	22°57'17.21E
1	27°59'35.01S	22°57'16.43E
1	27°59'36.89S	22°57'14.94E
1	27°59'39.5S	22°57'12.93E
1	27°59'41.68S	22°57'11.81E
1	27°59'44.79S	22°57'10.3E
1	27°59'47.26S	22°57'8.99E
1	27°59'49.32S	22°57'8.24E
1	27°59'54.11S	22°57'6.73E
1	27°59'58.94S	22°57'5.94E
1	27°59'58.79S	22°56'43.06E
1	27°59'42.9S	22°56'41.4E
1	27°59'24.73S	22°56'39.71E
1	27°58'10.14S	22°56'31.92E
1	27°58'12.54S	22°57'20.76E
1	27°58'13.91S	22°57'22.44E
1	27°58'14.48S	22°57'23.24E
1	27°58'15.91S	22°57'25.76E
1	27°58'17.42S	22°57'30.57E
1	27°58'17.86S	22°57'35.12E
1	27°58'17.6S	22°57'38.84E
1	27°58'17.17S	22°57'40.76E
1	27°58'16S	22°57'44.22E
1	27°58'13.22S	22°57'48.59E
1	27°58'10.39S	22°57'51.57E
1	27°58'6.81S	22°57'53.72E
1	27°58'4.59S	22°57'54.52E
1	27°58'0.65S	22°57'55.07E
1	27°57'57.61S	22°57'55E

1	27°57'55.44S	22°57'54.52E
1	27°57'51.75S	22°57'53.16E
1	27°57'48.84S	22°57'51.05E
1	27°57'46.15S	22°57'48.41E
1	27°57'43.87S	22°57'44.56E
1	27°57'43.21S	22°57'42.72E
1	27°57'42.1S	22°57'39.09E
1	27°57'41.78S	22°57'34.04E
1	27°57'42.24S	22°57'30E
1	27°57'44.26S	22°57'23.64E
1	27°57'46.33S	22°57'20.96E
1	27°57'49.28S	22°57'18.16E
1	27°57'52.68S	22°57'16.17E
1	27°57'57.79S	22°57'14.99E
1	27°58'0.96S	22°57'14.93E
1	27°58'5.87S	22°57'15.94E
1	27°58'9.36S	22°57'17.97E
1	27°58'12.47S	22°57'20.68E
1	27°58'10.07S	22°56'31.91E
1	27°57'43.08S	22°56'29.18E
1	27°57'40.4S	22°56'30.01E
1	27°57'38.12S	22°56'30.46E
1	27°57'35.49S	22°56'30.38E
1	27°57'33.42S	22°56'30.11E
1	27°57'30.66S	22°56'29.45E
1	27°57'28.64S	22°56'28.56E
1	27°57'27.24S	22°56'27.59E
1	27°57'24.63S	22°56'43.21E
1	27°57'27.12S	22°56'43.09E
1	27°57'28.9S	22°56'43.74E
1	27°57'30.5S	22°56'45.67E
1	27°57'30.65S	22°56'45.8E
1	27°57'31.42S	22°56'48.27E
1	27°57'31.95S	22°56'50.73E
1	27°57'31.49S	22°56'52.92E
1	27°57'29.56S	22°56'55.77E
1	27°57'27.59S	22°56'57.98E
1	27°57'25.42S	22°56'59.93E
1	27°57'22.61S	22°57'2.12E
1	27°57'20.82S	22°57'3.22E
1	27°57'19.27S	22°57'3.74E
1	27°57'17.72S	22°57'4.18E
1	27°57'16.81S	22°57'4.31E
1	27°57'15.21S	22°57'3.91E
1	27°57'13.55S	22°57'1.8E
1	27°57'11.96S	22°56'58.88E
1	27°57'11.68S	22°56'56.99E
1	27°57'11.68S	22°56'52.81E
1	27°57'11.93S	22°56'52.21E
1	27°57'13.18S	22°56'49.5E
1	27°57'15.75S	22°56'46.6E
1	27°57'20.57S	22°56'44.02E
1	27°57'24.12S	22°56'43.18E
1	27°57'24.52S	22°56'43.19E
1	27°57'27.21S	22°56'27.55E

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	14/12/16/3/3/2/698	Solar PV	Approved	20.6
2	14/12/16/3/3/2/911/AM3	Solar PV	Approved	26.1
3	14/12/16/3/3/2/698/1	Solar PV	Approved	20.6
4	14/12/16/3/3/2/1082/AM2	Solar PV	Approved	22.6
5	14/12/16/3/3/2/1082	Solar PV	Approved	22.6
6	14/12/16/3/3/2/698/AM4	Solar PV	Approved	20.6
7	14/12/16/3/3/2/819/AM2	Solar PV	Approved	22.6
8	14/12/16/3/3/2/698/AM1	Solar PV	Approved	20.6
9	14/12/16/3/3/2/1083/AM2	Solar PV	Approved	22.6
10	14/12/16/3/3/2/820	Solar PV	Approved	22.6
11	14/12/16/3/3/1/1965	Wind	Approved	14.1
12	14/12/16/3/3/2/911	Solar PV	Approved	26.1
13	12/12/20/1906	Solar PV	Approved	28.8
14	14/12/16/3/3/2/1083	Solar PV	Approved	22.6
15	14/12/16/3/3/2/819/AM1	Solar PV	Approved	22.6
16	14/12/16/3/3/2/819	Solar PV	Approved	24.7
17	14/12/16/3/3/2/679	Solar - CSP	Approved	19.4
18	14/12/16/3/3/2/1082/AM3	Solar PV	Approved	22.6
19	14/12/16/3/3/2/820/AM1	Solar PV	Approved	22.6

Environmental Management Frameworks relevant to the application



Environmental Management Framework	LINK
Siyanda District Municipality EMF	https://screening.environment.gov.za/ScreeningDownloads/EMF/SIYANDA_EMF_REPORT_2008.pdf

Environmental screening results and assessment outcomes

The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development footprint as well as the most environmental sensitive features on the footprint based on the footprint sensitivity screening results for the application classification that was selected. The application classification selected for this report is:

Mining | Prospecting rights.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this footprint are indicated below.

Incentive, restriction or prohibition	Implication
Strategic Transmission Corridor-Northern corridor	https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/Combined_EGI.pdf

Proposed Development Area Environmental Sensitivity

The following summary of the development footprint environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme			X	
Animal Species Theme			X	
Aquatic Biodiversity Theme				X
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme				X
Defence Theme				X
Paleontology Theme		X		
Plant Species Theme				X
Terrestrial Biodiversity Theme				X

Specialist assessments identified

Based on the selected classification, and the known impacts associated with the proposed development, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the

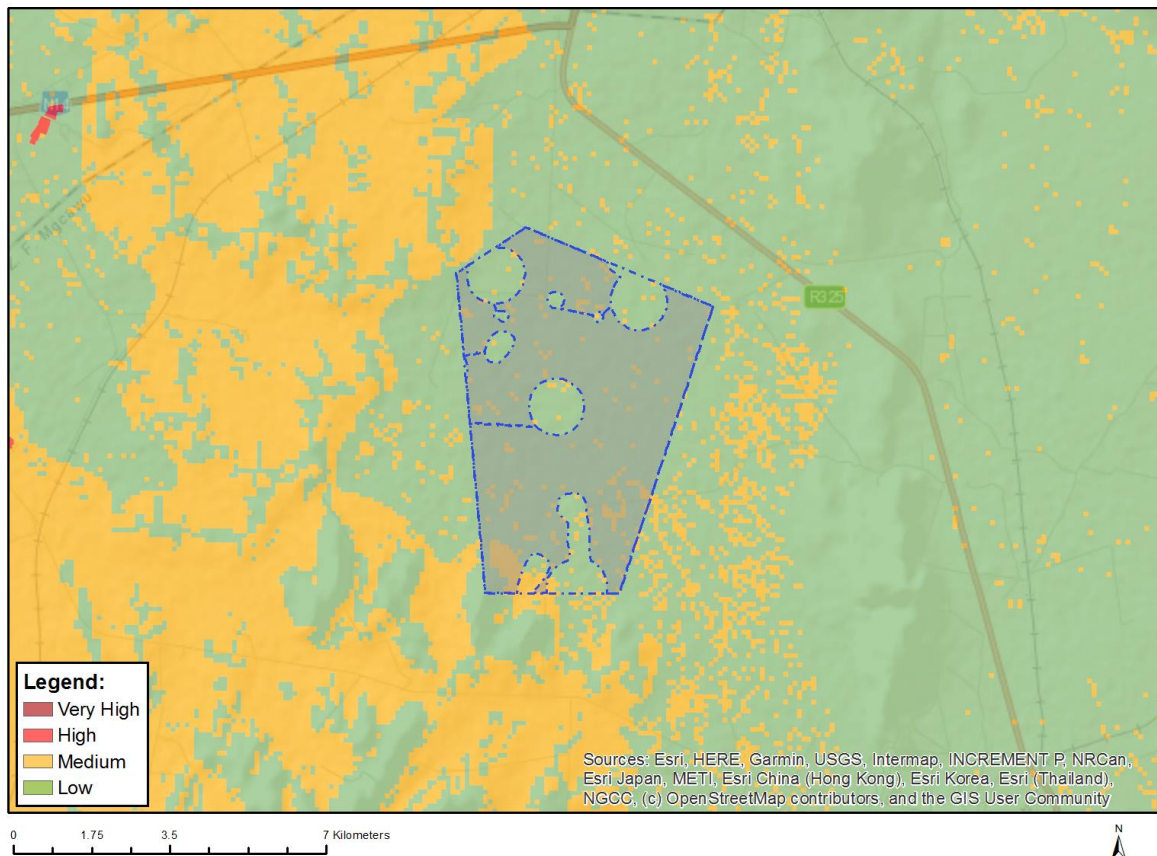
assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the footprint situation.

No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Agriculture Assessment Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Terrestrial Biodiversity Assessment Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Aquatic Biodiversity Assessment Protocols.pdf
6	Noise Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Noise Impacts Assessment Protocol.pdf
7	Radioactivity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted General Requirement Assessment Protocols.pdf
8	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Plant Species Assessment Protocols.pdf
9	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted Animal Species Assessment Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed footprint for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

