Wetlands Baseline Study and Risk AssessmentWU47590: Seriti MMS General Authorisation for the Drilling of Exploration Boreholes for Resource Quantification on Portions 15 & the Remaining Extent of Portion 0 of the Farm Middeldrift 42 Is, Near Middelburg

Prepared for

Seriti Power (Pty) Ltd

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Client Name:	Seriti Power (Pty) Ltd		
EAP:	Niara Environmental Consultants (Pty) Ltd		

Document History

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1	Lindokuhle Hlongwane	Vumile Ribeiro	13 November 2025	

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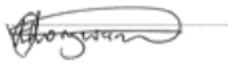
- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

Signature of the Specialist:	
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Name of Company:	Niara Environmental Consultants (Pty) Ltd
Experience (Years):	18 years
Date:	14 November 2025

Specialist Checklist

EIA REGULATIONS 2017 GNR 327, 325 and 324 Appendix 6 **CONTENT OF THE SPECIALIST REPORTS**	**In accordance with the EIA Regulations**	**Cross reference in this Report**
(a) details of— the specialist who prepared the report; and the expertise of that specialist to compile a specialist report including a curriculum vitae;	✓	Section 3
(b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	✓	Page iv
(c) an indication of the scope of, and the purpose for which, the report was prepared	✓	Section 2
(cA) an indication of the quality and age of Base Data used for the specialist report	✓	Section 1.2, 1.3, and 1.4
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and the levels of acceptable change	✓	Section 6.3
(d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	✓	Section 8.1 **Error! Reference source not found.**
(e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	✓	Section 6
(f) Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.	✓	Section 8
(g) an identification of any areas to be avoided, including buffers;	✓	N/A
(h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	✓	Figure 8-1 and **Error! Reference source not found.**
(i) a description of any assumptions made and any uncertainties or gaps in knowledge;	✓	Section 5
(j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities	✓	Section 8
(k) any mitigation measures for inclusion in the EMPr	✓	Section **Error! Reference source not found.**
(l) any conditions for inclusion in the environmental authorisation;	✓	NA
(m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;	✓	NA
(n) a reasoned opinion— i. whether the proposed activity, activities or portions thereof should be authorised; and (iA) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	✓	NA

EIA REGULATIONS 2017 GNR 327, 325 and 324 Appendix 6 **CONTENT OF THE SPECIALIST REPORTS**	**In accordance with the EIA Regulations**	**Cross reference in this Report**
(o) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	✓	N/A
(p) any other information requested by the competent authority	✓	N/A

Executive Summary

Introduction

Seriti Power (Pty) Ltd is the holder of an amended Mining Right for coal mining in respect of its Wolvekrans – Ifalethu Colliery operations, issued by the Department of Mineral Resources and Energy (DMRE) under REF No. MP30/5/1/2/2/379MR. Seriti Power (Pty) Ltd (Seiti) holds an Environmental Management Programme Report ("EMPr"), converted in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) ("MPRDA"). The mining operations include Middelburg Mines North Section (previous Ifalethu Colliery) and Middelburg Mines South Section (previous Wolvekrans Colliery), which consist of various sections within the mining area.

Seriti has appointed Niara Environmental Consultants (Pty) Ltd ("Niara") to compile a General Authorization (GA) for the drilling of exploration boreholes. The drilling of these exploration boreholes is required to increase confidence and to assess the quantity, quality, and distribution of mineral resources and to understand the geological characteristics, stratigraphy, and structure of the subsurface. A total of 22 exploration boreholes are proposed within a 500m of several wetlands.

This assessment has been completed in accordance with the requirements of the published General Notice (GN) 509 by the Department of Water and Sanitation (DWS), and Appendix 6 of the EIA Regulations, 2014 (Government Notice (GN) R 982 of 2014, as amended). GN509 was published in the Government Gazette (no. 40229) under Section 39 of the National Water Act (Act no. 36 of 1998) in August 2016 and provides for the authorisation of Section 21(c) & (i) water uses in terms of a General Authorisation (GA) as opposed to a full water use license. A water use (or potential) qualifies for a GA under GN 509 when the proposed water use/activity is subjected to analysis using the DWS Risk Assessment Matrix (RAM), and the risk class is determined to be LOW. This assessment will implement the RAM and provide a specialist opinion on the appropriate water use authorisation going forward.

Methodology

As part of the study, the wetland areas were identified and delineated according to the hydro-geomorphic (HGM) Classification system. An ecological health assessment was also conducted for the wetland areas to describe the current state and ecological relevance of each wetland unit using Wet-Health of the Wetland Management Series. The health of a wetland can be determined as a measure of the deviation of wetland structure and function from that wetland's natural reference condition.

Furthermore, an impact assessment as per the methodology included in GN509 of 2016 was conducted to assess the impacts that exploration borehole drilling will have on identified wetland areas within the Mining Rights Area. Use was made of 1:50 000 topographical maps, 1:10 000 orthophotos and Google Earth Imagery to create digital base maps of the study area onto which the wetland boundaries could be delineated using ArcMap 10.2. A desktop delineation of suspected wetland areas was undertaken by identifying rivers and wetness signatures on the digital base maps. All identified areas suspected to be wetlands were then further investigated during a site visit undertaken on the 10th of November 2025.

Activities

Use was made of 1:50 000 topographical maps, 1:10 000 orthophotos and Google Earth Imagery to create digital base maps of the resource quantification areas onto which the wetland boundaries could be delineated using ArcMap 10.2. A desktop delineation of suspected wetland areas was undertaken by identifying rivers and wetness signatures on the digital base maps. All identified areas suspected to be wetlands were then further investigated during a site visit undertaken on the 10th of November 2025.

Key Findings

The following findings were made:

- The proposed Albion North Resource Quantification Project Area is situated approximately 10km from Albion along the R544 and R547 within quaternary catchment B11E.
- Seriti appointed Niara as an Independent Environmental Assessment Practitioner (EAP) to ensure compliance by undertaking the required environmental regulatory process;
- The proposed Albion North Resource Quantification Project Area falls within the Eastern Highveld Grassland (Gm12) vegetation type as described by Mucina & Rutherford, 2012,

Findings of the wetland delineation and typing process indicates that a total of four (4) HGM units were identified within both project areas as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone
- HGM Unit 2: Hillslope Seepage Wetland
- HGM Unit 3: Channelled Valley Bottom Wetland
- HGM Unit 4: Hillslope Seepage Wetland

The Present Ecological Status of the identified HGM Units is as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone. The Steenkoolspruit Riparian Zone located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.
- HGM Unit 2 and HGM Unit 4: Hillslope Seepage Wetlands. The hillslope seepage wetlands located within the Albion North Resource Quantification Project Area were found to have significantly deviated from the reference condition such that the classification ranged from Largely Modified (PES-D) (where a large change in ecosystem processes and loss of natural habitat and biota has occurred) to Seriously Modified (PES-E) (where the change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable).
- HGM Unit 4: Channelled Valley Bottom Wetland. The channelled valley bottom wetland located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been

classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.

The Ecological Importance and Sensitivity (EISC) of the four delineated HGM Units within the Albion North Resource Quantification Project Area were found to be **Moderate:** Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.

Impact Assessment Studies found that, a total of 22 resource quantification boreholes are proposed in order to adequately complete the proposed resource quantification.

A total of 3 (**MD82057, MD82051 and MD82044**) resource quantification boreholes fall within the delineated HGM Unit 4. None of the other delineated HGM units are directly impacted by the proposed Albion North Resource Quantification Project.

Only 3 resource quantification boreholes (**MD82045, MD82046 and MD82047)** are located less than 50m away from the delineated HGM Unit 3: Channelled valley Bottom Wetland. Only one resource quantification borehole (**MD82053**) is located less than 50m away from HGM Unit 4: Hillslope Seepage Wetland.

As such a total of resource quantification boreholes are located outside of the delineated wetland areas and more than 50m away from the edge of the delineated HGM units within the Albion North Resource Quantification Project Area.

Recommendations

The following recommendations were made:

- All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a “clean” working area, and report any (potential) risks to the environment as a result of the drilling programme;
- All drilling activities should be undertaken in the dry season (between May and September) to minimise the risk of erosion and uncontrolled run off;
- Drill positions must be decommissioned and rehabilitated on completion of drilling each hole and not left to be rehabilitated on completion of the drilling programme;
- Exploration boreholes must be properly sealed to prevent cross contamination between the shallow and the deeper aquifers;
- Use biodegradable and environmentally friendly drilling fluids;
- All fuel and reagent stored on site should be stored and prepared on bunded surfaces to contain spills and leaks;
- All hazardous waste must be stored in designated waste storage facilities and removed from site immediately after drilling works have been completed.

- Sufficient spill clean-up material must be kept on site at all times to deal with minor spills. All spills should be reported to the Environmental Officer and the relevant authorities (DWS) immediately, with specialists appointed to oversee the clean-up operations;
- An environmental audit must be conducted at least six months following the completion of drilling works.

Specialist Opinion

From a wetland perspective the proposed drilling of 22 resource quantification boreholes will result in negligible overall impact on the integrity and functionality of the identified wetland areas as such the project can be approved. No fatal flaws are expected for this project.

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Glossary

Channel - An open conduit with clearly defined margins that (i) continuously or periodically contains flowing water, or (ii) forms a connecting link between two water bodies.

Channelled Valley Bottom Wetland - A mostly flat valley-bottom wetland dissected by and typically elevated above a channel (see channel). Dominant water inputs to these areas are typically from the channel, either as surface flow resulting from overtopping of the channel bank/s or as interflow, or from adjacent valley-side slopes (as overland flow or interflow). Water generally moves through the wetland as diffuse surface flow, although occasional, short-lived concentrated flows are possible during flooding events (SANBI, 2009).

Corrective - (or remedial) action: Response required to address an environmental problem that is in conflict with the requirements of the Environmental Management Plan (EMP). The need for corrective action may be determined through monitoring, audits or management review.

Culvert- An artificial, covered channel for water to allow it to pass underneath a road or railway line (Russel 2009).

Discharge- The quantity of water flowing in a stream per unit time, typically in units of cubic meters per second (Russel 2009).

Erosion - The weathering, transportation and deposition of the earth's surface by wind, water and other natural forces.

Flat - A near-level wetland area (i.e. with little or no relief) with little or no gradient, situated on a plain or a bench in terms of landscape setting. The primary source of water is precipitation, with the exception of flats along the coast (usually in a plain setting) where the water table (i.e. groundwater) may rise to the surface or near to the surface in areas of little or no relief because of the location near to the base level of the land surface represented by the presence of the ocean (SANBI, 2009).

Floodplain Wetland - The mostly flat or gently sloping wetland area adjacent to and formed by a lowland or upland floodplain river, and subject to periodic inundation by overtopping of the channel bank (SANBI, 2009).

Gabion- A structure made of wire mesh baskets filled with regularly sized stones, and used to prevent and/ or repair erosion. They are flexible and permeable structures which allow water to filter through them. Vegetation and other biota can also establish in/around the habitat they create (Russel 2009).

Hillslope Seep - A wetland area located on (gently to steeply) sloping land, which is dominated by the colluvial (i.e. gravity-driven), unidirectional movement of material down-slope. Water inputs are primarily from groundwater or precipitation that that enters the wetland from an up-slope direction in the form of subsurface flow. Water movement through the wetland is mainly in the form of interflow, with diffuse overland flow ('sheetwash') often being significant during and after rainfall events (SANBI, 2009).

Intervention- An engineered structure such as a concrete or gabion weir, earthworks or re-vegetation that that achieves identified objectives within a wetland (Russel 2009).

Maintenance- The replacement, repair or the reconstruction of an existing structure within the same footprint, in the same location, having the same capacity and performing the same function as the previous structure (Russel 2009).

Mitigation- Actions to reduce the impact of a particular activity (Russel 2009).

Rehabilitation- The re-instating of driving ecological forces (including hydrological, geomorphological and biological processes) that underlie a wetland, so as to improve the wetland's health and the ecological services that it delivers (Russel 2009).

Reno Mattress- A thin section wire basket filled with rock that is used to protect soil from erosion caused by the velocity of flowing water. The thickness usually varies from 150 mm to 300 mm. The thickness used is dependent on the velocity of the water and the erodibility of the soil (Russel 2009).

Sediment- Solid material transported by moving water, which typically comprises sand, silt and clay sized particles (Russel 2009).

Silt barrier- a temporary sediment barrier used across a landscape to reduce the quantity of sediment that is moving farther downslope. Commonly used barriers include silt fence (a geotextile fabric that is trenched into the ground and attached to supporting posts) or hay bales trenched into the ground. Other barrier materials include sand bags, brush piles, and various man-made materials and devices that can be used in a similar manner as silt fence and hay bales.

Stone Pitching- The act of paving using small or large stones.

Unchannelled Valley Bottom Wetland - A mostly flat valley-bottom wetland area without a major channel running through it, characterised by an absence of distinct channel banks and the prevalence of diffuse flows, even during and after high rainfall events. Water inputs are typically from an upstream channel, as the flow becomes dispersed, and from adjacent slopes (if present) or groundwater. Water generally moves through the wetland in the form of diffuse surface flow and/or interflow (with some temporary containment of water in depressional areas), but the outflow can be in the form of diffuse or concentrated surface flow (SANBI, 2009).

Valleyhead Seep - A gently-sloping, typically concave wetland area located on a valley floor at the head of a drainage line, with water inputs mainly from subsurface flow (although there is usually also a convergence of diffuse overland water flow in these areas during and after rainfall events). Horizontal, unidirectional (down-slope) movement of water in the form of interflow and diffuse surface flow dominates within a valleyhead seep, while water exits at the downstream end as concentrated surface flow where the valleyhead seep becomes a channel (SANBI, 2009).

Water system - Water system includes any dam, any other form of impoundment, canal works, pipeline and any other structure or facility constructed for the retention or conveyance of water

Weir- A structure placed in a stream or gully in order to lift the water level and or to catch up sediment. It is usually of concrete, stone masonry or rock-filled gabions. Weirs are fixed barriers across a river or stream that force water to flow over their tops, where the height of the water above the weir can be used to calculate flow. (Russel 2009).

Wetland - Any ecosystem that has an aquatic base or hydrological driving force and possesses both upland and aquatic characteristics. National Water Act (1998): A wetland is land which is transitional between terrestrial and aquatic systems where the water table is at or near the surface, or the land is periodically covered with shallow water, and which in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

List of Abbreviations and Acronyms

CITES	Convention on International Trade in Endangered Species
DWAF	Department of Water Affairs and Forestry
DWS	Department of Water and Sanitation
DMRE	Department of Mineral Resources and Energy
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
EIS	Ecological Importance and Sensitivity
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMP	Environmental management Plan
EMPr	Environmental management Program
ES	Ecological Sensitivity
HGM	Hydromorphic Classification
GPS	Global positioning System
IUCN	International Union for Conservation of Nature
LoM	Life of Mine
MR	Mining Rights
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act
PES	Present Ecological Status
SANBI	South African National Biodiversity Institute
WUL	Water Use License

1 Introduction

Seriti Power (Pty) Ltd is the holder of an amended Mining Right for coal mining in respect of its Wolvekrans – Ifalethu Colliery operations, issued by the Department of Mineral Resources and Energy (DMRE) under REF No. MP30/5/1/2/2/379MR. Seriti Power (Pty) Ltd (Seiti) holds an Environmental Management Programme Report ("EMPr"), converted in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) ("MPRDA"). The mining operations include Middelburg Mines North Section (previous Ifalethu Colliery) and Middelburg Mines South Section (previous Wolvekrans Colliery), which consist of various sections within the mining area.

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Middelburg Mine Services (MMS) operations, owned and operated by Seriti, aims to drill exploration boreholes in order to quantify the mineral resource potential in an area where mining rights have been approved but the resource remains unquantified. The mineral resource potential will be quantified through the systematic drilling of boreholes and subsequent analysis of core samples, the project seeks to provide valuable data for accurate resource estimation, supporting informed decision-making regarding potential mining operations.