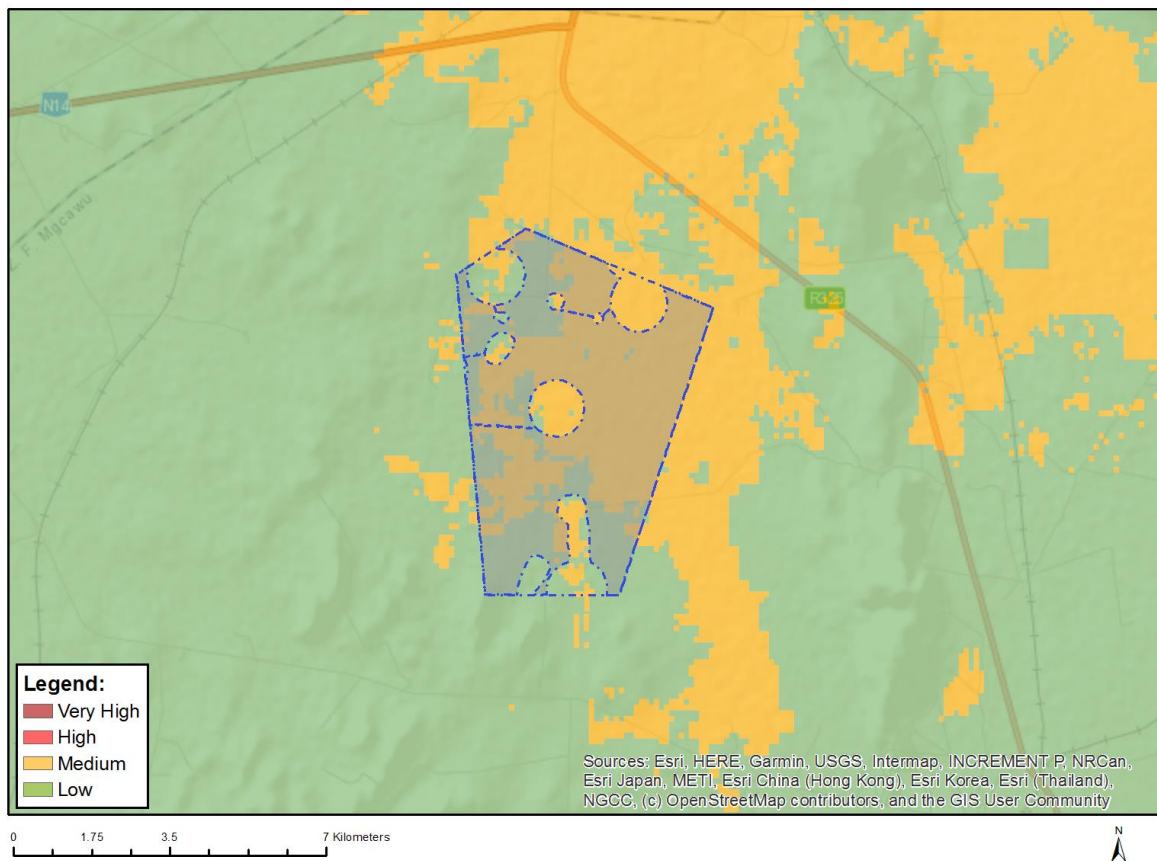


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



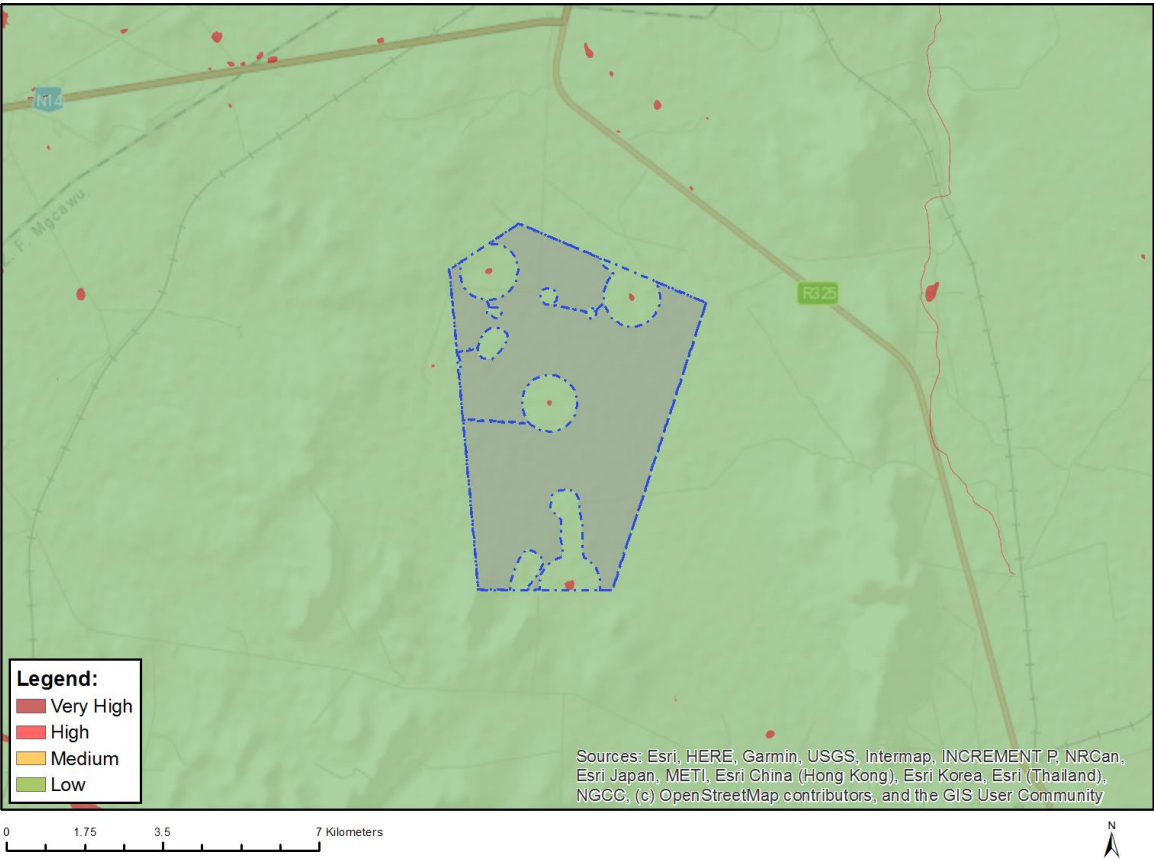
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Subject to confirmation
Medium	Aves-Gyps africanus

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

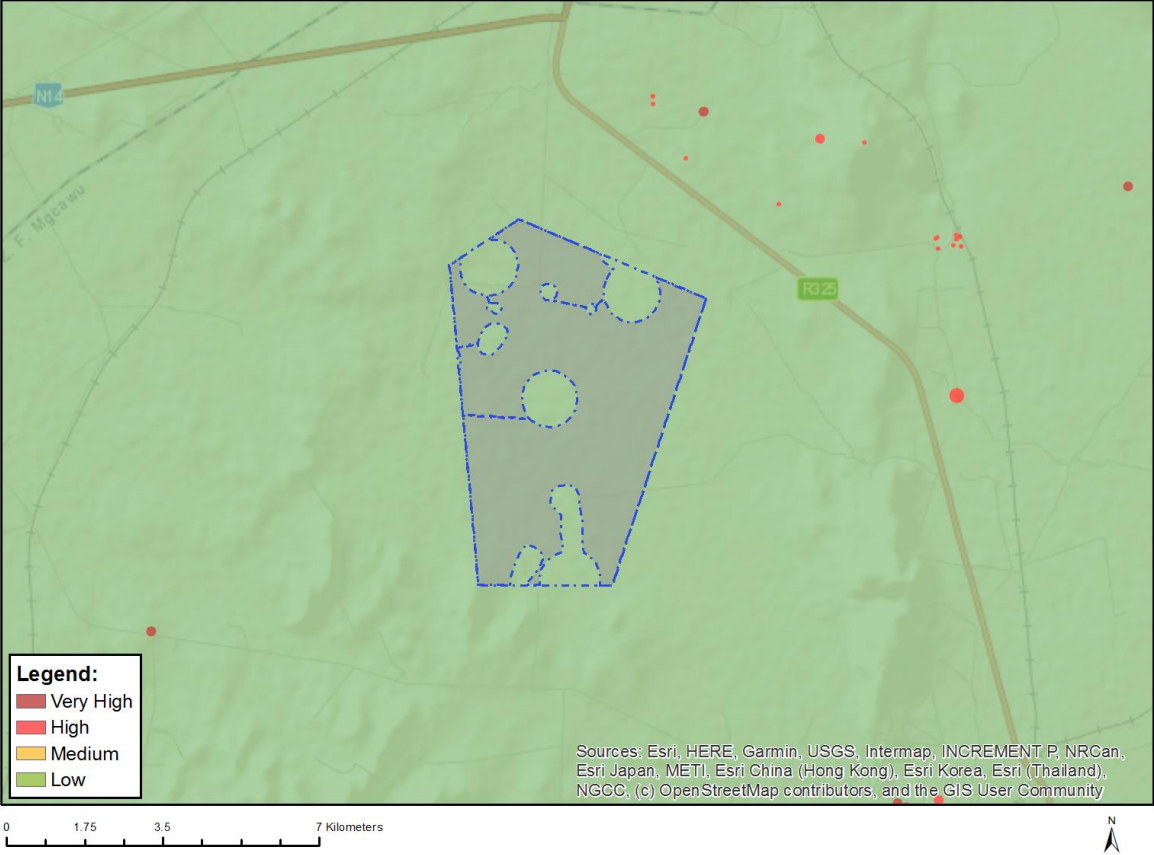


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

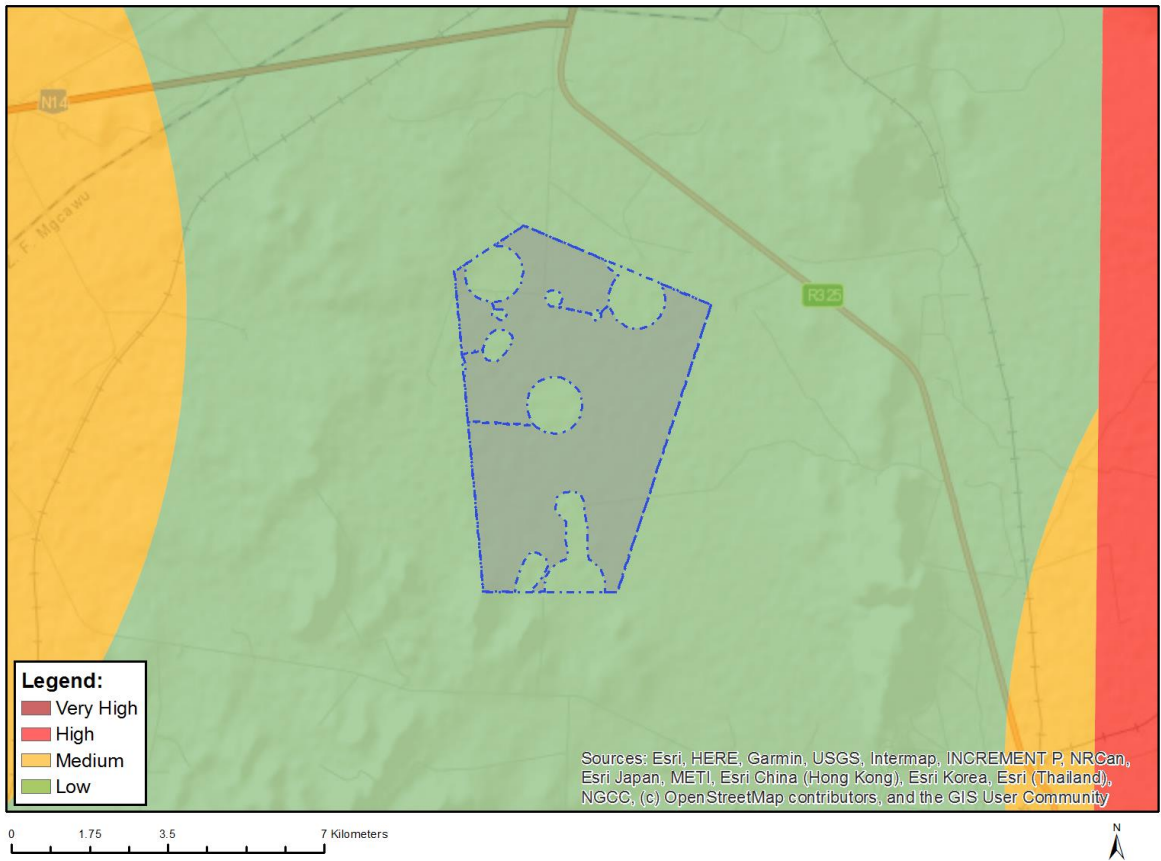


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

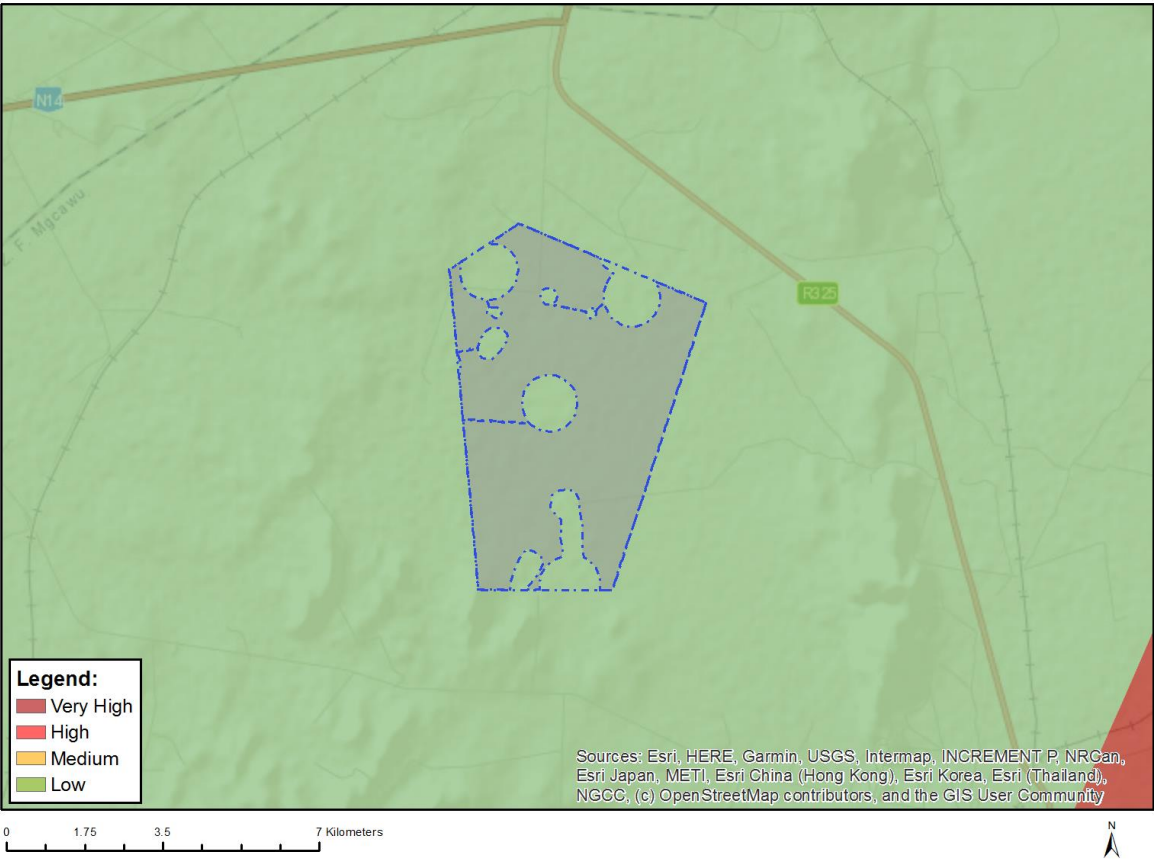


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

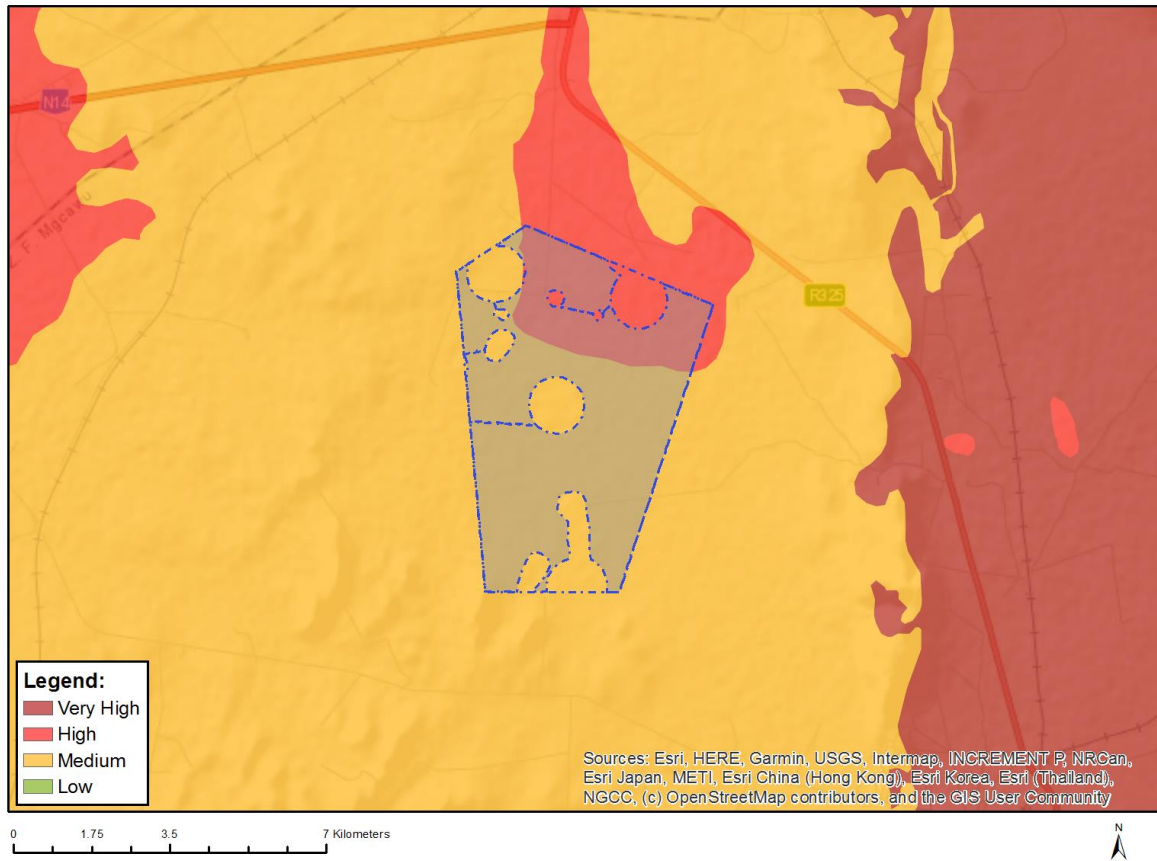


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

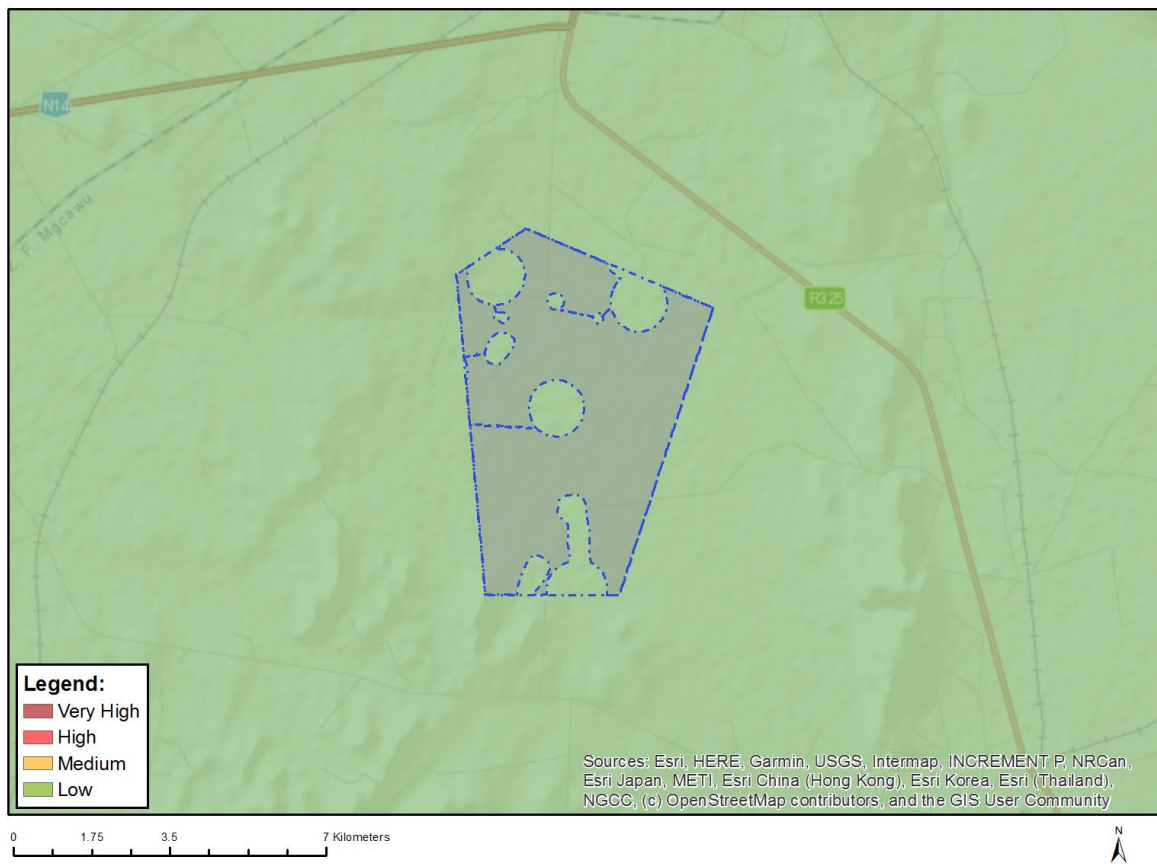


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Features with a High paleontological sensitivity
Medium	Features with a Medium paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



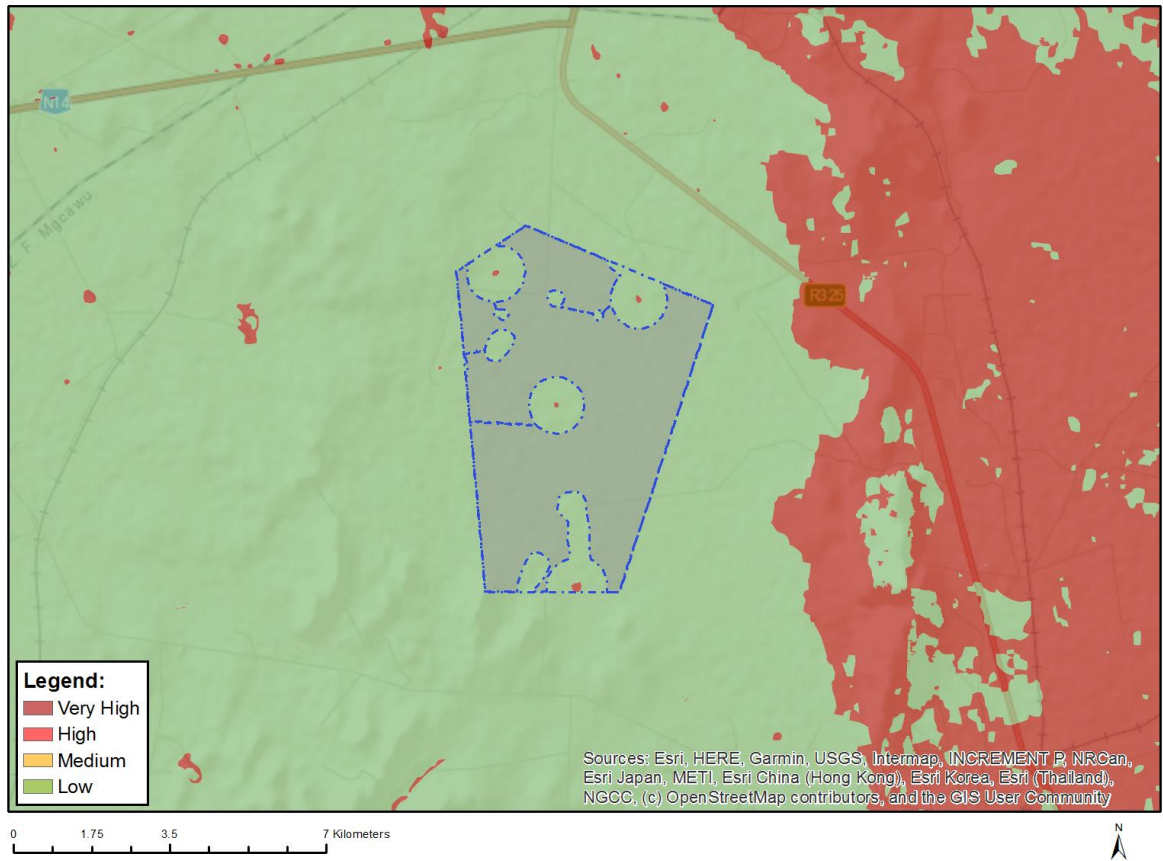
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

APPENDIX 4

SITE SENSITIVITY VERIFICATION REPORT



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MONNAPULA MINING (PTY) LIMITED

SITE SENSITIVITY VERIFICATION REPORT (SSRV) FOR THE PROSPECTING RIGHT APPLICATION ON THE FARM GAPPEPIN RESERVE 670, NORTHERN CAPE

April 2024

Prepared for:
Monnapula Mining (Pty) Ltd

124 Beyers Naude Drive
Franklin Roosevelt Park
Johannesburg
2195

DMRE REF. NC 30/5/1/1/2/13728 PR

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ACRONYMS

AIPs	Alien and Invasive Plants
ATNS	Air Traffic & Navigation Services
CBA	Critical Biodiversity Area
DAFF	Department of Agriculture, Forestry and Fisheries
DFFE	Department of Forestry, Fisheries and the Environment
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Compliance Officer
EN	Endangered
ESA	Ecological Support Area
E-GIS	Environmental Geographic Information System
EIA	Environmental Impact Assessment
ESR	Environmental Screening Report
GIS	Geographic Information System
GN	Government Notice
IBA	Important Bird and Biodiversity Areas
MM	Monnapula Mining (Pty) Ltd
NBA	National Biodiversity Assessment
NEMA	National Environmental Management Act (No. 107 of 1998)
NEM:BA	National Environmental Management: Biodiversity Act (No. 10 of 2004)
SACAD	South African Conservation Areas Database
SAHRIS	South African Heritage Resources Information System
SANBI	South African National Biodiversity Institute
SAPAD	South African Protected Areas Database
SCC	Species of Conservation Concern
SSV	Site Sensitivity Verification
SWSA	Strategic Water Source Area
WMA	Water Management Area
WUL	Water Use Licence

1 AUTHOR DETAILS

1.1 Environmental Assessment Practitioner (EAP)

Company	Prime Resources (Pty) Ltd
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Postal address	Postnet Suite No 002, Private Bag X1, Woodhill 0076
Telephone number	011 447 4888
Fax number	086 604 2219
Email	prime@resources.co.za
Professional affiliations	PrEng PrSciNat SAIMM EAPASA IAIAAsa

Prime Resources is a specialist environmental consulting firm providing environmental and related services and was established in 2003. Prime Resources was founded by Peter Theron (PrEng, SAIMM), who has over thirty-five years' experience in the field of environmental science and engineering.

Louise Jones (EASAPA registered 2019/1367), is a Principal Environmental Scientist with 11 years of experience in the field of environmental science. Her expertise includes environmental impact assessments and management planning, financial liability assessments associated with mine closure and rehabilitation as well as environmental compliance auditing.

Dr Bronwyn Grover is a Senior Environmental Scientist / Chemist (SACNASP 116334) with 8 years of experience in water monitoring, geochemical assessments of waste, water use and waste management licensing, and environmental impact assessments.

Stephen Tarlton is a Senior Environmental Scientist (Pr.Sci.Nat; SACNASP 115011), with an MSc focusing on plant conservation and ecology along with over 10 years of consulting experience. He has expertise in environmental authorisations, monitoring and compliance auditing with experience in several fields including large infrastructure, mining and the waste management.

Certain elements of the verification were also carried out by the specialists who undertook the site visits for their respective specialist studies. These specialists are referenced in this report.

1.2 Declaration of independence

As the independent Environmental Assessment Practitioner, Prime Resources (Pty) Ltd has no other beneficial interest in Monnapula Mining (Pty) Ltd as pertains to the undertaking of this assignment other than fair remuneration in accordance with normal professional environmental consulting practice. The conclusions and opinions expressed in this report are entirely those of Prime Resources and are based wholly upon the information described throughout this report.

The environmental consultants, scientists and engineers under the employ of Prime Resources, insofar as the undertaking of this assignment:

- Act as independent consultants as defined in GN982 of 2014 (as amended)
- Do not have any financial interest in the undertaking of the activity, other than fair remuneration for the work performed
- Have not, and will not, engage in conflicting interests in the undertaking of the activity

- Undertake to disclose to the Competent Authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document
- Will provide the competent authority with access to all information at our disposal, whether such information is favourable to the licence holder or not
- Based on information provided to us by the project proponent and in addition to information obtained during this assignment, have presented the results and conclusion within the associated document to the best of our professional ability
- Reserve the right to modify aspects pertaining to the present investigation should additional information become available through ongoing research and/or further work in this field
- Undertake to have our work peer reviewed on a regular basis.

Compiled by:

Stephen Tarlton

Senior Environmental Scientist

(Pr.Sci.Nat; SACNASP 115011)

Reviewed by:

Louise Jones

Principal Environmental Scientist

(EASAPA registered 2019/1367)

2 INTRODUCTION

Monnapula Mining (Pty) Ltd (MM), has appointed Prime Resources (Pty) Ltd as the Environmental Assessment Practitioner (EAP) to undertake the application process for a Prospecting Right (PR) from the Department of Mineral Resources and Energy (DMRE) in terms of Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (MPRDA). As per GN960 of 2019¹, read with Section 24(5)(a) of the National Environmental Management Act No. 107 of 1998 (NEMA), an Environmental Screening Report (ESR) was generated for the application using the National Web-based Screening Tool.

The ESR confirmed that the Siyanda District Municipality EMF was relevant to the project and identified the initial sensitivity of several environmental themes and the required assessments per the protocols described in GN320 and GN1150 of 2020². This report has been prepared in fulfilment of the following requirement of GN320 and GN1150: *Prior to commencing with a specialist assessment, the current use of the land and the environmental sensitivity of the site under consideration identified by the national web-based environmental screening tool (screening tool), where determined, must be confirmed by undertaking a site sensitivity verification (SSV).*

2.1 Terms of Reference

GN320 and GN1150 prescribes the following for the SSV:

1. The SSV must be undertaken by an EAP or a specialist.
2. The SSV must be undertaken through the use of:
 - a. a desktop analysis, using satellite imagery;
 - b. a preliminary on-site inspection; and
 - c. any other available information.
3. The outcome of the SSV must be recorded in the form of a report that
 - a. confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
 - b. contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
 - c. is submitted together with the relevant reports prepared in accordance with the requirements of the NEMA Environmental Impact Assessment (EIA) Regulations (2014) and specialist studies.