The overall objectives of the proposed MMS Project include:

- **Resource Assessment**: Determine the quantity, quality, and distribution of mineral resources within the designated area.
- **Geological Understanding**: Gain insights into the geological characteristics, stratigraphy, and structure of the subsurface to understand the resource formation and distribution.
- **Risk Mitigation**: Identify potential geological hazards, such as unstable formations or igneous intrusions, to mitigate risks associated with future mining operations.
- **Regulatory Compliance**: Ensure compliance with local, national, and international regulations governing mineral exploration and environmental protection.

This assessment has been completed in accordance with the requirements of the published General Notice (GN) 509 by the Department of Water and Sanitation (DWS), and Appendix 6 of the EIA Regulations, 2014 (Government Notice (GN) R 982 of 2014, as amended). GN509 was published in the Government Gazette (no. 40229) under Section 39 of the National Water Act (Act no. 36 of 1998) in August 2016 and provides for the authorisation of Section 21(c) & (i) water uses in terms of a General Authorisation (GA) as opposed to a full water use license. A water use (or potential) qualifies for a GA under GN 509 when the proposed water use/activity is subjected to analysis using the DWS Risk Assessment Matrix (RAM), and the risk class is determined to be LOW. This assessment will implement the RAM and provide a specialist opinion on the appropriate water use authorisation going forward.

1.1 Project Locality

The proposed Albion North Exploration Drilling Project is situated on portions 15 and the Remaining Extent (RE) of Portion 0 the farm Middeldrift 42 IS, within Ward 32 of the eMalahleni Local Municipality (LM), under the jurisdiction of the Nkangala District Municipality, in the Mpumalanga Province of South Africa. The project area forms part of Seriti's operational footprint associated with the Middelburg Mine Services (MMS) and is locally referred to as the Albion Section. This section lies within the broader Albion North Extension area. The project area lies within the Upper Olifants Water Management Area (WMA), specifically the B11G Quaternary Catchment. The nearest significant drainage feature is an unnamed tributary of the Olifants River, forming part of the B11G-01225 Sub-Quaternary Reach (SQR). These watercourses are non-perennial and are characterised by low baseflow and high seasonal variability. The site does not fall within a National Freshwater Ecosystem Priority Area (NFEPA).

The project area is positioned approximately 10 km northwest of eMalahleni (Witbank) and is accessible via the R547 regional road, which traverses the central portion of the project footprint in an east–west orientation. The Albion Section lies in a region characterised by extensive coal mining operations, agricultural fields, and associated mining infrastructure, including access roads, haul routes, and conveyor corridors.

The area experiences a summer rainfall pattern, with the Mean Annual Precipitation (MAP) estimated at approximately 680 mm/year. The highest monthly rainfall typically occurs between December and February, with long-term data indicating peaks up to 345 mm/month. The Mean Annual Runoff (MAR) from the B11G catchment is approximately 20 mm/year. Temperatures range from 0°C in winter to above 30°C in summer, with occasional frost events recorded during June and July.

The site does not fall within a National Freshwater Priority Area. The Olifants river drains west of the site and continues north through Witbank Dam, towards Loskop dam. It is forced east by the Transvaal Drakensberg, cutting through at the Abel Erasmus Pass and then flowing east further across the Lowveld to join the Letaba River.

Table 1-1: Albion Resource Quantification locality

Closest town	eMalahleni
District Municipality	Nkangala District Municipality
Local Municipality	eMalahleni Local Municipalities
Catchment Zone	B11E
Water Management Area	Upper Olifants WMA2

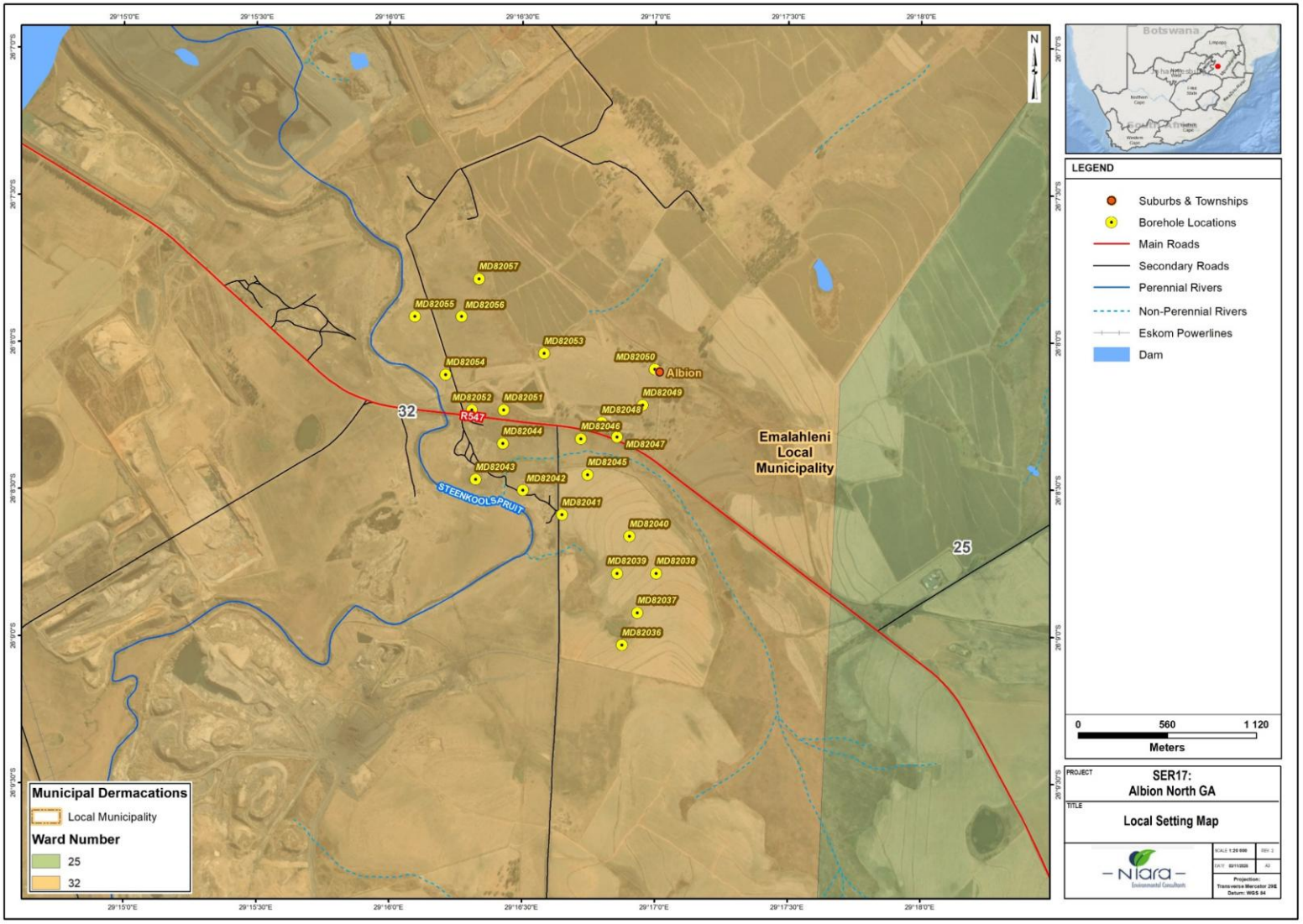

Figure 1-1: Albion North Resource Quantification Area Locality Map

1.2 Regional Geology

The Albion North Resource Quantification Project Area is located within the Witbank Coalfield, one of South Africa's most extensively studied coal-bearing regions within the Middle Ecca stage of the greater Karoo Coal Province. The Witbank Coalfield has supported numerous historical and current mining operations, ranging from small-scale to large commercial collieries. As a result, the geological framework, sedimentary processes, and mineralogical characteristics of the coal seams in this region are exceptionally well understood. South Africa's coal deposits are predominantly hosted within the sedimentary succession of the Karoo Basin. In the project area, the Karoo Supergroup is represented chiefly by the Ecca Group, specifically the Vryheid Formation, which contains the economically significant coal seams. The lowermost component of the Karoo sequence is the Dwyka Group, comprising glaciogenic tillites deposited relatively uniformly across the basin, except where ancient palaeo-topographical highs restricted deposition.

The coal-bearing Vryheid Formation overlies the Dwyka Group, marking a significant shift in depositional environments following the retreat of glacial activity. The Vryheid Formation consists of a series of stacked, upward-coarsening sedimentary cycles composed of interbedded sandstone, siltstone, and shale. Coal seams occur within these alternating lithofacies, reflecting repeated transitions between clastic sedimentation and peat accumulation in ancient wetland and deltaic environments.

These Ecca Group sediments rest either conformably on the Dwyka diamictites and associated glacial deposits or, in areas where the Dwyka is absent, unconformably on pre-Karoo basement rocks. As illustrated in Figure 1-2, the regional west–east geological profile indicates a predominantly flat to gently undulating topography across the project area, with no major structural disruptions expected to significantly influence the continuity of the coal seams.

1.3 Regional Vegetation

The Albion North Resource Quantification Project Area is situated within the Eastern Highveld Grassland (Gm12) vegetation type, as classified by Mucina & Rutherford (2012). This vegetation unit forms part of the Grassland Biome, one of South Africa's nine biomes and recognised as the country's second most biodiverse biome. The Grassland Biome occupies large portions of the central interior plateau, extending into the inland regions of KwaZulu-Natal and the Eastern Cape. Despite its ecological richness, the biome is regarded as highly threatened due to increasing pressure from commercial agriculture, mining expansion, industrial development, and associated land-use transformation. The Eastern Highveld Grassland in particular is characterised by gently to moderately undulating plains interspersed with low hills, drainage depressions, and scattered pans.

This vegetation type is listed as "Endangered" in terms of the National List of Threatened Terrestrial Ecosystems, with approximately 55% of its original extent transformed. Conservation efforts remain insufficient, with only 13% of the national protection target currently secured within formal protected areas (Lötter, 2015). Ongoing cultivation and land modification are the primary drivers of its degraded status.

Vegetation structure in the area comprises short, dense grassland dominated by typical Highveld grass species, including Aristida, Digitaria, Eragrostis, Themeda, and Tristachya species (Mucina & Rutherford, 2012). The map presented in Figure 1-3 illustrates the distribution of this vegetation type within the project area and its surrounding landscape.