This report serves to record the outcomes of the SSV process.

¹ Notice of the Requirement to Submit a Report Generated by the National Web Based Environmental Screening Tool in terms of Section 24(5)(h) of the National Environmental Management Act, 1998 (Act No 107 of 1998) and Regulation 16(1)(B)(V) of the Environmental Impact Assessment Regulations, 2014, as amended

² Procedures for the Assessment and Minimum Criteria for Reporting on Identified Environmental Themes

3 BRIEF PROJECT DESCRIPTION

3.1 Project description

MM has applied for a PR over an area of 2614.53 ha, located on Portion 0 of the Farm Gappepin Reserve 670 within the Tstantsabane Municipality and the ZF Mgcawu District Municipality, Northern Cape Province. The PR application area is located approximately 19 km east of Olifantshoek, 26 km south-west of Kathu and 35 km north-west of Postmasburg.

The overall objective of the prospecting programme is to determine the presence and economic potential of mineralisation of the area under application. MM intends to prospect for manganese, iron, lead, barium, and tin ore. The proposed prospecting activities will take place in the form of both non-invasive and invasive prospecting activities over the three-year period of the PR (if granted).

Non-invasive activities:

- Desktop research and literature reviews.
- Surface geological mapping.
- Geophysical surveys (ground magnetic and ground gravity techniques).
- Development of geological models.
- Resource estimation.

Should the non-invasive studies show that the resource estimate may be positive the proposed invasive activities include:

- Up to 20 boreholes may be drilled across the site. Boreholes will be drilled to a depth of 50 - 100 m. Drilling will include the construction of:
 - A drill pad to accommodate the drilling rig and sump (10 m x 10 m for each drill site).
 - Access track / road.

The positions of the exploration boreholes (i.e., the drilling grid) and access roads will be confirmed once the initial, non-invasive desktop studies (geological mapping) and geophysical surveys have been completed. In addition to the underlying geology, drillhole locations and access roads will take into account the sensitive environmental and socio-economic features on site as well as the proximity to existing roads/ access tracks and will be determined in consultation with the landowner. A preliminary site plan has been compiled showing the target area for exploration activities (Figure 1).

Water and diesel required for borehole drilling activities will be sourced off site. Storage and handling of dangerous goods i.e. hydrocarbon storage (including diesel storage) will have a combined capacity of less than 30 m³. Drilling contractors accommodation will be off site and portable chemical toilets will be used for the management of sewage waste generated on site. Cores will be taken to a temporary storage yard for logging, sampling and storage. Drill pads will be rehabilitated following the completion of exploration drilling at that position.

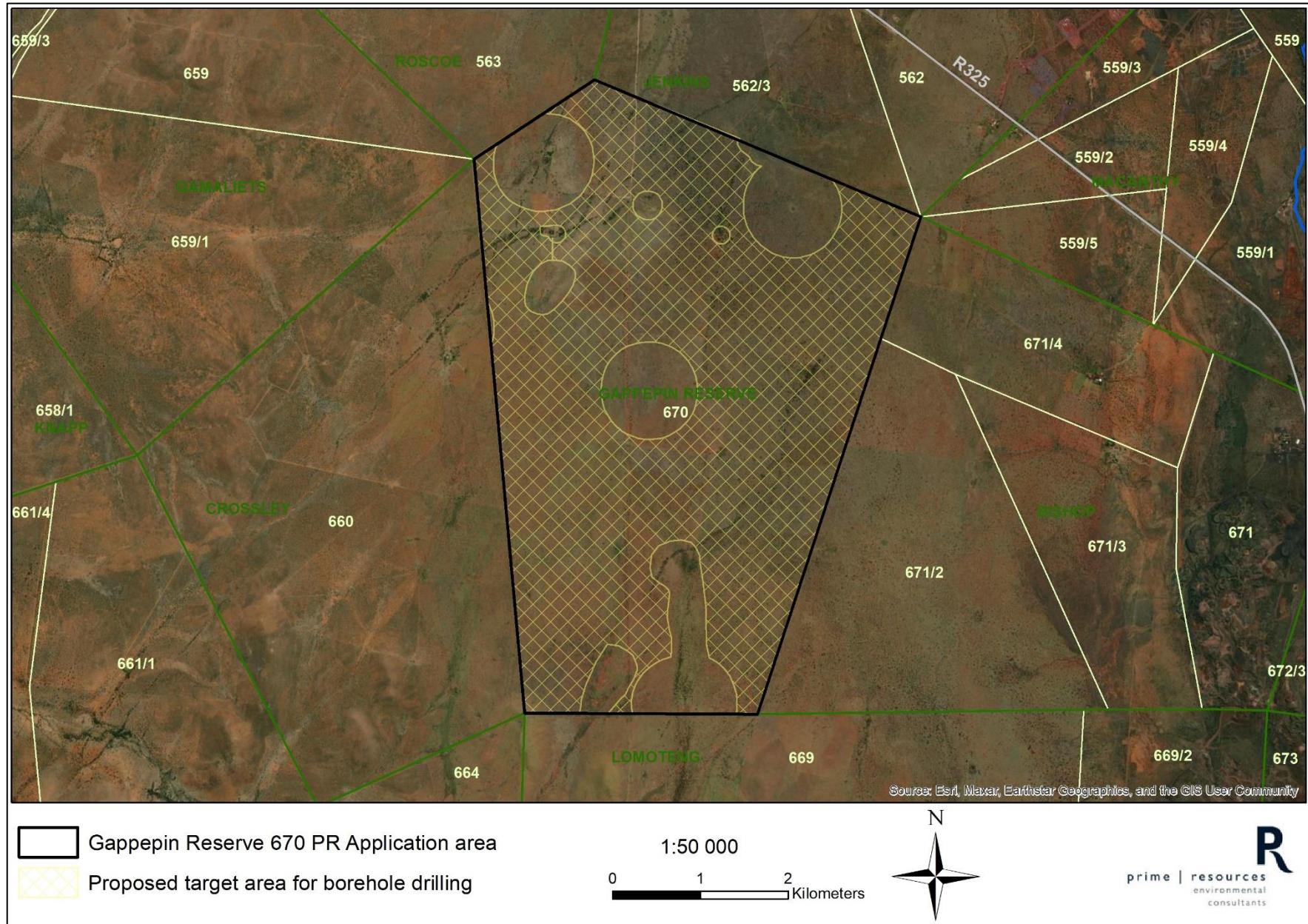


Figure 1. Preliminary site plan showing the target area for exploration activities

4 METHODOLOGY

A comparative analysis of the current use of the land and the environmental sensitivity versus that presented in the ESR was undertaken through the use of the following:

4.1 Desktop analysis

Geographical data was sourced from the Department of Forestry, Fisheries and the Environment (DFFE) Environmental Geographic Information System (E-GIS), the South African National Biodiversity Institute's (SANBI) Biodiversity spatial datasets, the Department of Agriculture, Forestry and Fisheries (DAFF), the Gauteng Conservation Plan, the South African Heritage Resources Information System (SAHRIS), the South African Protected Areas Database (SAPAD), the South African Conservation Areas Database (SACAD), ICT Service Strategy and Systems and the spatial datasets (satellite imagery) provided by Google and Microsoft to assess the expected sensitivity. Existing surface geology maps were also consulted.

4.2 Preliminary on-site inspection

A preliminary site inspection was undertaken on 23 April 2024, to assess the broad ecology at a landscape scale and to confirm the current land uses.

4.3 Any other available information

Applicable information was also sourced from other BARs and Environmental Impact Assessments (EIAs) compiled for projects in the area. The latest Integrated Development Plans (IDPs) for the ZF Mgqawu District Municipality and the Tstantsabane Local Municipality were also consulted.

5 SUMMARY OF ENVIRONMENTAL SCREENING REPORT

Table 1 below summarises the environmental sensitivities of the themes per the ESR as well as the required specialist assessments / procedures as per GN320 / GN1150. Further environmental receptors were identified by the EAP in addition to the themes of the ESR which are further reported in the Basic Assessment Report (BAR).

Following the compilation of the initial screening report (as submitted with the PR application) the environmental mitigation hierarchy was applied and the site layout was revised so that sensitive areas were avoided and considered “no-go” areas. The revised layout was used to generate the latest ESR (Appendix 3 of the BAR).

Table 1. Predicted environmental sensitivity per theme and specialist studies identified in the ESR

Theme	Predicted sensitivity (2024)	Required specialist assessment / procedure	Specialist / EAP assessment
Agriculture	Medium	GN320 Agricultural Compliance Statement	Agricultural Compliance Statement for the Gappepin Reserve Prospecting Right Application, Digital Soils Africa (Pty) Ltd (DSA) (April 2024)
Animal Species	Medium	GN1150 Terrestrial Animal Species Compliance Statement	Compliance Statement
Aquatic Biodiversity	Low	GN320 Aquatic Biodiversity Compliance Statement	Desktop Wetland Delineation and Impact Assessment for the Proposed Prospecting Right Application on Gappepin Reserve 670, near Kathu, Northern Cape Province, The Biodiversity Company (March 2024)
Archaeology and Cultural Heritage	Low	No protocol (Appendix 6 of GN982), General Assessment	Heritage Compliant Statement: Prospecting Right Application for Monnapula Mining on the Farm Gappepin Reserve 670, Northern Cape Province, Archaeos (March 2024)
Civil Aviation	Low	No protocol (Appendix 6 of GN982), General Assessment	EAP
Defence	Low	No protocol (Appendix 6 of GN982), General Assessment	EAP
Palaeontology	High	No protocol (Appendix 6 of GN982), General Assessment	Palaeontological Impact Assessment for a Prospecting Right Application on Gappepin Reserve, between Olifantshoek and Kathu, Northern Cape Province, Professor Marion Bamford (March 2024)
Plant Species	Low	GN1150 Terrestrial Plant Species Compliance Statement	Compliance Statement
Terrestrial Biodiversity	Low	GN320 Terrestrial Biodiversity Compliance Statement	Desktop Terrestrial Assessment for the Proposed Prospecting Right Application on Gappepin Reserve 670, near Kathu, Northern Cape Province, The Biodiversity Company (March 2024)
Other specialist studies considered			
Noise	No ESR sensitivity	GN320 Noise Compliance Statement	<i>Not applicable</i> Due to the footprint and nature of the proposed project, the increase in ambient noise levels is anticipated to be restricted to few sensitive receptors.
Radioactivity	No ESR sensitivity	No protocol (Appendix 6 of GN982), General Assessment	<i>Not applicable</i> The proposed project is not anticipated to disturb any radioactive sources or produce radioactive byproducts or waste.

6 RESULTS AND DISCUSSION

This section summarises the outcomes of the site sensitivity verification. The various specialist studies carried out are referred to in Table 1.

6.1 Current land uses

The landscape of the proposed PR area and its surrounds are predominantly low shrubland and natural grassland, featuring some mining activities and farming activities (Figure 2 and Figure 3).

Land uses surrounding the study area include mining (within 4 km), conservation (12 km) and the Lohatla military training centre (13 km). A considerable extent of the surrounding land is administered by the Maremane Communal Property Association.

The proposed activities are not expected to directly change the land uses of the proposed site. Once drilling is complete the drill pads will be rehabilitated. As far as feasible, the disturbed areas will be returned to the original land use.