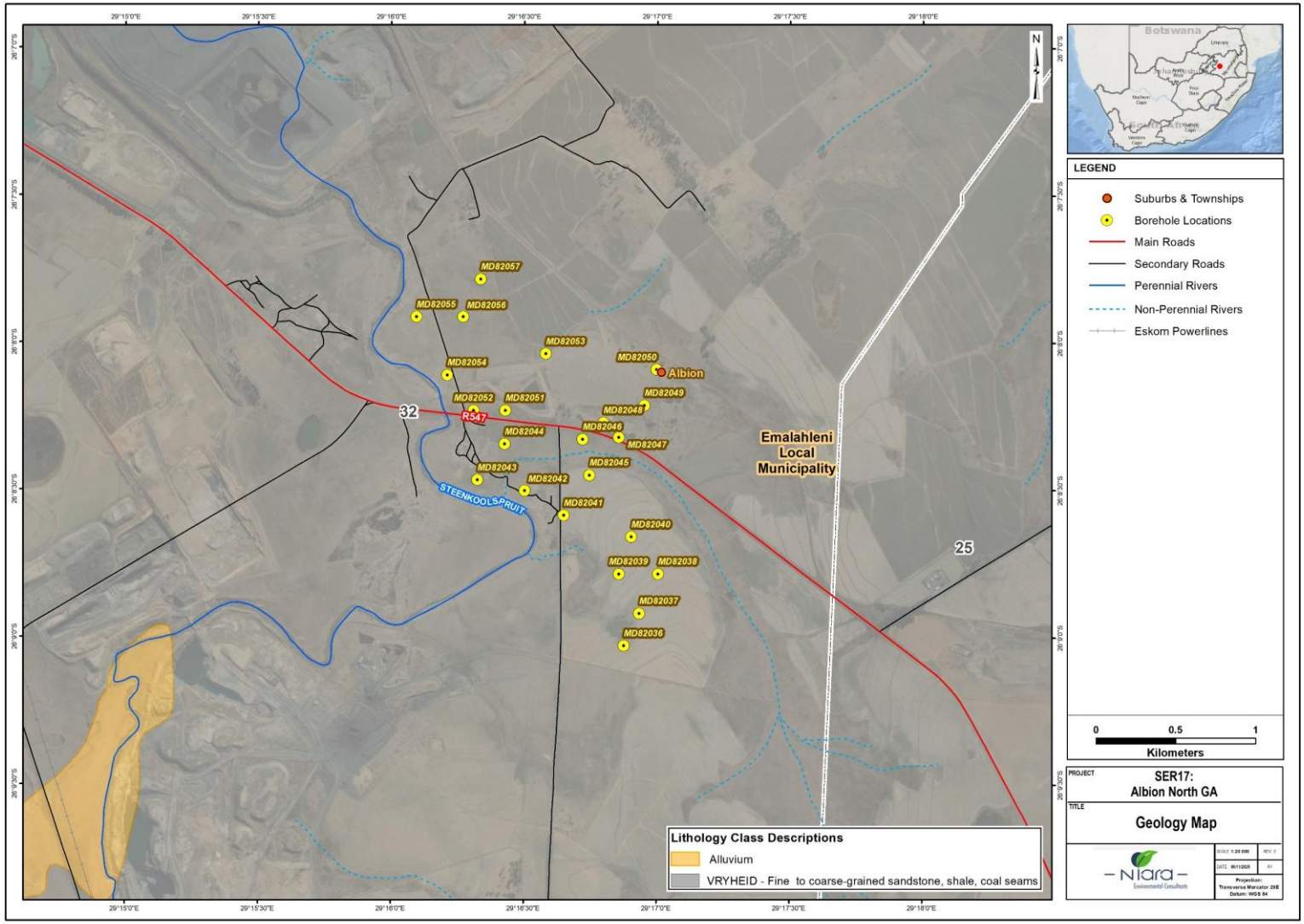

Figure 1-2: Regional Geology

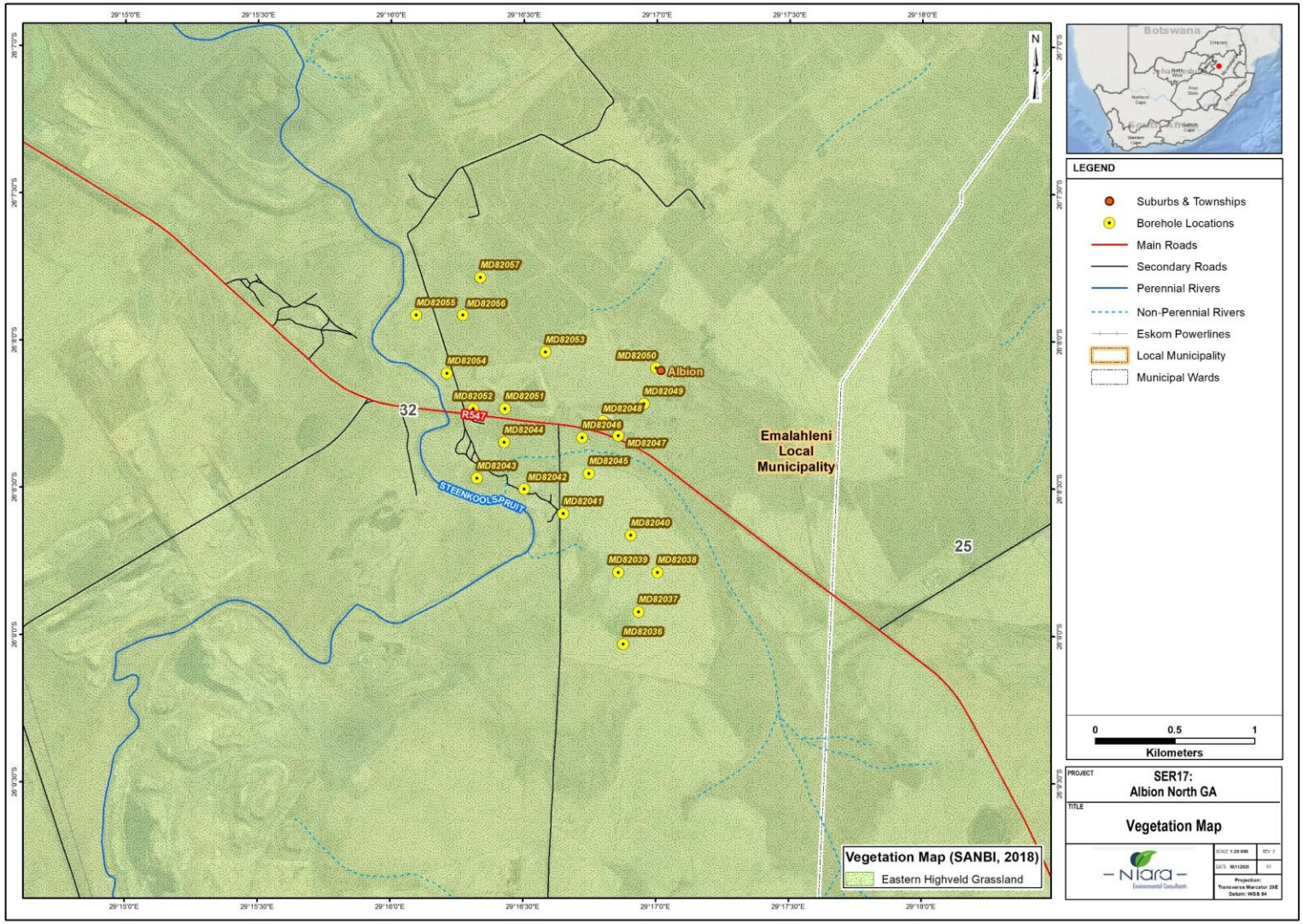

Figure 1-3: Regional Vegetation

1.4 Quaternary Catchments

The Albion North Resource Quantification Project Area falls within the Olifants Water Management Area (WMA2) within the B11E quaternary catchment. The project area falls within the WMA 2 which comprises the Olifants River Catchment which is one of the major contributors of flow into the Limpopo River Basin, an international river that is shared between South Africa, Mozambique, Zimbabwe and Botswana.

The Olifants WMA is mainly occupied by the South African portion of the Olifants River catchment, excluding the Letaba River catchment. The Olifants River originates to the east of Johannesburg, initially flowing northwards before turning eastwards towards the Kruger National Park, where it is met at the confluence with the Letaba River before flowing into Mozambique. It encounters diverse economic activity includes mining, metallurgic industries, irrigation, dryland and subsistence agriculture as well as ecotourism. The provision of water to meet ecological requirements in the Olifants River is one of the controlling factors in the management of water resources throughout the WMA. The Olifants WMA receives substantial amounts of water from transfers as one of its primary concerns is the cooling of power generation stations on the highveld, while smaller transfers are made to neighbouring WMAs (StatsSA, 2010).

The Albion North Resource Quantification Project Area contributes directly into the Steenkoolspruit River. Figure 1-4 and Table 1-2 below indicates some characteristics of the quaternary catchments.

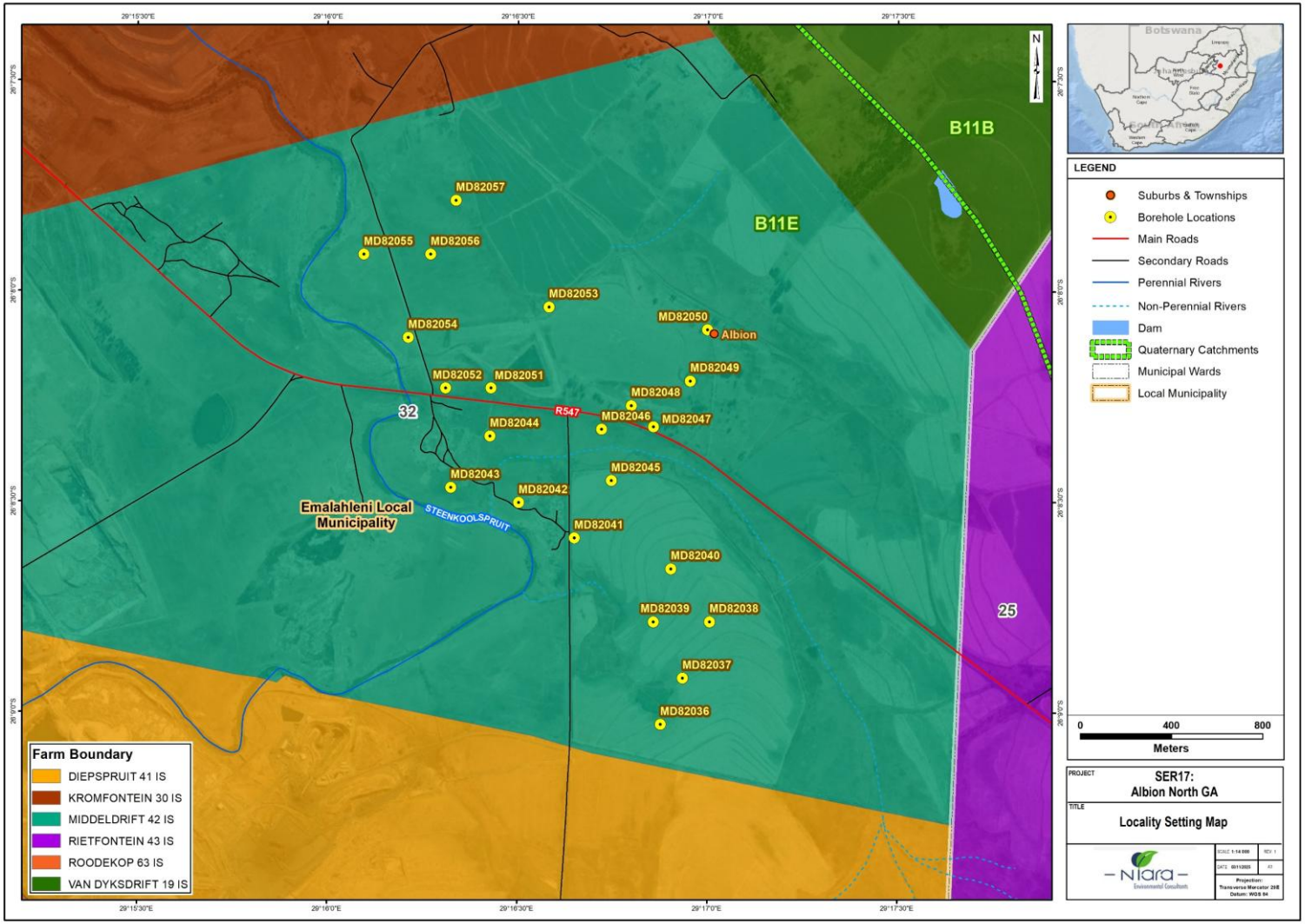

Figure 1-4: Map indicating the Albion North Resource Quantification Project Area in relation to quaternary catchment B11E

Table 1-2: Quaternary catchment characteristics

Quaternary Catchment	Quaternary Catchment Area (km2)	PES	REC	Mean Annual Precipitation (mm)	Mean Annual Evaporation (mm)	Mean Annual Run-off (mm)
B11E	417	D	D	682	1950	47.6

1.5 National Freshwater Ecosystem Priority Areas (NFEPA)

The National Freshwater Ecosystem Priority Areas (NFEPA) project represents a multi-partner project between the Council for Scientific and Industrial Research (CSIR), South African National Biodiversity Institute (SANBI), Water Research Commission (WRC), Department of Water Affairs (DWA; now Department of Water and Sanitation, or DWS), Department of Environmental Affairs (DEA), Worldwide Fund for Nature (WWF), South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks) which was initiated with an aim to identify and set implementation measures to protect freshwater ecosystems. The NFEPA project includes wetlands, rivers, lakes and estuaries. More specifically, the NFEPA project aims to:

- Identify Freshwater Ecosystem Priority Areas (hereafter referred to as 'FEPAs') to meet national biodiversity goals for freshwater ecosystems; and
- Develop a basis for enabling effective implementation of measures to protect FEPAs, including free-flowing rivers.

The NFEPA project allowed for identifying various important freshwater ecosystems within South Africa. Theses ecosystems are categorised as Freshwater Ecosystem Priority Area (FEPA).

As per Figure 1-5 , the Albion North Resource Quantification Project Area is located in close proximity to FEPA floodplain systems associated with the Steenkoolspruit. Floodplain systems are well known for performing critical hydrological functionality in the landscape. These functions include:

- Water quality Improvement: Floodplains and wetlands filter pollutants and sediment from stormwater runoff. They also help maintain or improve surface water quality by reducing downstream loading;
- Floodplains provide habitats for many species, including fish, water birds, and other wildlife;
- Nutrient transport: Floodplains transport nutrients, which can contribute to fertile soil for agriculture;
- Flood attenuation: Floodplains have a high storage capacity for flood waters and reduce flood damage for downstream lands.
- Floodplains sustains baseflow in rivers during dry periods.

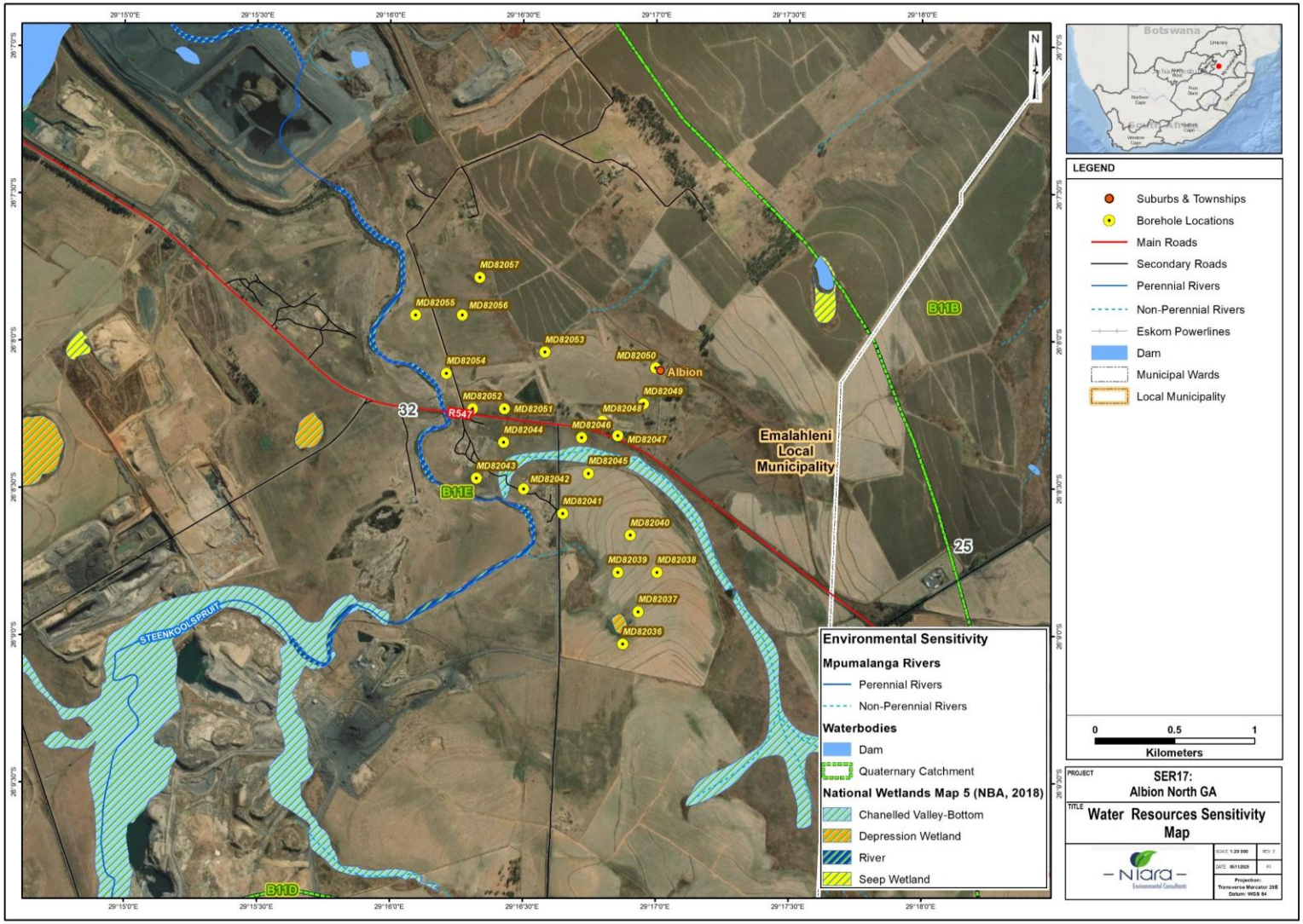

Figure 1-5: NFEPA Rivers and Wetlands within the resource quantification areas

2 Scope of Work

The following tasks formed part of the agreed scope of work:

- Review available data for the application area (Conservation plans, NFEPA, past studies);
- Undertake a desktop delineation of all wetlands and watercourses within the proposed resource quantification areas;
- Undertake site visits and extensive verification of all wetlands within the study area footprint and surrounding 100 metre buffer to verify the extent of wetland habitat, and undertake limited verification of wetlands within the proposed infrastructure amendment areas. This will involve ground truthing of wetland areas to confirm the wetland boundaries as per the DWAF Wetland Delineation Guidelines (DWAF, 2005);
- Typing of the wetlands within the proposed resource quantification areas area according to their hydro-geomorphic setting using a classification system based on the system proposed by Brinson (1993), and most recently modified for use in South African conditions by Ollis et al. (2013);
- Determine the Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) of all verified wetlands using WET-Health level 1 and the DWS scoring system (Rountree et al., 2013) respectively;
- Identification, description and rating of potential impacts that may arise from the proposed exploration drilling using the GN509 Water Use Risk Assessment methodology;
- Provide appropriate mitigation and management measures to address the identified potential impacts; and
- Compilation of a wetland baseline and impact assessment report.

3 Details and Expertise of Specialist

Founded by Vumile Ribeiro in 2012, Niara Environmental Consultants (Pty) Ltd is a 100% black female owned organisation. Our focus is environmental management services, integrated water resources management, biophysical studies as well as social issues and processes. Our key management personnel have accumulated vast experience in environmental management, integrated water resources management, mine closure and rehabilitation, and related fields. We assist our clients and communities they operate within in recognising that a healthy natural resource base is essential for economic self-sufficiency and that it provides opportunities for future livelihood options. Integral to this approach, is the need to educate our clients about the impact of their activities on their environment.

Our core services at Niara Environmental include: environmental legal services (including EIA's and environmental management programmes (EMPR's); regulatory authorisations such as prospecting right applications; integrated water use licence applications; and mining right applications); biophysical studies (including fauna and flora assessments; aquatic assessments; ecological wetland assessments; and hydropedological assessments); water geosciences (including hydrological and hydrogeological assessments; water and salt balances; geohydrological assessments; and numerical modelling); social services (including socio-economic impact

assessments; social and labour plans; social surveys; community health impact assessments; public participation processes; and grievance mechanisms); noise and air quality services (including monitoring); geographical information systems (GIS) (including visual impact assessments ; site selection; and sensitivity analyses); rehabilitation, closure and soils (including rehabilitation plans; closure and liability assessments; soil surveys; and land capability and land use assessments).

Vumile Ribeiro: Vumile Ribeiro has 18 years of professional and international experience in Environmental Assessment and Management primarily in the minerals resources and energy sector. She has extensive experience in compiling Environmental Impact Assessments and Water Use Licence Applications for mining, electricity supply (generation, transmission and distribution), road infrastructure, as well as water management projects. Her roles include the operational management responsibilities of Niara Environmental Consultants, project management, report writing, client liaison, as well as business development.

Her role within previous organisations and WUL applications consultant has provided her with a good working knowledge of the environmental authorisation process. Her duties include managing company finances; reporting on DWS assessment and financial status of projects; correspondence with clients, specialists and DWS; attending project meetings; compiling WULA submission documents, training staff; and aiding on general water-related queries. Whilst working at her previous employ, Vumile has administrated several large water use license applications for many of the biggest mining houses in South Africa.

These include Harmony Gold Mining Company Limited's Doornkop WULA, several Seriti Klipspruit and Middelburg Mine Services WULAs, BHP Billiton Energy Coal South Africa Limited's Integrated Water Use License Application and Integrated Waste Water Management Plan for the proposed Klipspruit Extension: Weltevreden, and the Scoping EIA, Water Use License Application, Waste Management License Application for the Sasol Sigma Colliery Underground Ash Backfilling Project for Sasol Mining (Pty) Ltd. An additional requirement of the WULA is the compilation of an integrated water and waste management plan. This has equipped Vumile with broad experience in the compilation and application process of a water use license.

Vumile holds a Bachelor of Social Sciences (Honours) degree in Environmental Analysis and Management from the University of Pretoria and is currently completing her Master's Laws Degree in Environmental Law. Vumile has 17 years of professional experience in Environmental Assessment and Planning and Management. Vumile is well versed in Environmental Impact Assessments, Environmental Auditing, Water Use License Applications, GIS and Remote sensing, as well as Environmental Law practices.

Lindokuhle Hlongwane: is a Principal Consultant at Niara Environmental Consultants (Pty) Ltd. Lindokuhle has more than 18 years professional experience in Environmental Assessments and Management of Contaminated Land both locally and internationally. Lindokuhle is a Professional Natural Scientist registered with the South African Council for Natural Scientific Professions (SACNASP). Lindokuhle is also a member and a steering committee fellow of the Network for Industrially Contaminated Land in Africa (NICOLA). Lindokuhle's experience in the management of contaminated land ranges from baseline contamination assessments, delineation of contamination plumes, development of Conceptual Site Models, setting of Remedial Objectives (RO), developing End State Visions, conducting Remedial Alternatives Analysis (RAA) and managing the installation of Remediation Systems (such as Multi-Phase Extraction, Soil Vapour Extraction, Sub-slab Depressurizations Systems, etc.).

As much as Lindokuhle is experienced in the development and installation of Remediation Systems, he is also very experienced in the assessments of remediation system end of life by mainly assessing achievement of the remedial objectives and driving remediation projects to closure. Lindokuhle is trained and experienced in managing complex projects and difficult stakeholders. Lindokuhle also has extensive experience in working with landowners and conveyancers providing valuable input in sale of land agreements. He is a self-driven, trained project manager that focuses on budget, schedule, safety and quality of the end-product. Lindokuhle believes that incident free operations are possible when different stakeholders work as One Team towards a single goal which is project completion with zero incidents. He is a Steering Committee member of the Network for Industrially Contaminated Land in Africa.

4 Key Legislation

The legislation, policies and guidelines listed below are applicable to the current project in terms of biodiversity and ecological support systems.

4.1 International Legislation and Policy

- The Ramsar Convention (on wetlands of international importance);
- The IUCN (World Conservation Union). The IUCN's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable;
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival; and
- Convention on Biological Diversity (Rio de Janeiro, 1992);

4.2 South African Legislation

- Constitution of the Republic of South Africa (Act 108 of 1996). The Bill of Rights, in the Constitution of South Africa states that everyone has a right to a nonthreatening environment and requires that reasonable measures be applied to protect the environment. This protection encompasses preventing pollution and promoting conservation and environmentally sustainable development;
- The National Environmental Management Act (NEMA) No. 107 of 1198): Ecological Assessment Regulations, 2014. Specifically, the requirements of the specialist report as per the requirements of Appendix 6;
- The National Environmental Management: Biodiversity Act (NEM:BA) No. 10 of 2004: specifically, the management and conservation of biological diversity within the RSA and of the components of such biological diversity;
- National Environmental Management: Biodiversity Act, 2004: Threatened and Protected Species Regulations;

- National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003);
- National Water Act, 1998 (Act 36 of 1998);
- Environmental Conservation Act, 1989 (ECA), (Act no. 73 of 1989);
- National Forests Act, 1998 (Act 84 of 1998), specifically with reference to Protected Tree species;
- National Heritage Resources Act, 1999 (Act 25 of 1999);
- Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).

5 Limitations of the Assessment

The following limitations were identified;

- The findings of this assessment are based on the information collected during the site visit that was conducted on the 14th of November 2025. Any changes within the project area that may affect the integrity and functionality of the delineated wetland/riparian zones post the site investigations have not been identified and therefore the results of such impacts on the wetlands/riparian zones have not been taken into consideration as part of this assessment;
- The flowering times for wetland plant species are variable and species that were not flowering during the time of field investigations may have been overlooked, and;
- The scale of the remote imagery used (1:10 000 aerial photographs and Google Earth Imagery), as well as the accuracy of the handheld GPS unit used to delineate wetlands in the field, result in the delineated wetland boundaries being accurate to approximately 10-20m on the ground. Should a greater mapping accuracy be required, the wetlands would need to be pegged in the field and surveyed using conventional survey techniques;
- The wetland assessment is confined to the proposed Albion North Resource Quantification Project Area, and does not include the neighbouring and adjacent areas, these areas were however considered as part of the desktop assessment.

6 Baseline Wetland Assessment Methodology

6.1 Desktop Review of Existing Data

The National Water Act, Act 36 of 1998, defines wetlands as: "*Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil*."

The presence of wetlands in the landscape can be linked to surface water and perched groundwater tables. Wetland types are differentiated based on their hydro-geomorphic (HGM) characteristics; i.e. on the position of the wetland in the landscape, as well as the way in which water moves in, through and out of the wetland systems as indicated in Figure 6-1 and Table 6-1 below. A schematic diagram of how these wetland systems are positioned in the landscape is given in the Figure 6-1 below.

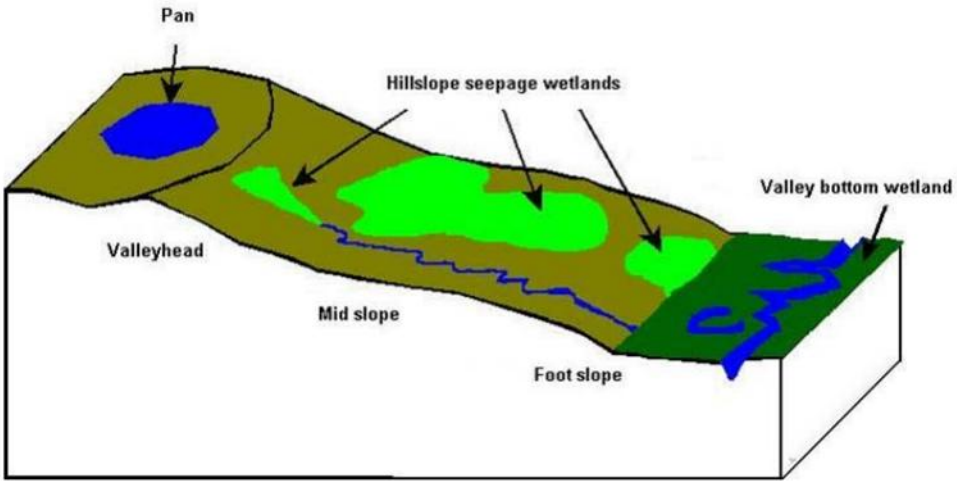

Figure 6-1: Diagram illustrating the position of the various wetland types within the landscape

Table 6-1: Wetland Hydrogeomorphic units (modified from Brinson 1993; Kotze 1999 and Marneweck and Batchelor 2002)

Wetland type	Position in the landscape	Description
Floodplain		Floodplains are similar to valley bottom areas with a well-defined stream channel, gently sloped and characterized by floodplain features such as oxbow depression and natural levees and the alluvial (by water) transport and deposition of sediment, usually leading to a net accumulation of sediment. Water inputs from main channel (when channel banks overspill) and from adjacent slopes.
Valley bottom with a channel		Valley bottom areas with a well-defined stream channel but lacking characteristic floodplain features. May be gently sloped and characterized by the net accumulation of alluvial deposits or may have steeper slopes and be characterized by the net loss of sediment. Water inputs from the main channel (when channel banks overspill) and from adjacent slopes.
Valley bottom without a channel		Valley bottom areas with no clearly defined stream channel, usually gently sloped and characterized by alluvial sediment deposition, generally leading to a net accumulation of sediment. Water inputs mainly from the channel entering the wetland and also from adjacent slopes

Wetland type	Position in the landscape	Description
Hillslope seepage linked to a stream channel.		Slopes on hillsides, which are characterized by colluvial (transported by gravity) movement of materials. Water inputs are mainly from subsurface flow and outflow is usually via a well-defined stream channel connecting the area directly to a stream channel
Isolated hillslope seepage		Slopes on hillsides that are characterized by colluvial transport (transported by gravity) movement of materials. Water inputs are from subsurface flow and outflow either very limited or through diffuse sub-surface flow but with no direct link to a surface water channel.
Pan/Depression		A basin-shaped area with a closed elevation contour that allows for the accumulation of surface water (ie. It is inward draining). It may also receive subsurface water. An outlet is usually absent and so this type of wetland is usually isolated from the stream network

Use was made of 1:50 000 topographical maps, 1:10 000 orthophotos and Google Earth Imagery to create digital base maps of the study area onto which the wetland/riparian zones boundaries could be delineated using ArcMap 10.2. A desktop delineation of suspected wetland/riparian zones was undertaken by identifying rivers and wetness indicators on the digital base maps. All identified areas suspected to be wetland/riparian zones were then further investigated in the field.

In addition, the National Wetland Inventory (SANBI) and the Atlas of Freshwater Ecosystem Priority Areas in South Africa (Nel et al., 2011) were consulted to determine the presence of wetland/river systems within the area. Existing wetland data around the study area was consulted and utilized where applicable including wetland/riparian zones data from national wetland inventory and NFEPA wetland data.

The following information sources were considered for the desktop assessment;

- Aerial imagery (Google Earth Pro);
- Department of Water and Sanitation (DWS, 2018);
- The National Freshwater Ecosystem Priority Areas (Nel et al., 2011); and

6.2 Wetland Identification, Delineation and Classification

Field work for the wetland/riparian zone delineation study was undertaken in November 2025. During the field work, wetlands were identified and delineated according to the delineation procedure as set out by the “A Practical Field Procedure for the Identification

and Delineation of Wetlands and Riparian Areas" document, as described by Department of Water Affairs and Forestry (DWAF) (2005) and Kotze and Marneweck (1999). A cross section of a typical wetland is presented in Figure 6-2 below. Using this procedure, wetlands were identified and delineated using the following indicators:

- Terrain Unit Indicator (Identifies those parts of the landscape where wetlands are more likely to occur);
- Soil Form Indicator (Identifies the soil forms, as defined by the Soil Classification Working Group (1991), which are associated with prolonged and frequent saturation;
- Soil Wetness Indicator (Identifies the morphological "signatures" developed in the soil profile as a result of prolonged and frequent saturation); and; and the
- Vegetation Indicator (Identifies hydrophilic vegetation associated with frequently saturated soils).

Vegetation is the primary indicator of a wetland, which must be present under normal circumstances. However, the soil wetness indicator tends to be the most important in the practice of wetland delineation. The remaining three indicators are used in a confirmatory role. The reason for this, is that the response of vegetation to changes in the soil moisture regime or management are relatively quick and may be transformed, whereas the morphological indicators in the soil are significantly more permanent and will hold the indications of frequent and prolonged saturation long after a wetland has been drained (perhaps several centuries) (DWAF, 2005).

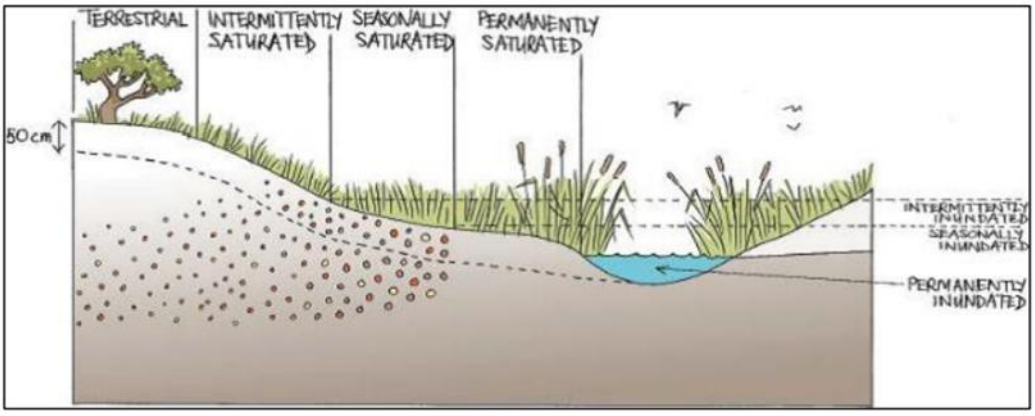

Figure 6-2: Cross section through a wetland, indicating how the soil wetness and vegetation indicators change (Ollis et al., 2013)

6.3 Riparian Zone Delineation and Assessment

Riparian area/zone delineation is similar to wetland delineation in that indicators are used to define the edge of the system. It considers indicators such as topography, vegetation, alluvial soils, and deposition of material to mark the outer edge of the macro-channel and its associated vegetation. Figure 6-3 below shows the typical morphology of a river channel.

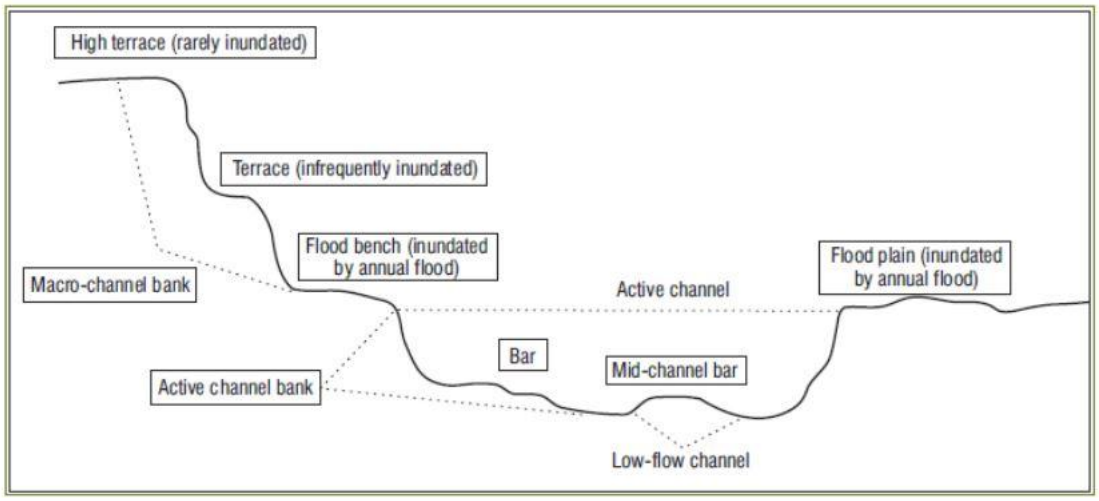

Figure 6-3: Typical cross-section of a river showing channel morphology 'A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas – Edition 1' (DWAF, 2005)

A Practical Field Procedure for Identification and Delineation of Wetland and Riparian Areas (DWAF, 2005) was used in the delineation of the riparian zone boundary. Delineated riparian zones were then classified using a HGM classification system based on the system proposed by Ollis (2013). According to Cowan et al. (2005), riparian ecosystems are separated from other wetland ecosystems on the following three major features:

- They have linear form as a consequence of their proximity to rivers and form a boundary between the terrestrial and aquatic ecosystems.
- Energy and materials from the surrounding landscape converge and pass through riparian ecosystems. This amount is greater in terms of unit area than with any other system.
- Riparian ecosystems are connected hydrologically to both upstream and downstream ecosystems (intermittently).