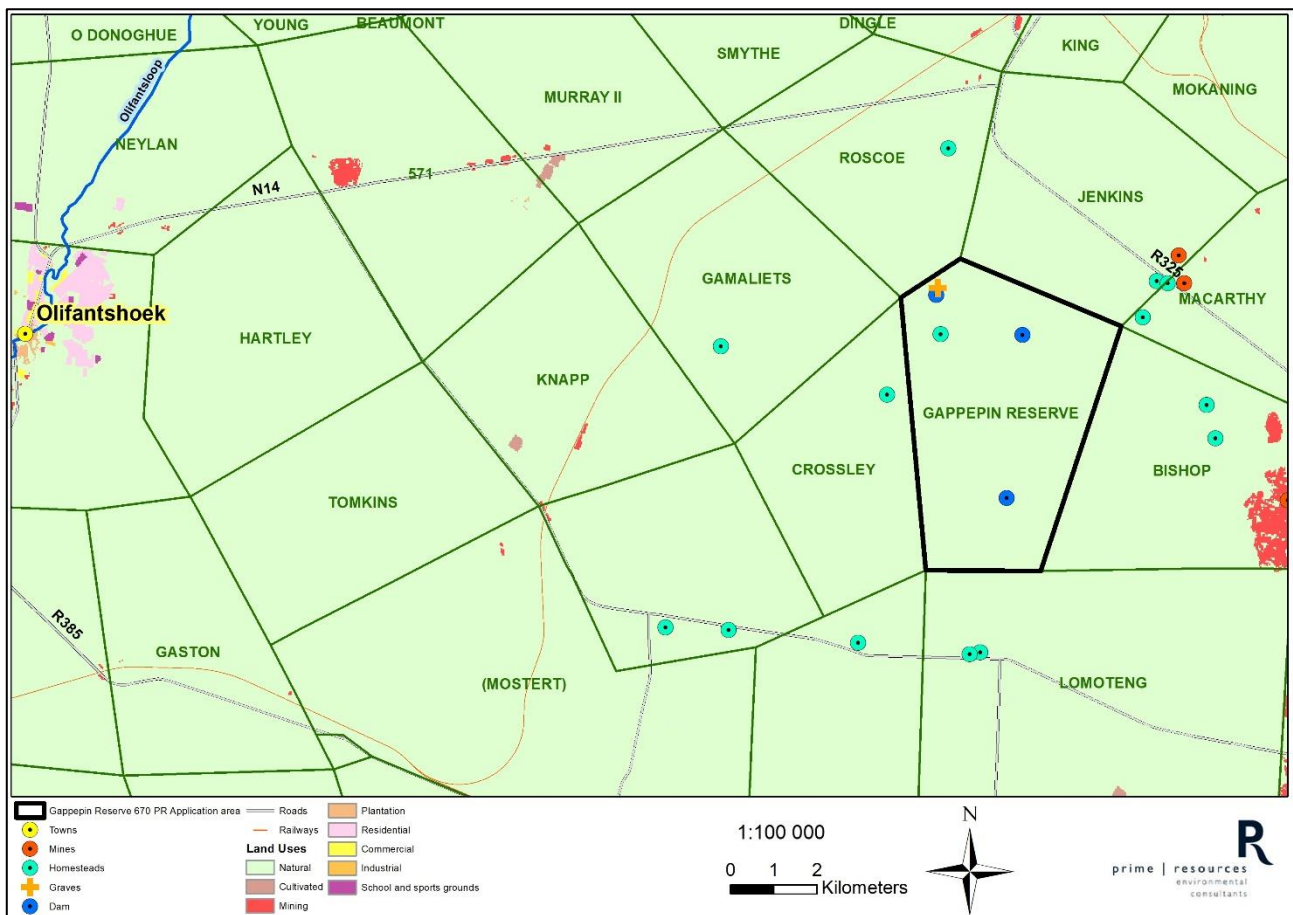


Figure 2. Land uses associated with PR area and surrounds

Portion 0 of the Farm Gappepin Reserve 670



Photo 1. Homestead



Photo 2. Livestock

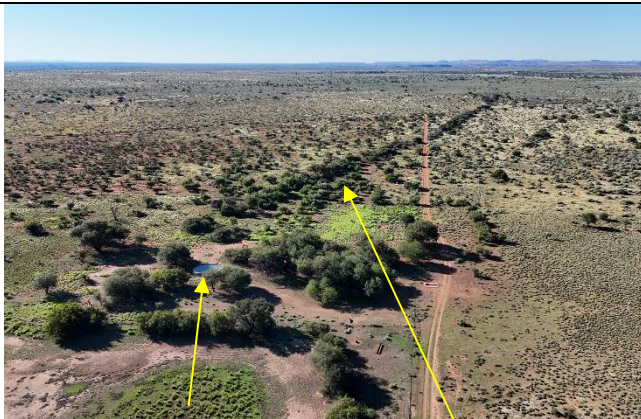


Photo 3. Water reservoir (dam) and graves in treed area



Photo 4. Low shrubland and natural grassland



Photo 5. Windmills and water reservoir (dam)



Photo 6. Existing fences



Photo 7 and 8. Existing farm tracks

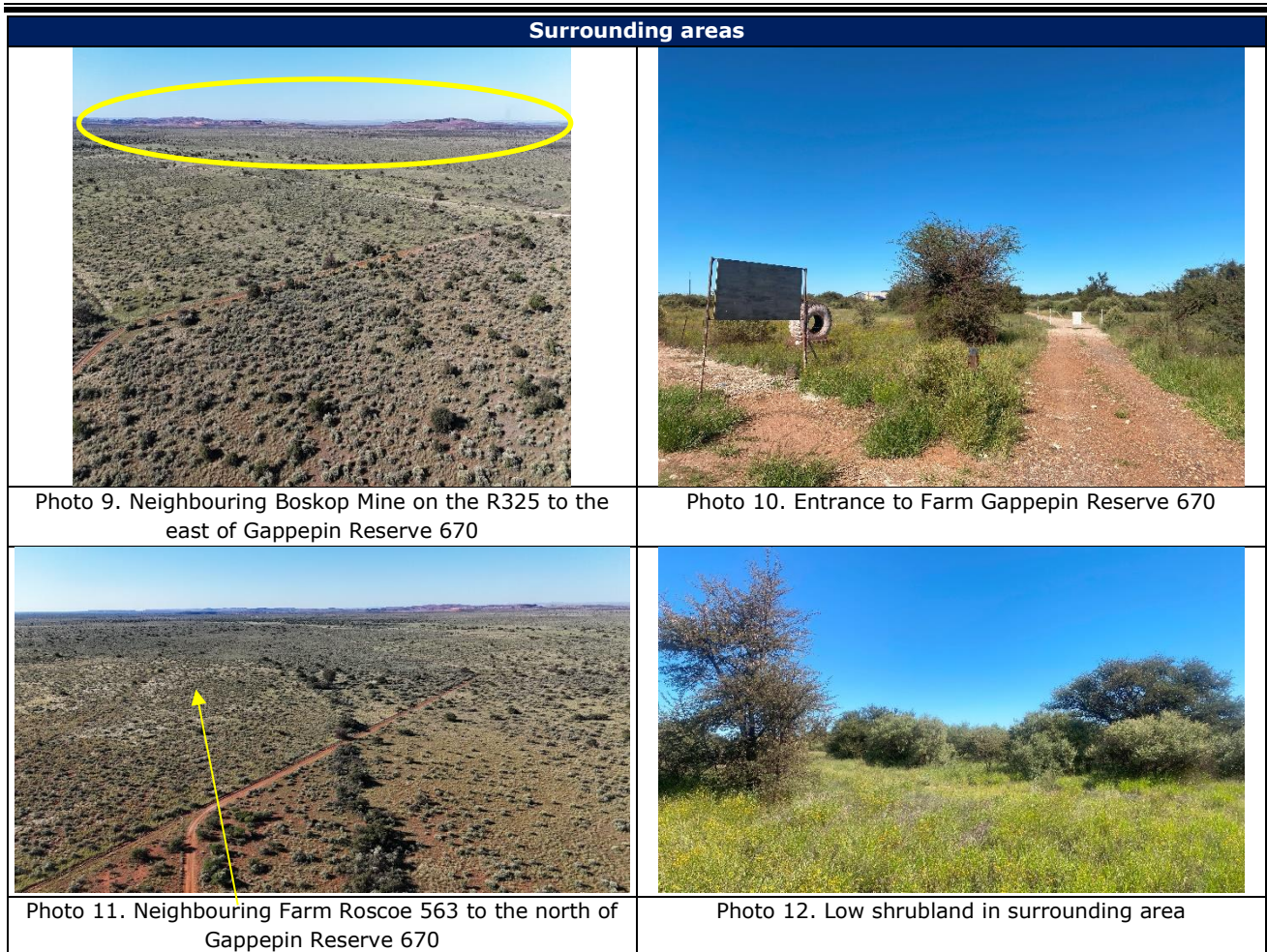


Figure 3. Photos taken during the preliminary on-site inspection

6.2 Agriculture

The ESR classifies the proposed PR area as having a **medium sensitivity** for the Agricultural Theme. It should be noted that only the highest environmental sensitivity is indicated in the ESR. Due to the prevailing soil conditions, vegetation types and the quantity of rainfall experienced in the area, the majority of the site has been classified in the ESR as having a low sensitivity for the Agricultural Theme with only patches of medium sensitivity (Figure 4). Drill pads and access roads can be sighted in consultation with the landowner to avoid the patches of higher sensitivity and clearing will be kept to a minimum. The invasive activities are expected to be of relatively short duration, disturbed areas can be rehabilitated and returned to the agricultural land use when the drilling is complete.

The verification for this theme was performed by Digital Soils Africa (2024). The assessment aligns with the screening tool of medium agricultural sensitivity. Due to the small footprint and low impact on existing agricultural activities. The development will not have a significant impact on agricultural activities in the area and poses no threat to food security. In terms of agricultural sensitivity, the assessment indicated that the development should be allowed to proceed.

Agricultural Theme Conclusion

- ESR recommendation: Medium sensitivity
- Assessment: The predicted sensitivity of the screening tool is not disputed
- Recommendation: The agricultural sensitivity can be confirmed medium.

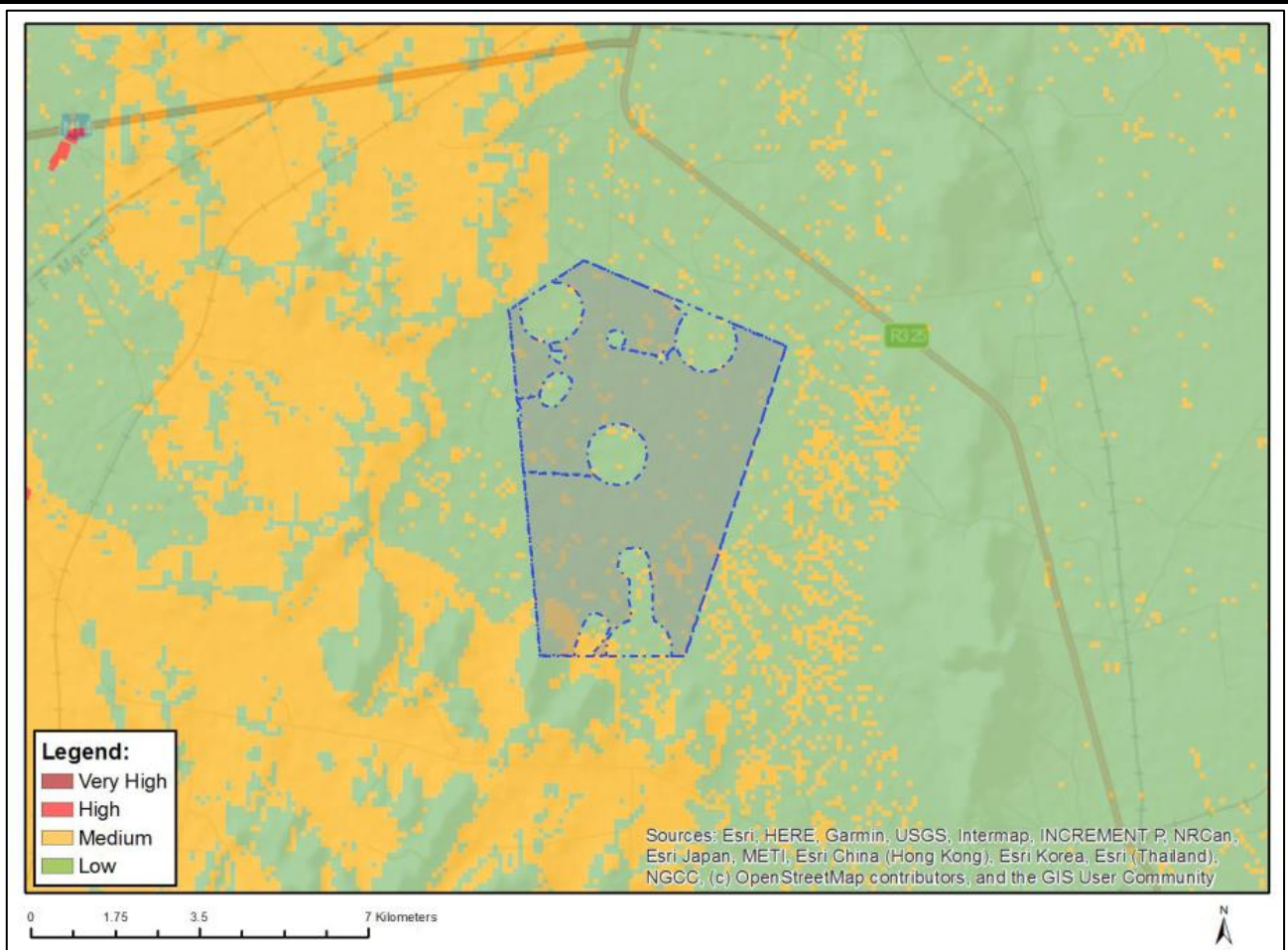


Figure 4. Agricultural sensitivity as per the ESR, 2024

6.3 Archaeological and cultural heritage

The ESR classifies the area as having a **low sensitivity** for the Archaeological and Cultural Heritage Theme (Figure 6). No structures are expected to be disturbed by the proposed activities and all existing structures will be avoided during the sighting of the drill pads and the access roads.

Archaeological and Cultural Heritage Theme Conclusion

- ESR recommendation: Low sensitivity
- Assessment: No structures of heritage value are expected to be disturbed by the proposed activities. If structures are encountered the access roads / drill pads will be relocated an appropriate distance from these structures. A chance finds procedure to address objects of heritage value will be implemented.
- Recommendation: Remain Low sensitivity.

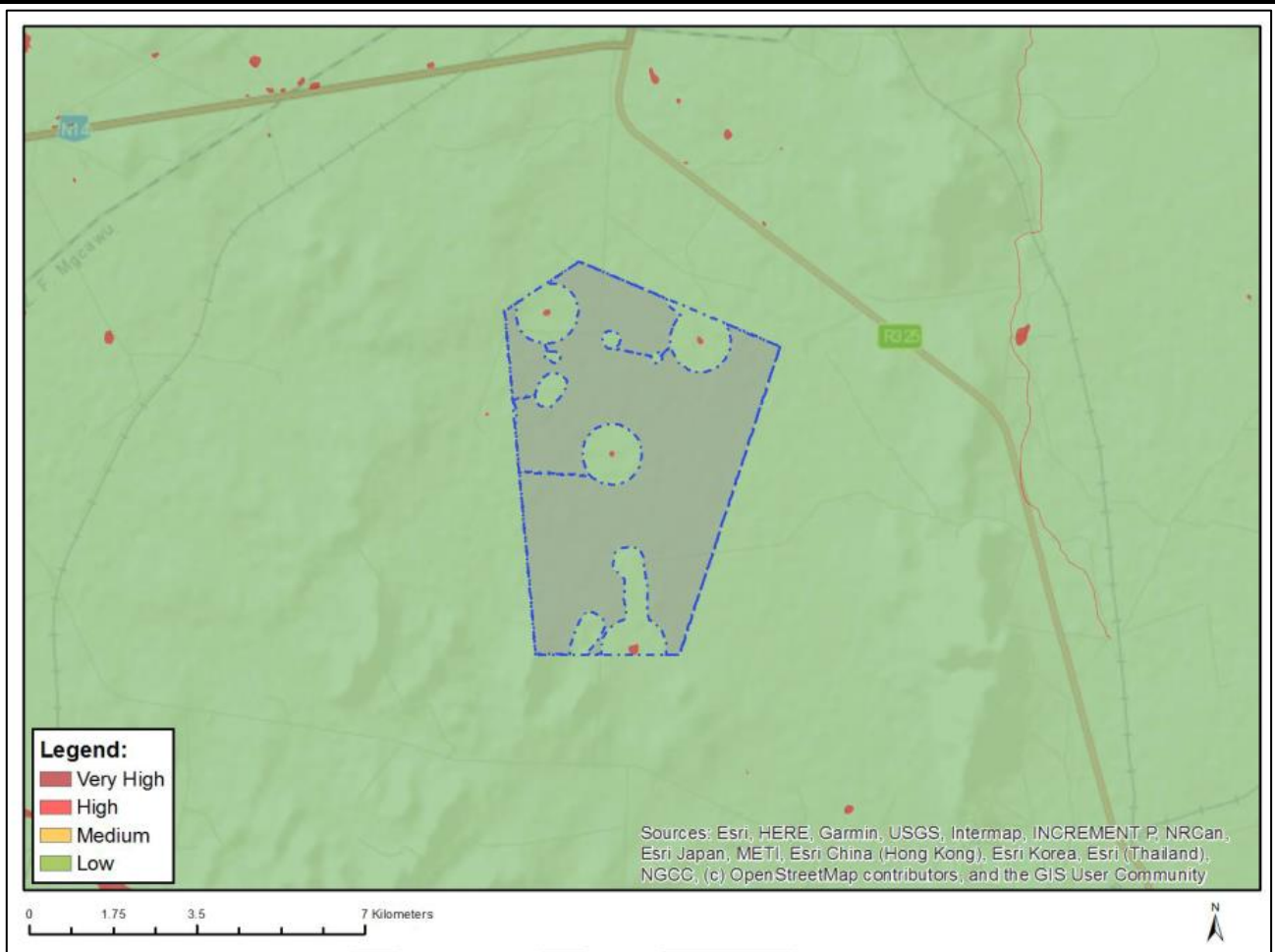


Figure 5. Archaeological and cultural heritage sensitivity as per the ESR, 2024

6.4 Terrestrial biodiversity

The revised ESR classifies the area as being of low sensitivity for the Terrestrial Biodiversity Theme (Figure 6), due to the lack of

- Critical Biodiversity Areas (CBA)
- Ecological Support Areas (ESAs) including aquatic habitats
- Endangered Ecosystems and vegetation types.

The site is mostly composed of the Khatu Bushveld, Oliphantshoek plains and Kuruman Thronveld vegetation types. All of these vegetation types are considered to be “least concern.” Once access to the site is granted a site visit will confirm the vegetation units and habitat types on site

Originally the ESR included all the aquatic habitats however, as these can be avoided the revised SSV considered the aquatic habitats “no go’ areas. By avoiding the aquatic habitats (which appear to be shallow pans), and excluding them from the prospecting right area, the biodiversity sensitivity for the Terrestrial Biodiversity Theme dropped from very high to low when these mitigation measures were applied (Figure 6). The desktop biodiversity assessment concluded that the terrestrial biodiversity had a low sensitivity, however this will be confirmed once access to the site is granted (The Biodiversity Company, 2024b).

Terrestrial Biodiversity Theme Conclusion

- ESR recommendation: Low sensitivity with the avoidance of aquatic habitats

- Assessment: The ESR indicates a low sensitivity when aquatic habitats and associated buffer zones are suitably avoided. No other features of significant biodiversity importance were confirmed during the from the SSV investigation.
- Recommendation: Low provided that aquatic habitats are avoided.

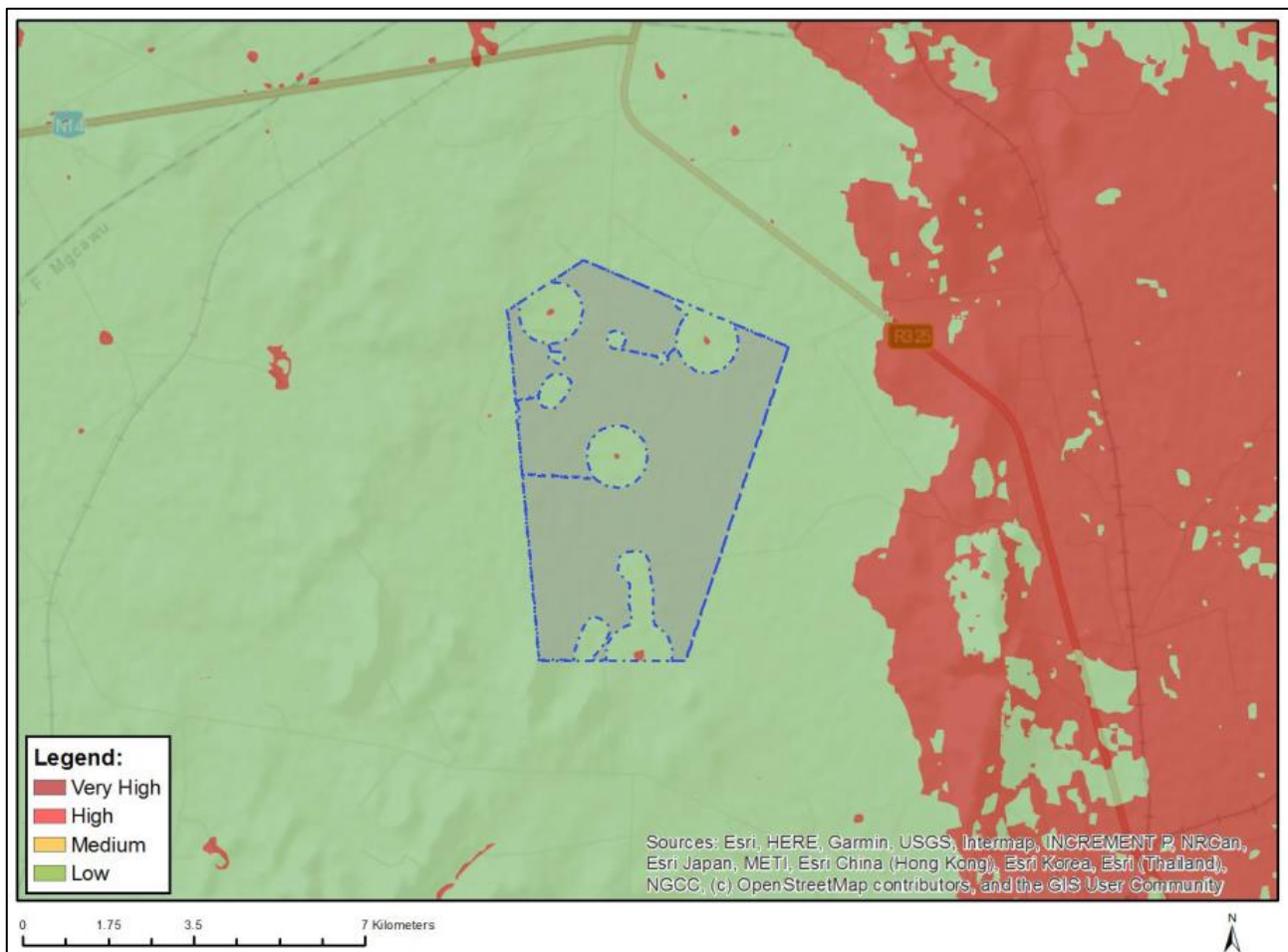


Figure 6. Terrestrial sensitivity as per the ESR, 2024

6.5 Palaeontology

The ESR classifies the area as having a **high sensitivity** for the Palaeontology Theme (Figure 7) due to the potential presence of geological features that may support fossils (Figure 8). The SSV for this theme was performed as part of a phase 1 (desktop) Palaeontological Impact Assessment prepared by Professor Marion Bamford in March 2024.

This palaeontological sensitivity is triggered as the site is on tertiary to Quaternary surface limestone that might have trapped fossils, although no such fossils have been reported from here (Bamford, 2024). Soils and sands do not preserve fossils; so far there are no records from the Tertiary-Quaternary limestone of plant or animal fossils in this region, so it is very unlikely that fossils occur on the site (Bamford, 2024).

Palaeontology Theme Conclusion

- ESR recommendation: High sensitivity
- Assessment: It is recommended that no further palaeontological impact assessment is required unless fossils are found by the contractor, environmental officer, or other designated responsible person. It is extremely unlikely that any fossils would be found in the loose soils and sands that cover the area or in

the surficial limestone, or the iron or manganese ores below ground that will be drilled. Nonetheless, a Fossil Chance Find Protocol should be added to the eventual EMPr.

- Specialist recommendation: Low sensitivity.

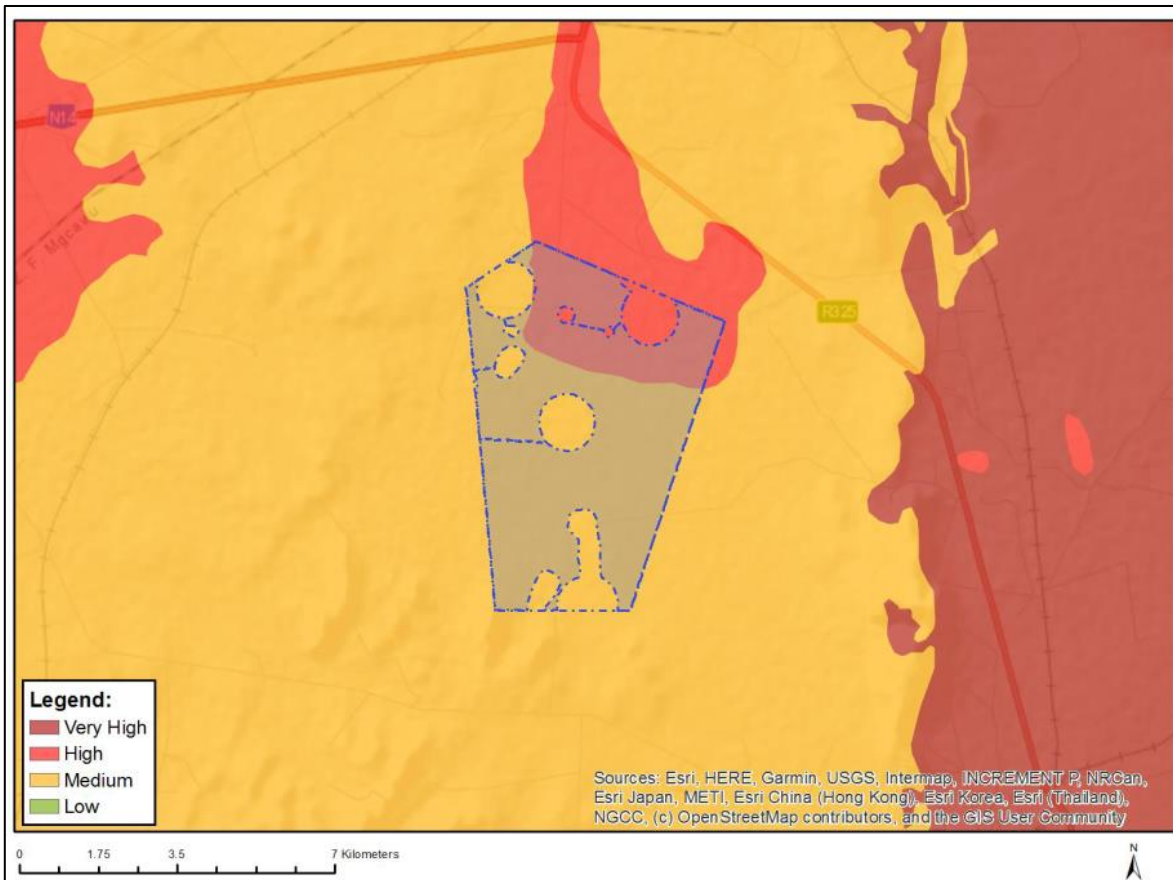


Figure 7. Palaeontology sensitivity as per the ESR, 2024

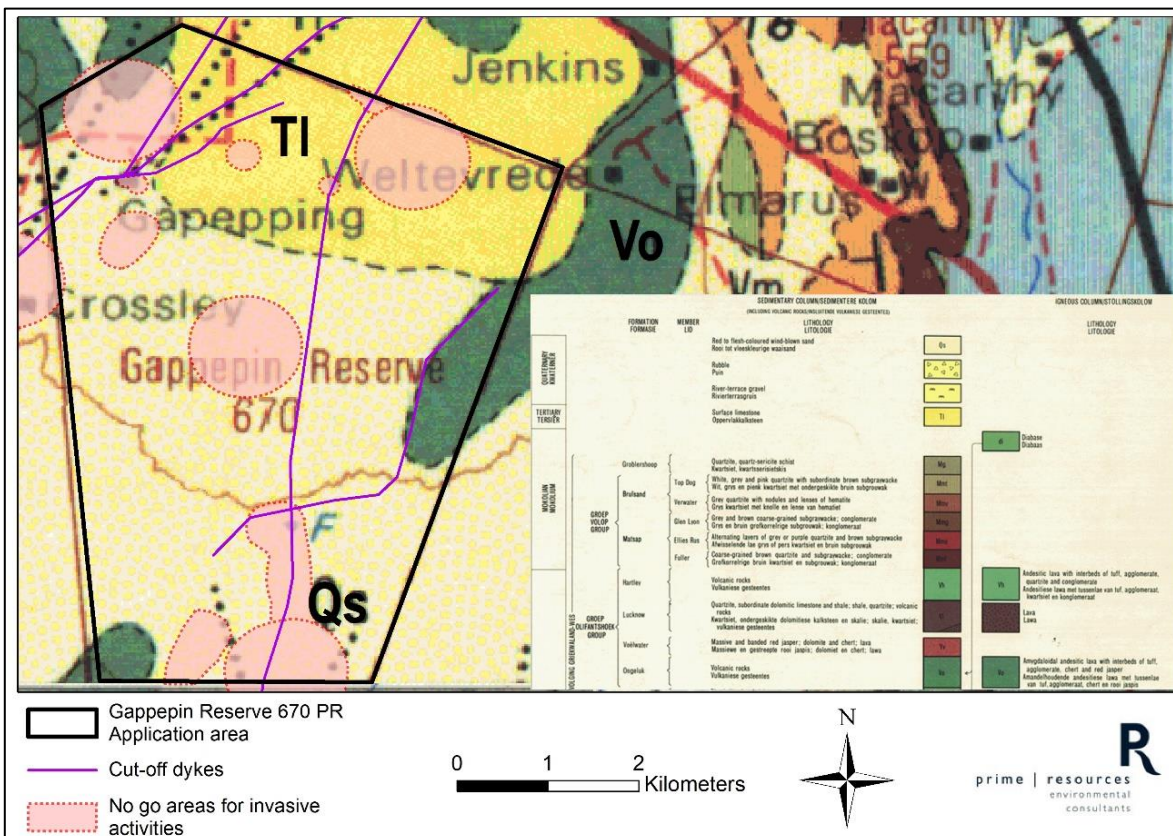


Figure 8. Prevailing geology

6.6 Animal species

The ESR classifies the area as being of **medium sensitivity** for the Animal Species Theme (Figure 9), due to the expected presence of the following bird SCC:

- *Gyps africanus* (White-backed vulture; Critically Endangered).