6.4 Present Ecological Status (PES)

The overall approach is to quantify the impacts of human activity or clearly visible impacts on wetland health, and then to convert the impact scores to a Present Ecological Status (PES) score. This takes the form of assessing the spatial extent of impact of individual activities/occurrences and then separately assessing the intensity of impact of each activity in the affected area. The extent and intensity are then combined to determine an overall magnitude of impact. The Present State (PES) categories are provided in Table 6-2 below.

Table 6-2: The PES categories (Macfarlane, et al. 2009)

Category	Description	Impact Score Range	Present State Category
None	Unmodified, natural	0 to 0.9	A

Category	Description	Impact Score Range	Present State Category
Small.	Largely Natural with few modifications. A slight change in ecosystem processes is discernible and a small loss of natural habitats and biota may have taken place	1.0 to 1.9	B
Moderate.	Moderately Modified. A moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact	2.0 to 3.9	C
Large	Largely Modified. A large change in ecosystem processes and loss of natural habitat and biota has occurred.	4.0 to 5.9	D
Serious	Seriously Modified. The change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable	. 6.0 to 7.9	E
Critical	Critically Modification. The modifications have reached a critical level and the ecosystem processes have been modified completely with an almost complete loss of natural habitat and biota.	8.0 to 10	F

6.5 Ecological Importance and Sensitivity (EIS)

The method used for the EIS determination was adapted from the method as provided by DWS (1999) for floodplains. The method takes into consideration PES scores obtained for WET-Health as well as function and service provision to enable the assessor to determine the most representative EIS category for the wetland feature or group being assessed. A series of determinants for EIS are assessed on a scale of 0 to 4, where 0 indicates no importance and 4 indicates very high importance. The mean of the determinants is used to assign the EIS category as listed in Table 6-3

Table 6-3: Description of EIS categories.

EIS Category	Range of Mean	Recommended Ecological Management Class
Very High: Wetlands that are considered ecologically important and sensitive on a national or even international level. The biodiversity of these wetlands is usually very sensitive to flow and habitat modifications. They play a major role in moderating the quantity and quality of water of major rivers.	3.1-4.0	A
High: Wetlands that are considered to be ecologically important and sensitive. The biodiversity of these wetlands may be sensitive to flow and habitat modifications. They play a role in moderating the quantity and quality of water of major rivers.	2.1-3.0	B
Moderate: Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.	1.1-20	C

EIS Category	Range of Mean	Recommended Ecological Management Class
Low marginal: Wetlands that is not ecologically important and sensitive at any scale. The biodiversity of these wetlands is ubiquitous and not sensitive to flow and habitat modifications. They play an insignificant role in moderating the quantity and quality of water of major rivers.	<1	D

7 Impact Assessment Methodology

The Risk/Impact Matrix is based on the DWS 2015 publication: Section 21(c)&(i) Water use Risk Assessment Protocol. The environmental risk/impact of any aspect is determined by a combination of parameters associated with the risk/impact. Each parameter connects the physical characteristics of an impact to a quantifiable value to rate the environmental risk. Impact assessments was conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation;
- Specification of the impact identification techniques;
- Criteria to evaluate the significance of impacts;
- Design of mitigation measures to lessen impacts;
- Definition of the different types of impacts (indirect, direct or cumulative); and
- Specification of uncertainties.

After all risks/impacts have been identified, the nature of each impact can be predicted. The risk/impact prediction considers the physical, biological, socio-economic and cultural information and will then estimate the likely parameters and characteristics of the impacts. The impact prediction will aim to provide a basis from which the significance of each risk/impact can be determined and appropriate mitigation measures can be developed.

The risk assessment methodology is based on defining and understanding the three basic components of the risk, i.e. the source of the risk, the pathway and the target that experiences the risk (receptor).

A summary of the water related impacts over the different phases of the rehabilitation project is presented in this section indicating the most significant impacts on water resources in the Project. This section has been referenced from DWA Risk-Based Water Use Authorisation Approach and Delegation Guidelines.

In order to assess each of the factors for each impact, the ranking scales as contained in Table 7-1 were used.

Table 7-1: Ranking scales for risk assessment

Severity	
Insignificant / non-harmful	1

Small / potentially harmful	2
Significant / slightly harmful	3
Great / harmful	4
Disastrous / extremely harmful and/or wetland(s) involved	5
Spatial Scale	
Area specific (at impact site)	1
Whole site (entire surface right)	2
Regional / neighbouring areas (downstream within quaternary catchment)	3
National (impacting beyond secondary catchment or provinces)	4
Global (impacting beyond SA boundary)	5
Duration	
One day to one month, PES, EIS and/or REC not impacted	1
One month to one year, PES, EIS and/or REC impacted but no change in status	2
One year to 10 years, PES, EIS and/or REC impacted to a lower status but can be improved over this period through mitigation	3
Life of the activity, PES, EIS and/or REC permanently lowered	4
More than life of the organisation/facility, PES and EIS scores, a E or F	5
Frequency of the activity	
Annually or less	1
6 monthly	2
Monthly	3
Weekly	4
Daily	5
Frequency of the incident/ impact	
Almost never / almost impossible / >20%	1
Very seldom / highly unlikely / >40%	2
Infrequent / unlikely / seldom / >60%	3
Often / regularly / likely / possible / >80%	4
Daily / highly likely / definitely / >100%	5
Legal Issues	
No legislation	1
Fully covered by legislation (wetlands are legally governed)	5
Detection	
Immediately	1

Without much effort	2
Need some effort	3
Remote and difficult to observe	4
Covered	5

The maximum value of significance is 300. Environmental impact/risks could therefore be rated as either high (H), moderate (M), or low (L) significance on the following basis:

- More than 170 points indicates high (H) environmental significance;
- Between 56 – 169 points indicate moderate (M) environmental significance;
- Less than 55 points indicates low (L) environmental significance

Table 7-2: Rating Class

Rating	Class	Management Description
1 – 55	(L) Low Risk	Acceptable as is or consider requirement for mitigation. Impact to watercourses and resource quality small and easily mitigated. Wetlands may be excluded.
56 – 169	M) Moderate Risk	Risk and impact on watercourses are notably and require mitigation measures on a higher level, which costs more and require specialist input. Wetlands are excluded.
170 – 300	(H) High Risk	Always involves wetlands. Watercourse(s) impacts by the activity are such that they impose a long-term threat on a large scale and lowering of the Reserve.

The methodology determines the environmental significance using the following equations:

Table 7-3: Calculations

Consequence =	Severity + Spatial Scale + Duration
Likelihood=	Frequency of Activity + Frequency of Incident +Legal Issues + Detection
Significance \Risk=	Consequence X Likelihood

The consequence of an impact can be derived from the following factors:

- Spatial scale;
- Duration of impact; and
- Severity / magnitude.

Significance is obtained by multiplying the consequence of the impact with the probability of occurrence, as follows:

- Significance = Consequence x Likelihood
- The maximum score that can be obtained is 300 significance points (Table 7-2).

In addition, impacts/risk were determined to be negative or positive based on the manner in which they affect the environment.

- Positive Environmental Impacts: Those activities that result in the overall environmental benefit;
- Negative Environmental impacts: Activities that result in an overall degradation of the environment.

8 Baseline Wetland Assessment Findings

8.1 Wetland Delineation and Typing

The wetland areas were delineated in accordance with the (DWAF, 2005) guidelines, whereby features such as soil, vegetation and topography were considered. According to the wetland definition used in the NWA, Act 36 of 1998, typical wetland vegetation is the primary indicator, which must be present under normal circumstances, however, in practice the soil wetness indicator tends to be the most important, and the other three indicators are used in a confirmatory role. The soil wetness indicator is based on the presence of hydromorphic features in the soil. The hydromorphic features in the soil develop as a result of a fluctuating water table and prolonged periods of anaerobic soil conditions. Prolonged periods of anaerobic soil conditions result in a change in the chemical characteristics of the soil. Certain soil components, such as iron and manganese, which are insoluble under aerobic conditions, become soluble when the soil becomes anaerobic, and can thus be leached out of the soil profile. The fluctuation of the water table results in the alternation between aerobic and anaerobic conditions within the soil profile. Lowering of the water table results in a switch from anaerobic to aerobic soil conditions, causing dissolved iron to return to an insoluble state and precipitate in the form of mottles or gleying which is described as the redoximorphic features in the soils.

Wetland vegetation communities also known as hydrophytes are species that have adapted to some level of inundation of the soil and 'facultative hydrophytes' are able to survive in both inundated and terrestrial soils. A hydrophytic plant community is dominated by species that have been distributed as a result of hydrological factors such as: flow rates, water depth, timing and duration of flooding, sediment accumulation, and underground water exchange. Hydrophytes are used as indicators of the presence of wetlands and have been listed according to the DWAF specifications. The type and distribution of these species is dependent on the hydroperiod (characterized by the duration and the depth of flooding). Some of the identified hydrophytes include species such as *Juncus effuses, various Cyperaceous species, Sporobolus sp., Eragrostis sp. Monopsis decipiens, Lobelia sp*, and several *Helichrysum* species.

The wetland delineation was conducted with the aid of aerial imagery as well as a site visit conducted on the 10th of November 2025 at the Albion North Resource Quantification Project Area. Findings indicate that four wetland hydro-geomorphic (HGM) units were identified within the project area as indicated in Figure 8-1. The identified wetland HGM units are classified as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone
- HGM Unit 2: Hillslope Seepage Wetland

- HGM Unit 3: Channelled Valley Bottom Wetland
- HGM Unit 4: Hillslope Seepage Wetland

An HGM unit is a recognisable physiographic wetland-unit based on the geomorphic setting, water source of the wetland and the water flow patterns (Macfarlane et al., 2009). Below is the description of each HGM unit.

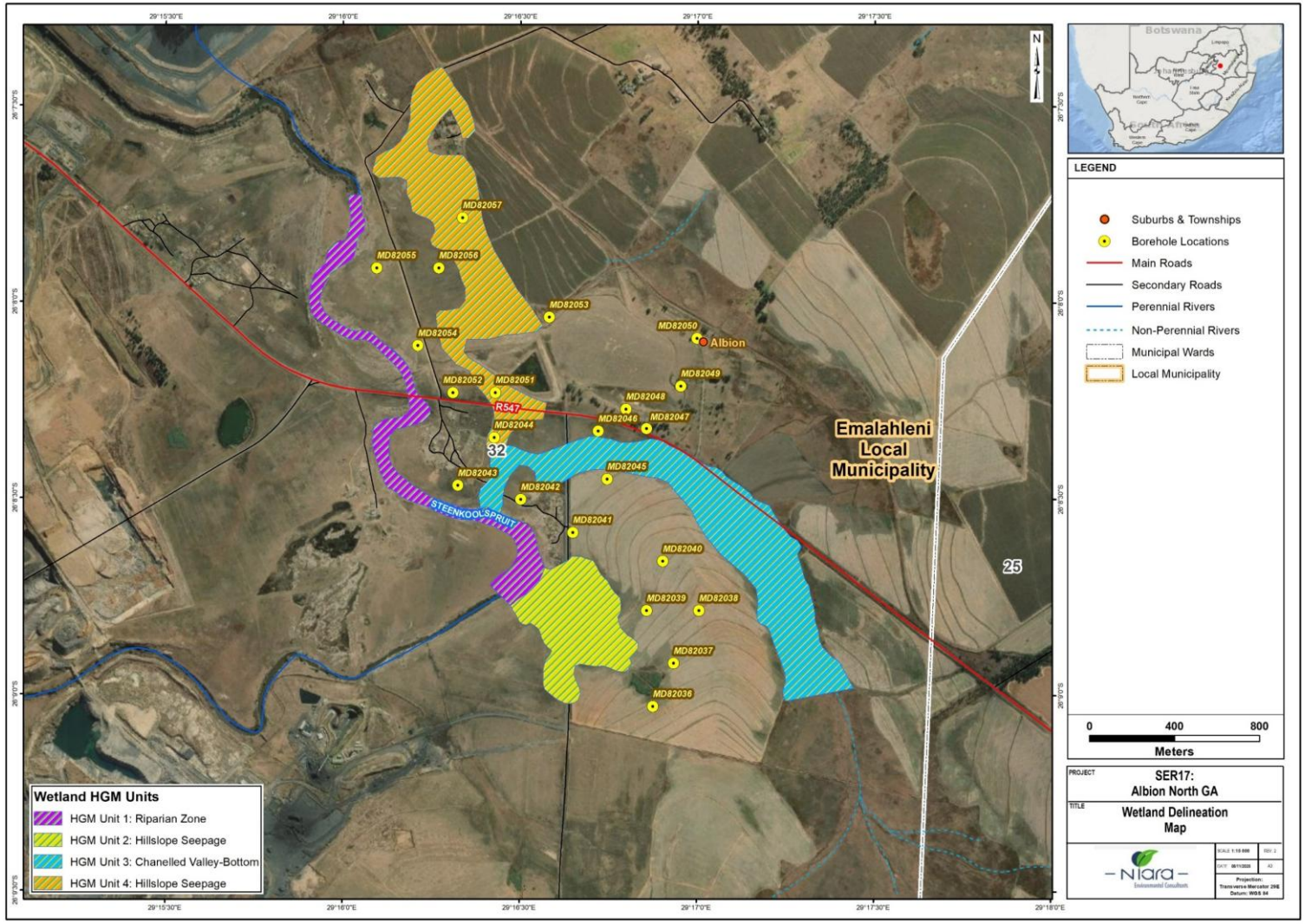

Figure 8-1: Map of the delineated wetland areas within the Albion North Resource Quantification Area

8.1.1 HGM Unit 1: Steenkoolspruit Riparian Zone

The Steenkoolspruit riparian zone and the associated active channel was observed during the field assessment conducted on the 10th of November 2025. The Steenkoolspruit active channel and the associated riparian zone forms the northern boundary of the Albion North Resource Quantification Project Area. The physical structure of the riparian zone within the Albion resource quantification area is relatively undisturbed and the site is characterised by predominantly indigenous, naturally occurring vegetation.

The dominant vegetation within the resource quantification area are grasses with pockets of herbs and woody species identified upstream of the project area. The following grass and sedge species occur: *Panicum coloratum, Setaria sphacelata, Aristida congesta, Cyperus sexangularis, Commelina diffusa subsp. scandens, Persicaria decipiens*, etc. Exotic vegetation such as *Verbena bonariensis*, *Tagetes minuta*, *Ricinus communis*, *Lantana camara*, etc. occur.

The edge of the flood zone was identified using the macro-channel indicators such as alluvial soils and a physical terrace where a change between the riparian area and the upland (terrestrial) slopes occurs.

None of the proposed resource quantification boreholes fall within the delineated Steenkoolspruit Riparian Zone. As such the delineated Steenkoolspruit Riparian Zone will not be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

8.1.2 HGM Unit 2 and HGM Unit 4: Hillslope Seepage Wetlands

HGM Unit 2 and HGM Unit 4 were identified as typical hillslope seepage wetlands during the field assessments conducted on the 10th of November 2025. These hillslope seepage has been channelised and drained due to current and historical anthropogenic activities such as farming and open cast coal mining in the area.

Hillslope seepage wetlands occur on (gently to steeply) sloping land, which is dominated by the colluvial (i.e. gravity-driven), unidirectional movement of material down-slope. Water inputs are primarily from groundwater or precipitation that enters the wetland from an up-slope direction in the form of subsurface flow. Water movement through the wetland is mainly in the form of interflow, with diffuse overland flow ('sheetwash') often being significant during and after rainfall events. Water leaves a 'hillslope seep with channelled outflow' mostly by means of concentrated surface flow, whereas water leaves a 'hillslope seep without channelled outflow' by means of a combination of diffuse surface flow, interflow, evaporation and infiltration.

None of the proposed resource quantification boreholes fall within the delineated HGM Unit 2. As such HGM Unit 2 will not be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

A total of 3 (MD82057, MD82051 and MD82044) resource quantification boreholes fall within the delineated HGM Unit 4. As such the HGM Unit 4 will be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

8.1.3 HGM Unit 3: Channelled Valley Bottom Wetland

HGM Unit 3 was identified as a channelled valley bottom wetland during the field assessments conducted on the 10th of November 2025. Channelled valley bottom wetlands are located at the lowest position in a landscape where the water drained from the local

slopes accumulate. Water expressed in the hillslope seepage wetlands may also drain towards the valley bottom wetlands. These wetland systems play important functions such as sediment trapping, flood attenuation and nutrient-cycling. The valley bottom wetland on site receives return water from the water treatment facilities in the area. The vegetation communities in the channelled valley bottom wetlands reduce the water retention time, thus providing an opportunity for flood and contaminant (nutrients, pesticides, herbicides) attenuation. Extensive areas of these wetlands remain saturated as stream channel input is spread diffusely across the valley bottom, even at low flows (Kotze et al., 2007). These wetlands also tend to have a high organic content. Facultative wetland indicator plant species, comprising a mixture of grasses and sedges are evident as longitudinal bands within a relatively narrow zone along the valley bottoms. Facultative wetland plant species usually grow in wetlands (67-99% of occurrences) but occasionally are found in non-wetland areas.

None of the proposed resource quantification boreholes fall within the delineated HGM Unit 3. As such HGM Unit 3 will not be directly impacted by the proposed Albion North Resource Quantification Project drilling of boreholes.

8.2 Present Ecological Status

The identified wetlands within the two resource quantification areas are located within areas where a lot of economic activity including human settlements, cattle farming, crop farming, coal mining and power generation. Some of the anthropogenic impacts identified on the wetlands include:

- Active and historical coal mining activities that are encroaching into wetlands and riparian zones;
- Livestock and grazing of varying intensity leading to wetland vegetation degradation and reduced species diversity;
- Crop farming encroaching into the edges of the wetland areas;
- Informal road crossings diverting surface water flow resulting in erosion;
- Exotic vegetation and weed encroachment within wetlands and riparian zones
- Cut-off trenches and berms placed to drain certain wetlands or convey flows away from infrastructure leading to a reduction in the natural extent or degree of saturation of the wetlands affected; and
- Head-cut erosion resulting in desiccation of wetland areas;
- Historical resource quantification activities;
- Road crossings with a single culvert;

The Present Ecological Status of the wetlands within the project area is indicated in Figure 8-2, below were as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone. The Steenkoolspruit Riparian Zone located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.

- HGM Unit 2 and HGM Unit 4: Hillslope Seepage Wetlands. The hillslope seepage wetlands located within the Albion North Resource Quantification Project Area were found to have significantly deviated from the reference condition such that the classification ranged from Largely Modified (PES-D) (where a large change in ecosystem processes and loss of natural habitat and biota has occurred) to Seriously Modified (PES-E) (where the change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable).
- HGM Unit 4: Channelled Valley Bottom Wetland. The channelled valley bottom wetland located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.

The integrity of the wetland areas identified within the Albion North Resource Quantification Project Area have significantly deviated from reference conditions due to current and historical land use activities such as coal mining and crop farming. Coal mining in and around the Albion North Resource Quantification Project Area have resulted in significant negative impacts on wetland health of the delineated wetlands affecting their hydrology, water quality, soils, vegetation and biodiversity. Some of the identified impacts include:

- Surface flow changes: Construction and operation of access roads, haul roads, spoil heaps, and pits have resulted in the redirection of natural water flow, leading to either flooding or desiccation of wetlands,
- Increased sedimentation**:** Erosion and mobilisation of soil hips from mining sites have introduced sediment that clogs wetland channels, smothers vegetation, and reduces light penetration.
- Soil compaction and contamination: Heavy machinery and waste deposition has resulted in the compaction of soils and introduction of toxins hindering plant growth.
- Habitat loss and fragmentation**:** Wetlands are critical habitats for amphibians, birds, and invertebrates. Mining-induced changes in water quality have led to the decline of sensitive indigenous species.

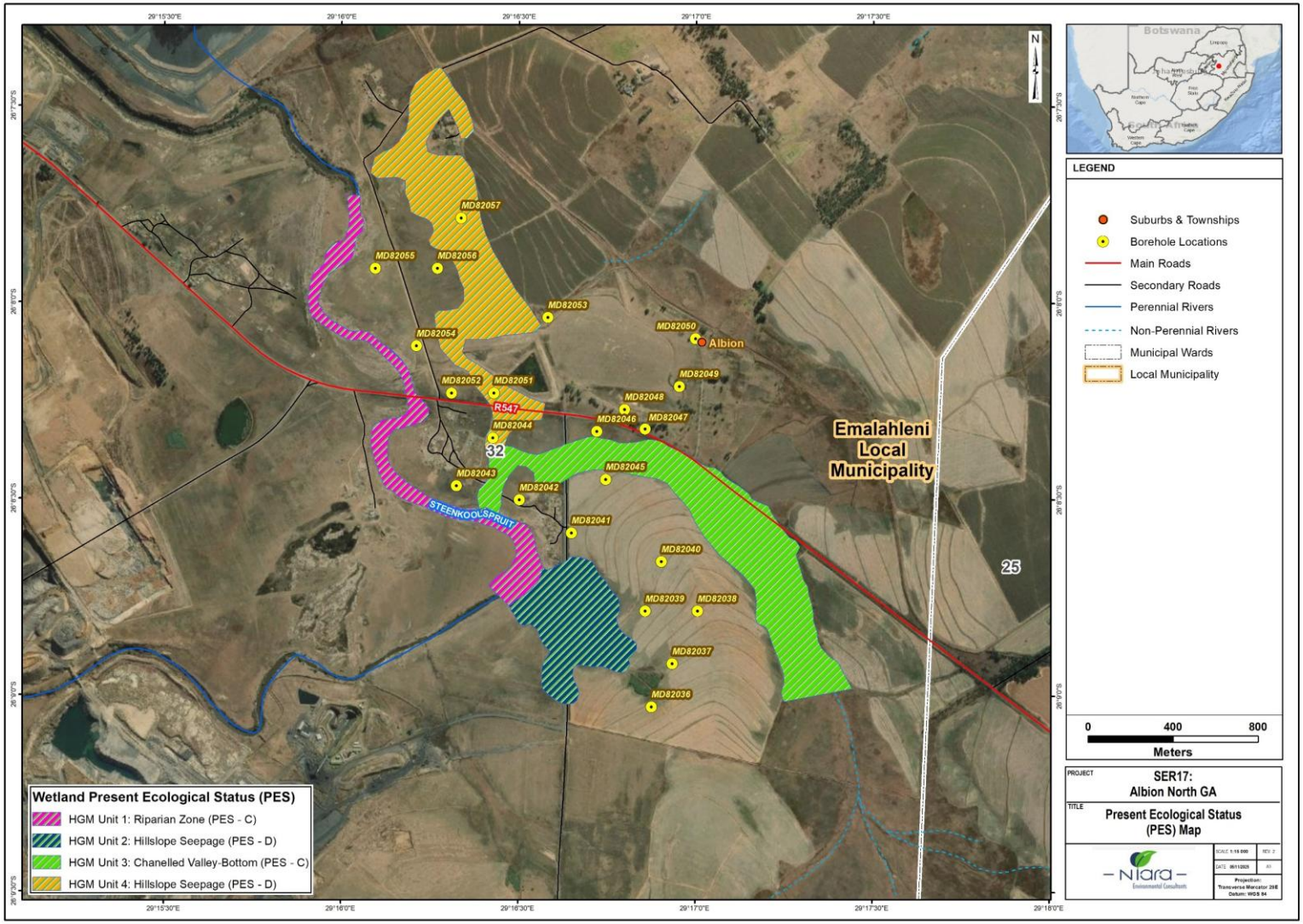

Figure 8-2: Map indicating the Present Ecological Status of the delineated wetlands within the Albion North Resource Quantification Area.

8.3 Ecological Importance and Sensitivity (EIS)

The wetlands within the project area form part of the Olifants River Primary catchment which is a heavily utilised and economically important catchment in the South African context. Wetlands and rivers within the Olifants River Catchment upstream of Loskop Dam have been greatly impacted upon by various activities, which include mining, power generation (several Power Station), water abstraction, urbanization, agriculture etc. As a result of these impacts serious water quality and quantity concerns have been raised within the sub-catchment. The Ecological Importance and Sensitivity of wetlands within the project area is indicated in Figure 8-3.

All the identified wetland HGM Units within the Albion North Resource Quantification Project Area were found to be **Moderate:** Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.

- HGM Unit 1: Steenkoolspruit Riparian Zone: Moderate:
- HGM Unit 2 and Unit 4: Hillslope Seepage Wetlands: Moderate:
- HGM Unit 3: Channelled Valley Bottom Wetlands: Moderate:

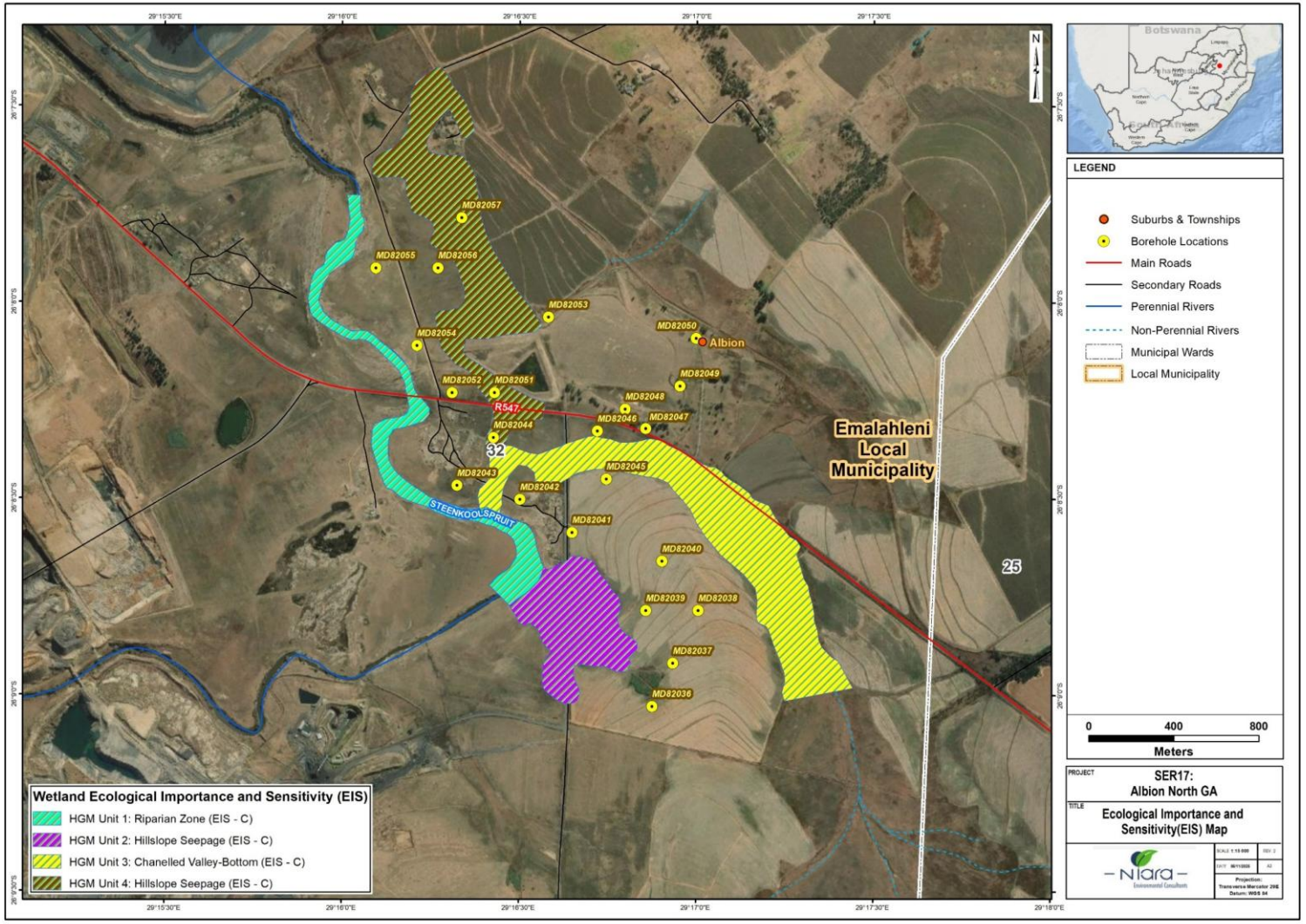

Figure 8-3: Map indicating the Ecological Importance and Sensitivity (EIS) of wetlands within the Albion North Resource Quantification Area

8.4 Buffer Zone calculation

The buffer zones are a requirement in order to facilitate the protection of the delineated wetland areas within the project area. The purpose of the establishment of buffer zones is to minimize the anthropogenic impacts associated with development on the receiving water resources. A buffer zone is defined as:

"the strips of undeveloped, typically vegetated land (composed in many cases of riparian habitat or terrestrial plant communities) which separate development or adjacent land uses from aquatic ecosystems (rivers and wetlands)."

The "Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries" (Macfarlane et al., 2014) was considered to determine the appropriate buffer zone for the proposed activity. A buffer zone could not be calculated for the proposed drilling of resource quantification boreholes as these are temporary and will be rehabilitated following project completion.

9 Project Description

The proposed exploration drilling programme forms part of Seriti Power's efforts to quantify the mineral resource potential within the Albion Section of MMS. The project involves the drilling of exploration boreholes to delineate coal reserves, evaluate their quality and extent, and ensure compliance with relevant regulatory requirements, including the National Water Act, 1998 (Act No. 36 of 1998). The activity will follow a structured methodology, encompassing site preparation and establishment, drilling operations, and closure and rehabilitation, each underpinned by stringent safety, environmental and quality control protocols.

9.1 Purpose of the Exploration Drilling

Exploration drilling represents a critical initial phase in the mine development process, designed to generate accurate geological data that will underpin informed decision-making. The programme is specifically aimed at quantifying the coal resource potential of the Albions North Section and establishing the technical and economic viability of future mining operations.

The key purposes of the exploration drilling are as follows:

- Resource Confirmation: To verify the presence, distribution, and continuity of coal seams within the target area, ensuring that the geological model reflects actual site conditions.
- Quality and Quantity Determination: To obtain detailed information on the thickness, grade, calorific value, and other physical and chemical characteristics of the coal. This allows for an assessment of both the quality and the quantity of coal that can be economically extracted.
- Subsurface Data Collection: To recover continuous core samples for geological, structural, and mineralogical analysis. These core logs provide insight into stratigraphy, lithology, seam composition, and potential geological structures (e.g., faults, dykes, intrusions) that may influence mining.

- Mine Planning and Feasibility Support: To generate the baseline information required for mine design, scheduling, and operational planning. Data from drilling will inform feasibility studies, cost projections, and risk assessments, thereby reducing uncertainty in project investment decisions.
- Environmental and Risk Management: To contribute towards identifying geohydrological and environmental considerations, such as aquifer depth, groundwater inflows, and potential interaction with sensitive water resources. These insights support environmental risk assessments and compliance with regulatory requirements.