The proposed PR area is not located within an Important Bird Area (IBA) (Figure 10), nor does it occur within a formally Protected Area. The nearby land uses such as mining and military training also are expected to dissuade birds from the general area. The proposed activities are not expected to result in impacts that would disproportionately affect birds or their nesting sites. Nesting sites that are observed on the proposed PR, will be avoided as far as feasible. Based on the desktop assessment it can be said that the proposed PR area is a low sensitivity location (The Biodiversity Company, 2024b) however, a field assessment should be undertaken before prospecting activities are undertaken and once access to the site is granted.

Animal Species Theme Conclusion

- ESR recommendation: Medium sensitivity
- Assessment: The presence of *Gyps africanus* has not been confirmed or disputed however, the proposed invasive activities (drilling and the development of access roads) are not expected to impact bird species with the application of appropriate mitigation measures.
- Recommendation: The sensitivity should remain Medium until presence/absence of *Gyps africanus* within the study area can be confirmed (The Biodiversity Company, 2024b).

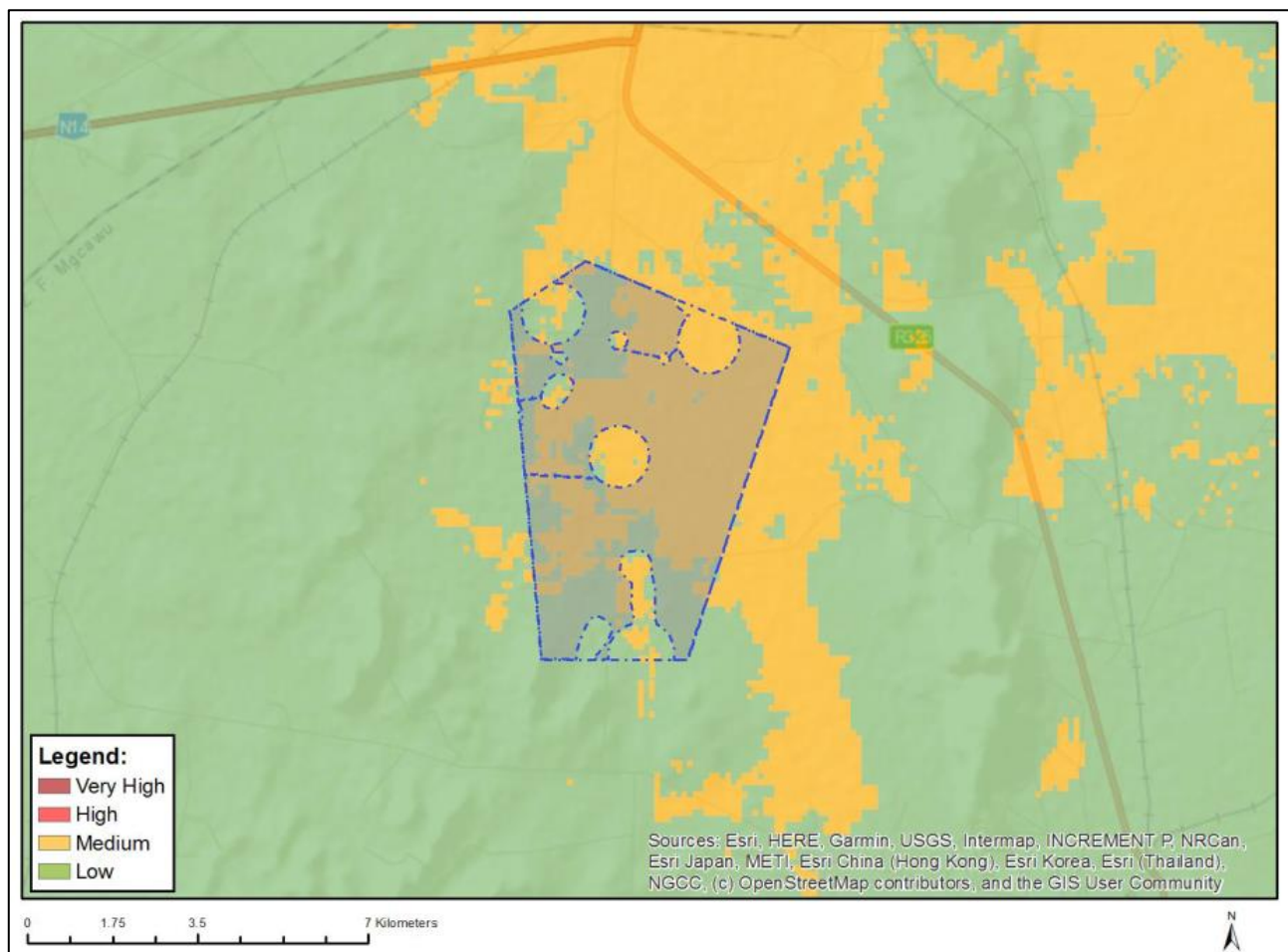


Figure 9. Animal species sensitivity as per the ESR, 2024

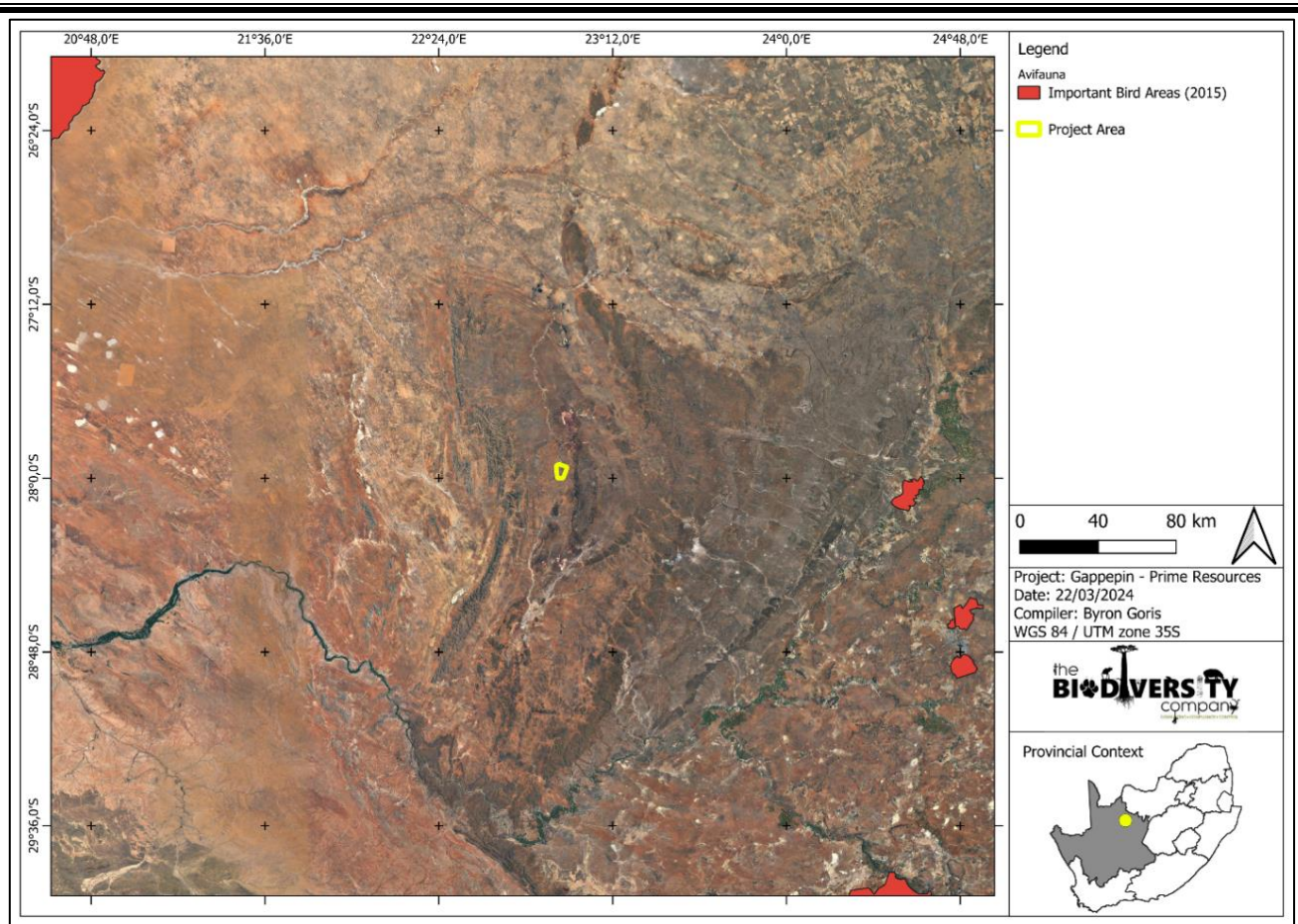


Figure 10. Important Bird Areas in relation to the PR area (The Biodiversity Company, 2024)

6.7 Plant species

The ESR classifies the area as being **low sensitivity** for the Plant Species Theme. No sensitive species or vegetation types were identified through the ESR. However, action will be taken to mitigate impacts to the vegetation within the project footprint. The desktop Biodiversity assessment concluded that there is a low likelihood that Species of Conservation Concern (SCC) occur on site however, this will be confirmed when/if access to the site is granted and prior to any activities taking place on site (The Biodiversity Company, 2024b). Appropriate mitigation measures will be applied to ensure the existing vegetation is disturbed minimally and where disturbance takes place, suitable restoration measures are applied.

Plant Species Theme Conclusion

- ESR recommendation: Low sensitivity
- Recommendation: Remain Low sensitivity.

6.8 Aquatic biodiversity

The ESR classified the area as being of **low sensitivity** for the Aquatic Biodiversity Theme. The site is located in quaternary catchment D41J of the Vaal Water Management Area in the arid Northern Cape. The revised ESR considers the several small pans and associated buffer zones as no-go areas and these areas are excluded from the project footprint, thereby appropriately avoiding the aquatic habitats and surface water resources (Figure 11).

By implementing the appropriate mitigation measures and avoiding the impacts to the aquatic habitats within the proposed site, the proposed activities can be confined to areas that have low sensitivity and the impact on the aquatic habitats will be avoided.

The assessment undertaken by The Biodiversity Company (2024a) concluded that provided that the project can avoid the depressions and aquatic habitat, the site can be classified as having low aquatic biodiversity sensitivity.

Aquatic Biodiversity Theme Conclusion

- ESR recommendation: Low sensitivity provided that the surface water resources are avoided
- Assessment: Confining activities to areas of the site where there are no surface water resources suitably avoids impacts to surface water resources and associated aquatic habitats.
- Recommendation: A Low sensitivity is confirmed provided that small pans and associated buffer zones are avoided.