Figure 9-1: Exploration drilling process

9.2 Site Preparation and Establishment

Before drilling commences, each borehole location will be staked out under the supervision of a Mine Surveyor or Geologist, in line with the Laying Out and Staking Exploration Boreholes Protocol. Key preparatory steps include:

- Site Inspections: Joint inspections by the Drilling Crew and Supervisor to identify hazards (muddy patches, dragline cables, power lines, etc.).
- Job Safety Analysis (JSA): Conducted daily and at the start of each borehole, signed off by the Supervisor or Safety Officer prior to work commencing.
- Contractor Site Establishment Procedure: Implementation of direction boards, barricading, updated information boards, and predetermined escape routes.
- Safety Measures: Placement of sump guards, clearance of core packing areas, provision of firefighting and first aid equipment, portable lightning detection, and safe distancing of operations (≥30m from hazards unless otherwise approved).

Environmental and operational considerations during this phase include:

- Access Planning: Use of existing disturbed areas and tracks where possible, minimising new track construction and avoiding wetland channels.
- Track Management: Align tracks parallel to contours to reduce erosion risk.
- Borehole Positioning: Use of GPS to set out borehole positions while avoiding saturated soils.
- Vegetation Clearing: Restricted to immediate borehole areas; alien vegetation to be removed and disposed of appropriately.

9.3 Operations

Exploration drilling will be undertaken in strict adherence to the Mine's Standard Operating Procedures (SOPs) and the Contractor's Health, Safety, Environment and Community (HSEC) protocols.

Key operational controls include:

- Competence & Oversight: All Drill Operators and Assistants must be trained, competent, and authorised. The Project Manager will spend at least 60% of their time on-site.
- Personal Protective Equipment (PPE): Mandatory PPE includes level 5 cut-resistant gloves, hearing protection, and spare PPE on-site.
- Operational Protocols: Grounding all outriggers during drilling, maintaining a clean drill site, safe placement of drill rods (≥3m from borehole), and strict adherence to two-man lifting/loading protocols.
- Safety Procedures: Regular gas testing, 5m exclusion zone around boreholes, daily safety meetings, and Permit-to-Work (PTO) for high-risk or non-routine tasks.
- Repairs & Relocation: Onsite repairs only by qualified Artisans under strict lockout/tagout procedures. Hitching/unhitching of rigs must comply with Contractor SOPs.

9.4 Drilling Operations

The safety of the Drill Rig Operator is a fundamental priority during all drilling activities. The Operator must always be positioned in a manner that allows unrestricted access to the machine controls while maintaining a safe distance from moving and rotating components. To reduce risk from falling objects such as quill rods or pulleys, the drill rig is equipped with a protective canopy. The Operator is required to conduct all operations from beneath this canopy, thereby minimising the likelihood of injury from mechanical or structural hazards.

As an additional safeguard, the slide gate on the canopy must remain locked at all times during drilling. This control measure prevents inadvertent contact with rotating or moving parts of the rig, ensuring both the Operator's safety and the safe functioning of the equipment. Strict adherence to these protocols is essential to reducing accident potential and maintaining both operational efficiency and regulatory compliance.

Beyond operator safety, the drilling programme also incorporates a range of operational and environmental management measures to ensure responsible and effective implementation:

- Borehole Drilling: An NQ2 drill rig will be employed to drill boreholes with an approximate diameter of 76 mm. Emphasis will be placed on achieving high-quality core recovery from both overburden and rock strata.
- Fluid Management: Drilling water will be channeled into lined sumps or berms to prevent downslope spillage and contamination. All fluids, oils, and greases will be carefully handled and stored in accordance with site safety and environmental protocols.
- Waste Disposal: Drilling fluids, additives, and any potentially toxic substances will be disposed of responsibly to prevent environmental damage. Sealed plastic drop sheets will be used as a precaution against accidental spills or leaks.
- Borehole Profiling: Boreholes will be profiled in line with Southern African methodologies. Soil and rock horizons recovered from the core will be sampled, logged, and catalogued for geological analysis.
- Rehabilitation: Upon completion of drilling, sumps will be backfilled and boreholes rehabilitated. Excavated materials will be replaced in their correct stratigraphic order, and sites will be left clean, safe, and free of debris.
- Vehicle Management: Machinery will exit using the same access routes used for entry. Routes will be surveyed post-operation for ruts, with deep ruts filled or plugged to prevent erosion. No vehicle servicing, cleaning, or fuel storage will be permitted on-site to safeguard against environmental risks.

By implementing these combined safety, operational, and environmental protocols, the project ensures that drilling activities are conducted in a controlled, compliant, and sustainable manner, safeguarding personnel, the environment, and overall project outcomes.

9.5 Closure and Rehabilitation

Rehabilitation following drilling activities is a critical component of the exploration programme, aimed at minimizing environmental impacts, restoring site integrity, and ensuring compliance with applicable legislation and best practice standards. Rehabilitation measures are designed in alignment with the findings of the Environmental Risk Assessment (ERA), ensuring that potential risks are proactively managed and mitigated.

Drill rigs will only be demobilized once all associated sumps and disturbed areas have been adequately backfilled, stabilised, and rehabilitated. Sumps must be filled and clearly demarcated using chevron tape to prevent accidental disturbance. Where non-biodegradable oils or other contaminants have been utilised, enhanced measures will be implemented. These include the application of approved biodegradation agents to contaminated soils or, where necessary, the excavation, removal, and rehabilitation of impacted material.

The Operational Geologist bears responsibility for overseeing all rehabilitation activities and ensuring compliance with prescribed standards. This includes:

- Conducting regular inspections of rehabilitated drill sites.
- Documenting outcomes on the official Borehole Header Sheet for record-keeping and accountability.
- Initiating thorough investigations in the event of environmental non-conformances, identifying root causes, and implementing corrective and preventative actions.

Proper management of drill core is also an essential element of closure. Drill core recovered from environmentally restricted areas will be handled in strict compliance with environmental authorization conditions. Depending on the site context, core may either:

- Be disposed of at designated, approved areas following logging and sampling, or
- Remain on-site where future mine workings are planned in that direction, provided this does not contravene environmental or safety requirements.

9.5.1 Sealing of Boreholes

The sealing of boreholes is a critical step in ensuring the integrity and safety of drilling sites, and it is governed by specific protocols to adhere to regulatory and safety standards. As part of this process, the Drilling Company is responsible for sealing the borehole and issuing a sealing certificate to the Geologist, confirming that the borehole has been properly sealed. In areas where underground mining is either likely to take place, has occurred, or is indicated by the Environmental Risk Assessment, or at the request of the Geologist, drill holes must be sealed with cement up to 1 meter from the collar. This precautionary measure helps to prevent potential underground issues and ensures the stability of the surrounding geological formations.

To ensure consistency and compliance with established procedures, the sealing of boreholes follows the guidelines outlined in the contractor's SOP. Adherence to these SOPs guarantees that the sealing process is conducted efficiently and effectively, minimizing the risk of environmental contamination and maintaining the overall integrity of the drilling site.

10 Impact Assessment

As indicated in Section 9 above, no permanent infrastructure will be constructed onsite as part of the project. The drilling of the resource quantification boreholes project aims to quantify the mineral resource potential in an area where mining rights have been approved but the resource remains unquantified. Through the systematic drilling of boreholes and subsequent analysis of core samples, the project seeks to provide valuable data for accurate resource estimation, supporting informed decision-making regarding potential mining operations. Resource quantification borehole drilling represents a crucial step towards unlocking the mineral potential of the designated area while ensuring responsible environmental stewardship and regulatory compliance. By providing accurate resource assessments and environmental evaluations. The environmental impacts on the identified wetlands in the area have been risk assessed and the findings are indicated in the table below. Only the Construction and Rehabilitation phases were risk assessed since no ongoing operations that will take place onsite as indicated in Table 10-1 below.

Based on the assessments conducted onsite and findings indicated in Figure 8-1, a total of 22 resource quantification boreholes are proposed in order to adequately complete the proposed resource quantification.

- A total of 3 **(MD82057, MD82051 and MD82044)** resource quantification boreholes fall within the delineated HGM Unit 4. None of the other delineated HGM units are directly impacted by the proposed Albion North Resource Quantification Project.
- Only 3 resource quantification boreholes **MD82045, MD82046 and MD82047** are located less than 50m away from the delineated HGM Unit 3: Channelled valley Bottom Wetland. Only one resource quantification borehole **(MD82053)** is located less than 50m away from HGM Unit 4: Hillslope Seepage Wetland.
- As such a total of resource quantification boreholes are located outside of the delineated wetland areas and more than 50m away from the edge of the delineated HGM units within the Albion North Resource Quantification Project Area.

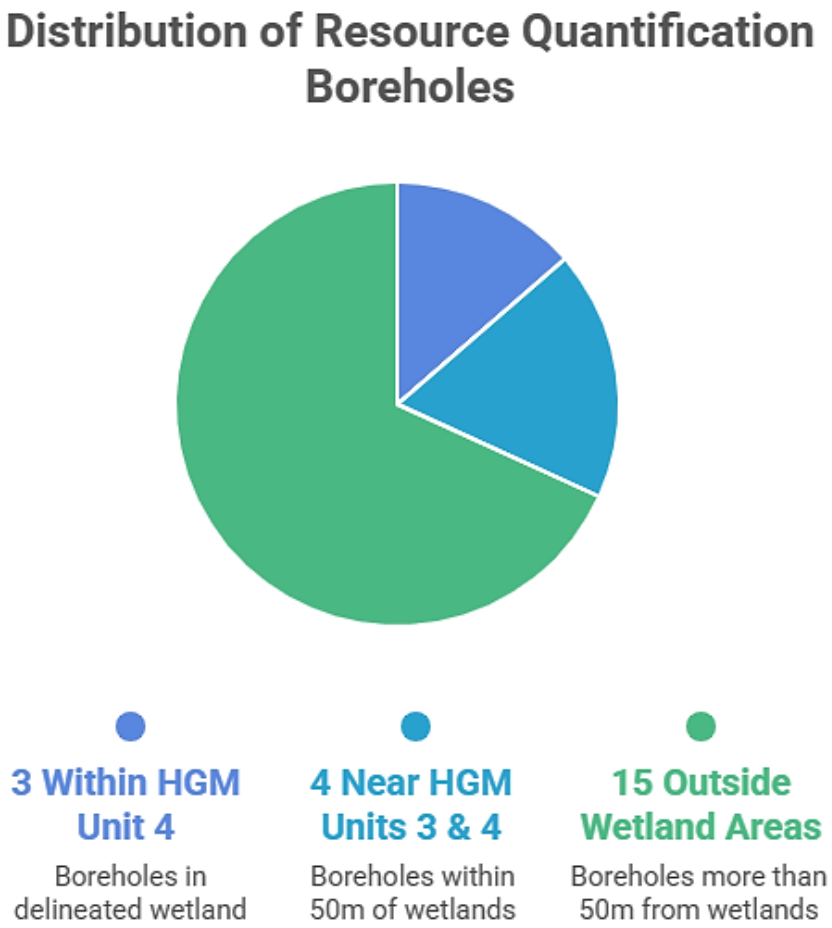

Figure 10-1: Distribution of quantification boreholes

Table 10-1: DWS Risk Impact Matrix.

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Construction Phase																							
Vehicle access	3	1	2	6	2	3	5	3	13	**78**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme • Vehicle access to the site and drilling positions should use existing tracks. • Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use; • Drilling of boreholes should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2	4	1	1	5	1	8	**32**	**Low**
Establishment of the construction yard	2	1	2	5	2	4	1	3	10	**50**	**Low**	• Construction yard must be located outside of the delineated wetland areas. • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces; • The footprint area of the construction yard must be kept a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas; • Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation); • Disturbed surface areas in the construction phase to be rehabilitated after completion of construction; • All construction material, equipment and any foreign objects brought into the area by contractors and staff to be removed after completion of construction. • All waste removed from the resource quantification site must be disposed at an appropriate disposal facility; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme;	1	1	2	4	1	1	1	1	4	**16**	**Low**

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Vegetation clearing	2	1	2	5	1	3	5	3	12	**60**	**Moderate**	• Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • Alien vegetation encountered on the drill sites must be physically removed from the area prior to commencement with drilling activities.	1	1	2	4	1	2	5	1	9	**36**	**Low**
Stripping and stockpiling of topsoil	2	1	2		1	3	5	3	12	**60**	**Moderate**	• Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2		1	2	5	1	9	**36**	**Low**
Digging of sump	2	1	2		1	3	5	3	12	**60**	**Moderate**	• Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2		1	2	5	1	9	**36**	**Low**

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Hydrocarbon leaks, spills and overfills from machinery, equipment & vehicles	3	3	3	9	3	2	5	3	13	**117**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • Care must be taken in the handling and storage of all drilling fluids, oils, greases and fuel on site, including all drilling vehicle and support vehicle fluids; • Sufficient spill clean-up material must be kept on site at all times to deal with minor spills. All spills should be reported to the Environmental Officer and the relevant authorities (DWS) immediately, with specialists appointed to oversee the clean-up operations; • No drilling equipment should be fixed onsite. All malfunctioning drilling equipment must be moved designated workshop areas for fixing; • No servicing or cleaning of vehicles/machinery to take place on site. • No storage of fuel and diesel on site. • Ensure that no equipment is washed in the streams and wetlands of the area, and if washing facilities are provided, that these are placed no closer than 100m from a wetland or water course; • No abstraction of water from the wetlands or any of the river systems draining the study area for drilling purposes; • In order to reduce the potential impacts associated with the introduction of contaminants dissolved or suspended in the runoff from drilling, where practically possible, no runoff should be introduced into wetlands directly; • Any incident that may cause pollution of any water resource must immediately be reported to the relevant authorities as per the NEMA Section 30 incident report process. • Pollution incidents must be dealt with in accordance with Section 19 and 20 of the National Water Act. • All Resource Quality Objectives (RQO's) relevant to water quality of the water resource as established in the document "Proposed Reserve Determination of Water Resources for the Upper Vaal Catchment" (DWS, 2018) should be adhered to	2	2	1	5	2	2	1	2	7	**35**	**Low**
Rehabilitation Phase																							

Aspect	Pre-Mitigation											Proposed Mitigation Measures	Post-Mitigation										
	Severity	Spatial Scale	Duration	Consequence	Frequency of activity	Frequency of incident	Legal Issues	Detection	Likelihood	**Significance**	Risk Rating		Severity	Spatial Scale	Duration	**Consequence**	Frequency of activity	Frequency of incident	Legal Issues	Detection	**Likelihood**	**Significance**	**Risk Rating**
Backfilling of exploration boreholes	2	2	1	5	1	3	5	3	12	**60**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site;	1	1	2	4	1	2	5	1	9	**36**	**Low**
Decommissioning of the construction yard	2	1	2	4	2	4	1	3	10	**40**	**Low**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • Removed vegetation should be preserved and replaced for rehabilitation of the drill sites. Rehabilitation should be completed for the closure of each hole, and not at the end of the drilling programme; • Appropriately stockpile topsoil cleared from the project area. This can be used for rehabilitation of the drill site; • The Resource quantification process should ideally take place during the dry season to reduce the erosion potential of the exposed surfaces;	1	1	2	4	1	1	1	1	4	**16**	**Low**
Establishment and spread of alien vegetation	2	2	3	7	2	3	5	2	12	**84**	**Moderate**	• All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme; • Bush clearing and excavation of sumps adjacent to drill location. Vegetation clearing should only be undertaken if absolutely necessary and should be limited to the smallest footprint possible, i.e. direct vicinity of the borehole; • Where alien vegetation is cleared, all cuttings will be removed from site and appropriately disposed of. • An alien vegetation management plan should be compiled by an ecologist during the operational phase of the mine and should be kept in place for several years following mine closure (minimum of five years); • All species of alien invasive vegetation should be controlled and removed from site. No spread of alien vegetation into any wetlands or adjacent properties should be allowed; • Vegetation clearing should only take place where necessary;	2	2	3	7	2	2	1	2	7	**49**	**Low**

11 Recommendations

The following recommendations are provided:

- All contractors and labour must undergo environmental awareness training, and be encouraged to maintain a "clean" working area, and report any (potential) risks to the environment as a result of the drilling programme;
- All drilling activities should be undertaken in the dry season (between May and September) to minimise the risk of erosion and uncontrolled run off;
- Drill positions must be decommissioned and rehabilitated on completion of drilling each hole and not left to be rehabilitated on completion of the drilling programme;
- Exploration boreholes must be properly sealed to prevent cross contamination between the shallow and the deeper aquifers;
- Use biodegradable and environmentally friendly drilling fluids;
- All fuel and reagent stored on site should be stored and prepared on bunded surfaces to contain spills and leaks;
- All hazardous waste must be stored in designated waste storage facilities and removed from site immediately after drilling works have been completed.
- Sufficient spill clean-up material must be kept on site at all times to deal with minor spills. All spills should be reported to the Environmental Officer and the relevant authorities (DWS) immediately, with specialists appointed to oversee the clean-up operations;
- An environmental audit must be conducted at least six months following the completion of drilling works.

12 Conclusions

The following conclusions were made:

- The proposed Albion North Resource Quantification Project Area is situated approximately 10km from Albion along the R544 and R547 within quaternary catchment B11E.
- Seriti appointed Niara as an Independent Environmental Assessment Practitioner (EAP) to ensure compliance by undertaking the required environmental regulatory process;
- The proposed Albion North Resource Quantification Project Area falls within the Eastern Highveld Grassland (Gm12) vegetation type as described by Mucina & Rutherford, 2012,

Findings of the wetland delineation and typing process indicates that a total of four (4) HGM units were identified within both project areas as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone
- HGM Unit 2: Hillslope Seepage Wetland
- HGM Unit 3: Channelled Valley Bottom Wetland
- HGM Unit 4: Hillslope Seepage Wetland

The Present Ecological Status of the identified HGM Units is as follows:

- HGM Unit 1: Steenkoolspruit Riparian Zone. The Steenkoolspruit Riparian Zone located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.
- HGM Unit 2 and HGM Unit 4: Hillslope Seepage Wetlands. The hillslope seepage wetlands located within the Albion North Resource Quantification Project Area were found to have significantly deviated from the reference condition such that the classification ranged from Largely Modified (PES-D) (where a large change in ecosystem processes and loss of natural habitat and biota has occurred) to Seriously Modified (PES-E) (where the change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable).
- HGM Unit 4: Channelled Valley Bottom Wetland. The channelled valley bottom wetland located within the Albion North Resource Quantification Project Area was found to have deviated from the reference condition such that it has been classified as Moderately Modified (PES-C) where a moderate change in ecosystem processes and loss of natural habitats has taken place, but the natural habitat remains predominantly intact.

The Ecological Importance and Sensitivity (EISC) of the four delineated HGM Units within the Albion North Resource Quantification Project Area were found to be **Moderate:** Wetlands that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these wetlands is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.

Impact Assessment Studies found that, a total of 22 resource quantification boreholes are proposed in order to adequately complete the proposed resource quantification.

A total of 3 (MD82057, MD82051 and MD82044) resource quantification boreholes fall within the delineated HGM Unit 4. None of the other delineated HGM units are directly impacted by the proposed Albion North Resource Quantification Project.

Only 3 resource quantification boreholes (MD82045, MD82046 and MD82047) are located less than 50m away from the delineated HGM Unit 3: Channelled valley Bottom Wetland. Only one resource quantification borehole (MD82053) is located less than 50m away from HGM Unit 4: Hillslope Seepage Wetland.

As such a total of resource quantification boreholes are located outside of the delineated wetland areas and more than 50m away from the edge of the delineated HGM units within the Albion North Resource Quantification Project Area.

13 Specialist Recommendation

The wetlands within the Albion North Resource Quantification Project Area have been significantly impacted by the historical coal mining and crop farming activities. It is the opinion of the specialist that successful and meticulous implementation of the proposed mitigation measures will result in minimal impacts to the wetlands. From a wetland perspective the proposed drilling of 22 resource quantification boreholes will result in negligible overall impact on the integrity of the identified wetland areas as such the project can be approved. No fatal flaws are expected for this project.

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Appendix A: Specialist CV

Lindokuhle Vincent Hlongwane

Wetland Specialist
SACNASP Ecological Science (400100/1)

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Email: lindo@niara.co.za
Contact No: +27 82 086 8901

EDUCATION AND QUALIFICATIONS

- Bsc Hons, University of Witwatersrand, 2006
- Bsc Degree, University of Witwatersrand, 2005

AFFILIATIONS

- South African Council for Natural Scientific Professions
- Network for Industrially Contaminated Land in Africa

YEARS OF EXPERIENCE

- 17 Years

KEY COMPETENCIES

- Baseline Wetland Assessments
- Contaminated Land Management
- Environmental Auditing

COUNTRIES OF WORK EXPERIENCE

- South Africa
- Botswana
- Mali

LANGUAGES

- English
- IsiZulu
- Southern Sotho

BIOGRAPHY

Lindokuhle Hlongwane serves as the Principal Consultant with over 17 years of professional experience as both a Wetland Specialist and a Contaminated Land Specialist. Lindokuhle has worked extensively both locally and internationally. He is a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP) and is also an active member and steering committee fellow of the Network for Industrially Contaminated Land in Africa (NICOLA).

Lindokuhle began his career in wetland assessments during his internship, contributing to the rollout and update of “A Practical Field Procedure for Identification and Delineation of Wetlands and Riparian Areas.” Since then, he has conducted numerous wetland assessments across various sectors, including housing developments, mining, and industrial projects.

In the realm of contaminated land management, Lindokuhle's expertise encompasses baseline contamination assessments, delineation of contamination plumes, development of Conceptual Site Models, setting Remedial Objectives (RO), crafting End State Visions, conducting Remedial Alternatives Analyses (RAA), and overseeing the installation of Remediation Systems such as Multi-Phase Extraction, Soil Vapour Extraction, and Sub-slab Depressurization Systems. He is adept at evaluating the efficacy of remediation systems, ensuring that remedial objectives are met, and driving projects to successful closure.

Lindokuhle is skilled in managing complex projects and navigating interactions with challenging stakeholders. His extensive experience also includes collaborating with landowners and conveyancers to provide critical input for land sale agreements. A self-motivated and trained project manager, Lindokuhle prioritizes budget, schedule, safety, and the quality of the final product. He firmly believes that incident-free operations are achievable when stakeholders unite as One Team to complete projects with zero incidents.

EMPLOYMENT HISTORY

Jul-2013 to Present: Independent Environmental Consultant

Jun-2012 to Jun-2013: Wetland Specialist, Digby Wells Environmental (Pty) Ltd

Jan-2010 to May-2012: Contaminated Land Specialist , Mills And Otten Environmental Consulting (Pty) Ltd

Jan-2007 to Mar-2009: Internship, Wetlands Consulting Services (Pty) Ltd

EXPERIENCE HIGHLIGHTS

The below highlight key recent and relative project experience:

- Rolling out of the Practical Field Procedure for Identification and Delineation of the Wetlands and Riparian Areas (DWAF 2005), DWAF, Trainer
- Crocodile West Ecological Reserve Determination Study, DWAF, Trainee Fluvial Geomorphologist
- Thukela Hydro Electric Power Scheme: Ecological Reserve Determination Study , DWAF, Fluvial Geomorphologist
- Wetland Assessment Study for the Proposed Universal Coal plc: Kangala Coal Mine, Delmas, Mpumalanga Province, South Africa, Kangala Coal Mine, Wetland Specialist
- External Audit in Fulfilment of The Integrated Water Use Licence for Klipspruit Water Treatment Plant- Year 2022, Seriti Klipspruit Colliery, Lead Auditor

Please consult the attached appendix for a comprehensive list detailing the project experiences undertaken.

APPENDIX A: PROJECT EXPERIENCE

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2007-2008	Rolling out of the Practical Field Procedure for Identification and Delineation of the Wetlands and Riparian Areas (DWAF 2005).	Department of Water Affairs and Forestry, South Africa	Trainer
2008-2009	Upgrading the Practical Field Procedure for Identification and Delineation of the Wetlands and Riparian Areas (DWAF 2005).	Department of Water Affairs and Forestry, South Africa	Trainer
2007-2008	Upper Vaal Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Trainee Fluvial Geomorphologist
2007-2008	Inkomati Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Trainee Fluvial Geomorphologist;
2008-2009	Crocodile West Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2008-2009	Groot Marico Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2008-2009	Weza River Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2009-2010	Mzimvubu River Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2009-2010	Thukela Hydro Electric Power Scheme: Ecological Reserve Determination Study	Department of Water Affairs and Forestry, South Africa	Fluvial Geomorphologist
2015	Wetland Assessment Study for a Pan Associated with an Existing Honingkranz sand Winning Operations, Bronkhorstspruit, Mpumalanga Province, South Africa;	Honningkrantz Sand Winning Operations, South Africa	Wetland Specialist
2013	Wetland Assessment Study for the Proposed Exxaro Coal: Thabametsi Coal Mine, Lephalale, Limpopo Province, South Africa;	Exxaro Coal, South Africa	Wetland Specialist
2013	Wetland Assessment Study for the Existing Rand Gold Resources: Loulo-Gounkoto Gold Mine, Mali	Rand Gold Resources, Mali	Wetland Specialist
2013	Wetland Assessment Study for the Proposed Universal Coal plc: Kangala Coal Mine, Delmas, Mpumalanga Province, South Africa;	: Kangala Coal Mine, South Africa	Wetland Specialist
2013	Wetland Assessment Study for the Proposed Universal Coal plc: Roodekop Coal Mine, Delmas, Mpumalanga Province, South Africa;	Roodekop Coal Mine, South Africa	Wetland Specialist

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2014	Wetland Assessment Study for the Proposed Msobo Coal: Cronsbrey Coal Mine, Chrissesmere, Mpumalanga Province, South Africa;	Xstarta Coal, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Anglo Thermal Coal: Dalyshope Coal Mine, Liphalale, Limpopo Province, South Africa;	Anglo Thermal Coal, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Msobo Coal: Harwar Coal Mine, Chrissesmere, Mpumalanga Province, South Africa;	Xstarta Coal, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Coal Fired Power Station and Associated Infrastructure: IPP Thabametsi Power Station, Liphalale, Limpopo Province, South Africa;	Thabametsi IPP, South Africa	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Anglo Thermal Coal: Dalyshope Coal Mine, Liphalale, Limpopo Province, South Africa;	Anglo Thermal Coal	Wetland Specialist
2014	Wetland Assessment Study for the Proposed Vedanta IPP Project: Vedanta Resources PLC, Liphalale, Limpopo Province, South Africa;	Vedanta Resources PLC	Wetland Specialist
2012	Wetland Assessment Study for the Proposed BHP Billiton: Klipsruit Coal Mine, Oogies, Mpumalanga Province, South Africa;	Klipsruit Coal Mine, South Africa	Wetland Specialist
2012	Wetland Assessment Study for the Proposed Waste Rock Dump associated with the existing Anglo Thermal Coal Greenside Colliery, Witbank, Mpumalanga Province, South Africa;	Anglo Thermal Coal Greenside Colliery, South Africa	Wetland Specialist
2012	Wetland Assessment Study for the Proposed Waste Rock Dump Associated with the Existing Anglo Thermal Coal Kleinkopje Colliery, Witbank, Mpumalanga Province, South Africa;	Anglo Thermal Coal Kleinkopje Colliery	Wetland Specialist
2015	Wetland Assessment Study for the Proposed Waste Rock Dump Associated with the Existing Anglo Thermal Coal Goedehoop Colliery, Witbank, Mpumalanga Province, South Africa;	Anglo Thermal Coal Goedehoop Colliery, South Africa	Wetland Specialist
2014	Wetland Assessment Study to Support the Biodiversity Management Plan at the Existing Anglo Thermal Coal New Vaal Colliery, Vanderbijylpark, Free State Province, South Africa;	Anglo Thermal Coal New Vaal Colliery, South Africa	Wetland Specialist

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2014	Wetland Assessment Study for the Proposed Geluksdal Tailings Storage Facility and Pipeline Infrastructure: Gold One International, Randfontein, Gauteng Province, South Africa;	Gold One International, South Africa	Wetland Specialist
2017	Ecological Assessment of Wetland Areas Associated with the Proposed Olive Street Estate Located on Portions of the Farm Vlakfontein 523 JR, Bronkhorstspruit;	Olive Street Estate, South Africa	Wetland Specialist
2017	Baseline Wetland Assessment Study for the Proposed Schoongezicht Coal Mine Located on Portions of Portion 6 of the Farm Schoongezicht 308 JS Emalahleni, Mpumalanga Province;	Schoongezicht Coal Mine, South Africa	Wetland Specialist
2023	Baseline Wetland Assessment Study for the Water Use Licence Application for Randfontein Estate Limited: Doornkop Mine	Randfontein Estate Limited, South Africa	Wetland Specialist
2016	Baseline Wetland Assessment Study for the Proposed Railway Coal Siding at the Highveld Steel and Vanadium Corporation Plant on the Farm Elandsfontein 309 JS, Clewer, Emalahleni, Mpumalanga Province	Highveld Steel (Pty) Ltd, South Africa	Wetland Specialist
2023	External Audit Report in Fulfilment of The Integrated Water Use License for Klipspruit Extension- Year 2022;	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	External Audit in Fulfilment of The Integrated Water Use License for Klipspruit Main Pit- Year 2022;	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	External Audit in Fulfilment of The Integrated Water Use Licence for Klipspruit South Pit- Year 2022	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	External Audit in Fulfilment of The Integrated Water Use Licence for Klipspruit Water Treatment Plant- Year 2022;	Seriti, Klipspruit Colliery, South Africa	Lead Auditor
2023	Khutala Colliery Regulation 704 Compliance Audit and stormwater management Plan dated October 2023;	Seriti, Khutala Coal Mine, South Africa	Lead Auditor
2023	External Audit Report in Fulfilment of The Integrated Water Use License for Khutala Mine Portion 16 - Year 2022;	Seriti, Khutala Coal Mine, South Africa	Lead Auditor

Duration	Assignment name / brief description of main deliverables/outputs	Name of client and country of assignment	Role on the assignment
2023	External Audit Report in Fulfilment of The Integrated Water Use Licence for Klipspruit South Pit- Year 2022;	Seriti Klipspruit Colliery, South Africa	Lead Auditor

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

At a congregation of the University

held on 6 April 2006

Lindokuhle Vincent Hlongwane

was admitted to the Degree of

Bachelor of Science

Dean, Faculty of Science

Vice-Chancellor and Principal

Registrar

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

At a congregation of the University

held on 05 April 2007

Lindokuhle Vincent Hlongwane

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Bachelor of Science with Honours

(Ecology, Environment and Conservation)

Dean :Faculty of Science

Vice-Chancellor and Principal

Registrar

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Lindokuhle Vincent Hlongwane

Registration number: 400100/13

is registered as a

Professional Natural Scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule I of the Act)

Biological Science **05 June 2013**

05 June 2013

Pretoria

President

Executive Director

CPTS0168-20010/02/

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Certificate of Competence

DVC (Academic)

Centre for Part-Time Studies

This is to certify that

Lindokuhle Hlongwane

from 24 August 2020 to 02 December 2020
has met the minimum requirements for competence in

Principles of Project Management Theory and Practice

(details overleaf)

BMMhacquel

...d, Centre for Part-Time Studies

...te of Issue: 12 May 2021

R. Osman

DVC (Academic