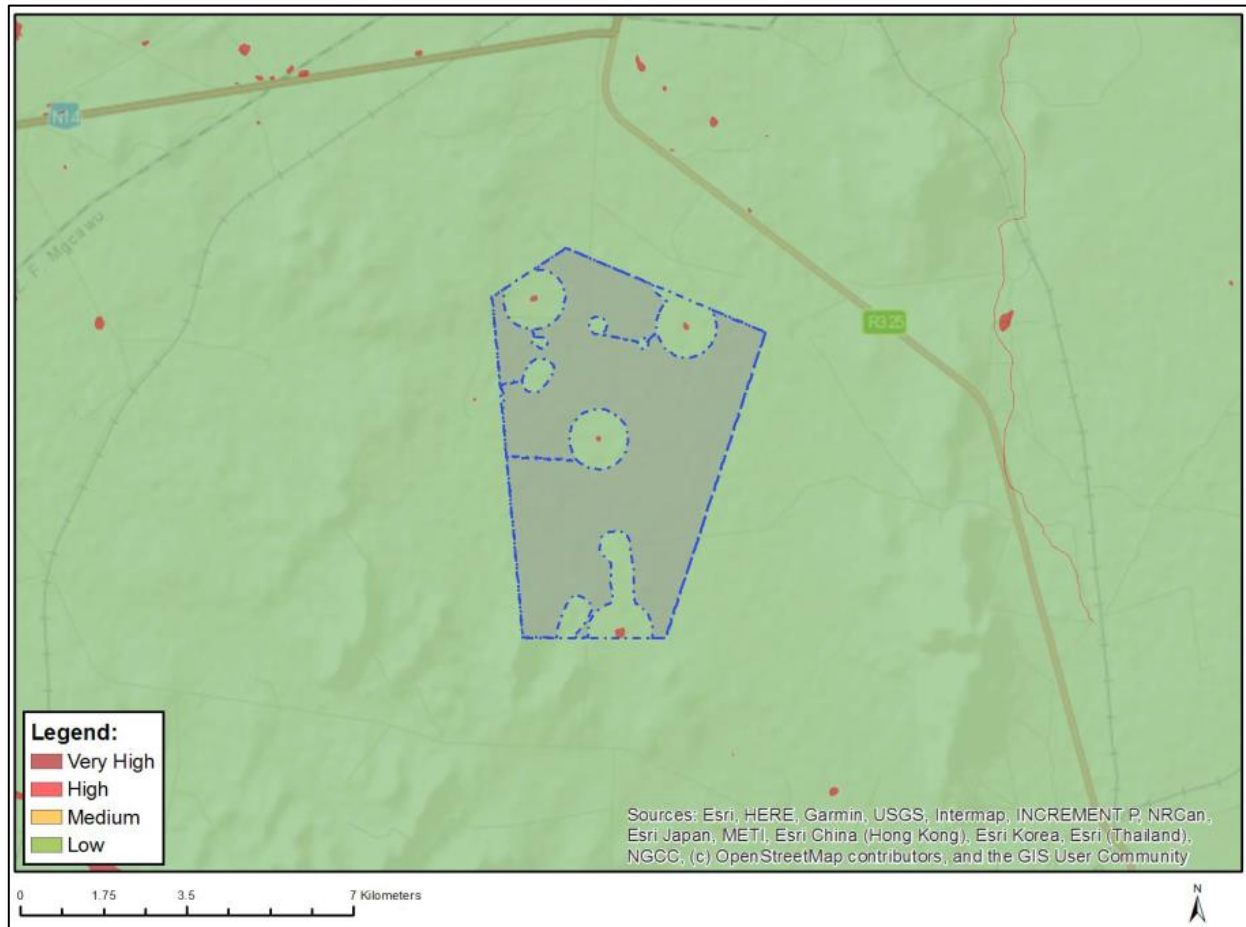


Figure 11. Aquatic biodiversity sensitivity as per the ESR, 2024

6.9 Civil aviation

The ESR indicated that the Civil Aviation Theme has a **low sensitivity** because the proposed project is located a suitable distance away from a civil aviation radar or civil aviation aerodrome (Figure 12). In accordance with the South African Civil Aviation Technical Standards List of 2011 (Document SA-CATS 139 - Aerodromes and heliports), no activities of the proposed project will exceed 45 m above ground level nor 150 m above the mean ground level. This low sensitivity and relatively low project height indicates that the project is unlikely to influence the airspace and will not affect any civil aviation installations.

Civil Aviation Theme Conclusion

- ESR recommendation: Low sensitivity
- Assessment: The proposed project will not result in obstacles to civil aviation
- EAP recommendation: Low sensitivity is confirmed.

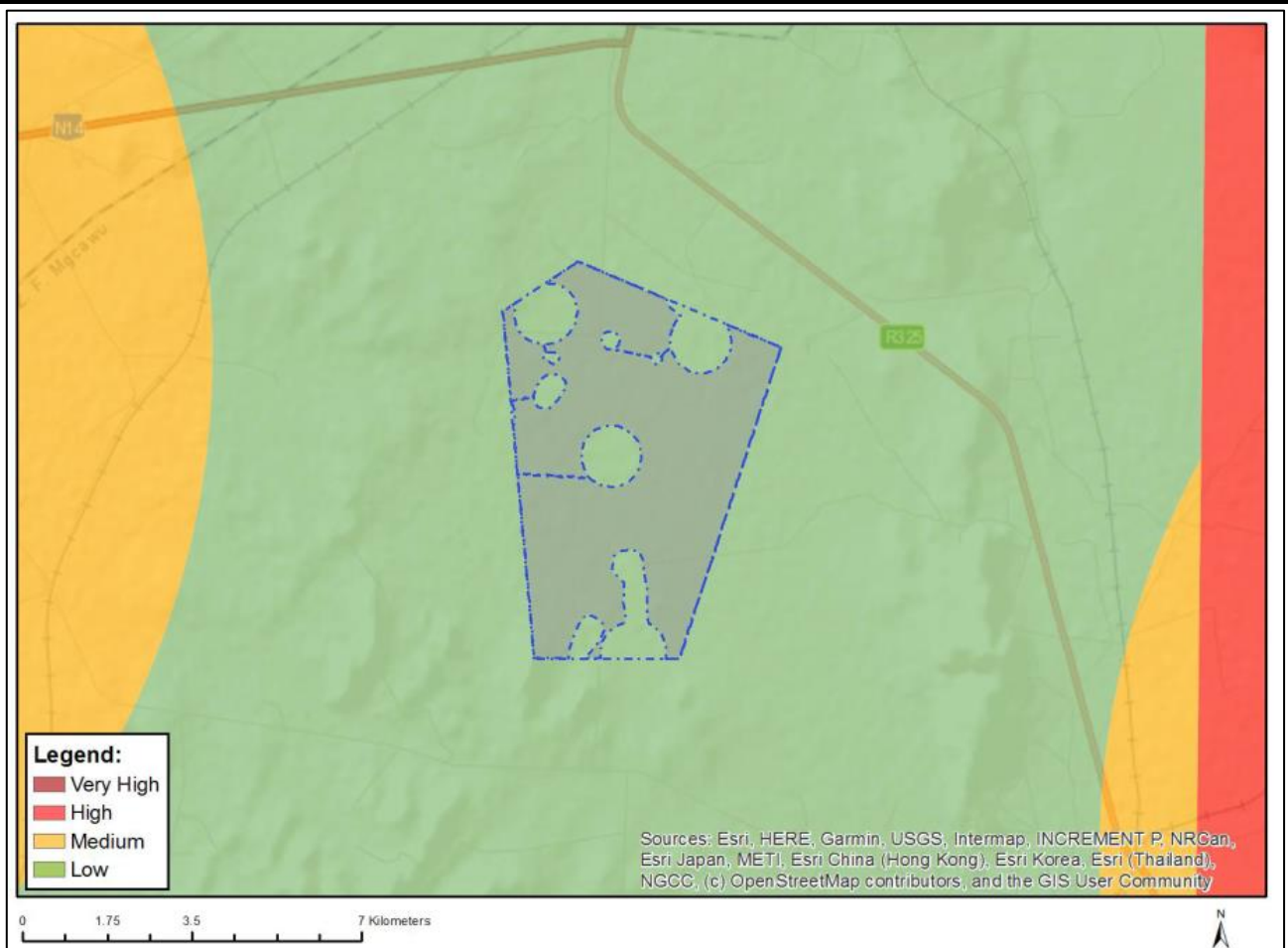


Figure 12. Civil aviation sensitivity as per the ESR, 2024

6.10 Defence

The ESR indicated that the Defence Theme has a **low sensitivity** (Figure 13). The Lohatla is a training area of the South African National Defence Force and located relatively close to the project and the Vastrap Weapons Range and military airfield is situated in the Kalahari Desert north east of Upington. It is highly unlikely that the proposed project will compromise the ability of the defence force to defend against any unrest / threats to security. It is expected that none of the components of the proposed project will have an impact on military radar installations or any defence-related aspect.

Defence Theme Conclusion

- ESR recommendation: Low sensitivity
- Assessment: The proposed project is unlikely result in situations that compromise the defence of the republic
- EAP recommendation: Low sensitivity is confirmed.

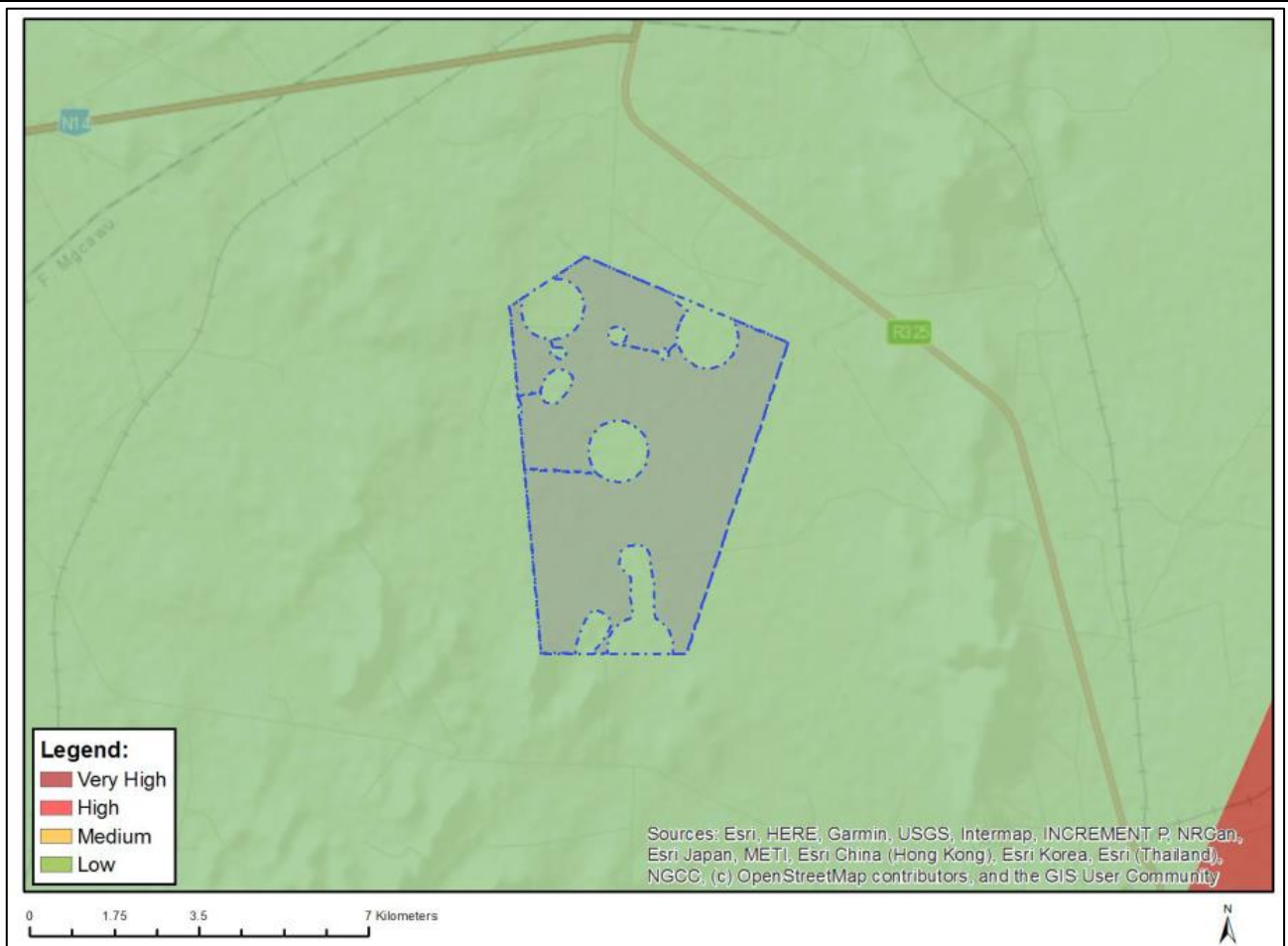


Figure 13. Defence sensitivity as per the ESR, 2024

7 CONCLUSION

The site of the proposed PR is largely natural and undisturbed by historical. The sensitivity of the themes was verified following the site visit and confirmed through specialist studies and compliance statements. The outcomes of the comparative analysis performed to verify the sensitivity of the various environmental themes for the site under application per the ESR as well as the adjusted / verified sensitivity are summarised in Table 2.

Table 2. Summary of the adjusted / confirmed verified sensitivity of the environmental themes

Theme	Predicted sensitivity (ESR)	Adjusted / confirmed verified sensitivity	Verification method	Assessment protocol
Agriculture	Medium	Medium	Specialist assessment	GN320 Agricultural Agro-Ecosystem Specialist Assessment / Agricultural Compliance Statement
Animal Species	Medium	Medium	Specialist assessment	GN1150 Terrestrial Animal Species Specialist Assessment
Plant Species	Low	Low	Specialist assessment	GN1150 Terrestrial Plant Species Specialist Assessment
Terrestrial Biodiversity	Low	Low	Specialist assessment	GN320 Terrestrial Biodiversity Specialist Assessment
Aquatic Biodiversity	Low	Low	Specialist assessment	GN320 Aquatic Biodiversity Specialist Assessment
Archaeology and Cultural Heritage	Low	Low	Specialist assessment	No protocol (Appendix 6 of GN982), General Assessment
Palaeontology	High	Low	Specialist assessment	No protocol (Appendix 6 of GN982), General Assessment
Civil Aviation	Low	Low	Undertaken by the EAP utilising desktop analysis, and other available and relevant information	GN320 Assessment and Minimum Criteria for Reporting on Identified Environmental Themes
Defence	Low	Low		

8 REFERENCES

Biodiversity Company, 2024a. Desktop Wetland Delineation and Impact Assessment for the Proposed Prospecting Right Application on the Farm Gappepin Reserve 670

Biodiversity Company, 2024b. Desktop Terrestrial Biodiversity Assessment for the Proposed Prospecting Right Application on the Farm Gappepin Reserve 670

Digital Soils Africa, 2024. Agricultural Compliance Statement for Prospecting Rights at Farm Gappepin Reserve 670, Near Kathu

Government Gazette 43110 (GN320 of 2020) Protocol for the specialist assessment and minimum report content requirements for environmental impacts on defence installations.

Archaetnos, 2024. Heritage Compliant Statement: Prospecting Right Application for Monnapula Mining on the Farm Gappepin Reserve 670, Northern Cape Province

Professor Marion Bamford, 2024. Palaeontological Impact Assessment (phase 1) Palaeontological Impact Assessment for a Prospecting Right Application on Gappepin Reserve 670, between Olifantshoek and Kathu, Northern Cape Province.

South African Civil Aviation Technical Standards List of 2011 (Document SA-CATS 139 - Aerodromes and heliports).