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2025/02/07

To Whom It May Concern,

Subject: Confirmation of Report Applicability – Farm No 570 (NC 30/5/1/1/2/14264 PR)

This letter serves to confirm that the report prepared by Minrom Consulting (Pty) Ltd (report reference number: 2409/20/105) for Strata Africa Exploration (Pty) Ltd, is applicable to Farm No 570. The report does specifically mention Farm No 570 which was also investigated while determining the mineral prospectivity of the Prospecting Right NC30/5/1/1/2/13826 PR. The data and analysis contained within the report are relevant and valid for Farm No 570 under NC 30/5/1/1/2/14264 PR).

If further clarification is required, please feel free to contact us.

Kind Regards,

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HOD: Mineral Resource Modelling & GIS

Minrom Consulting

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STRATA AFRICA EXPLORATION - DIATOMITE

Northern Cape, South Africa

LITERATURE REVIEW & TARGET GENERATION

Prospecting Right NC30/5/1/1/2/13826 PR

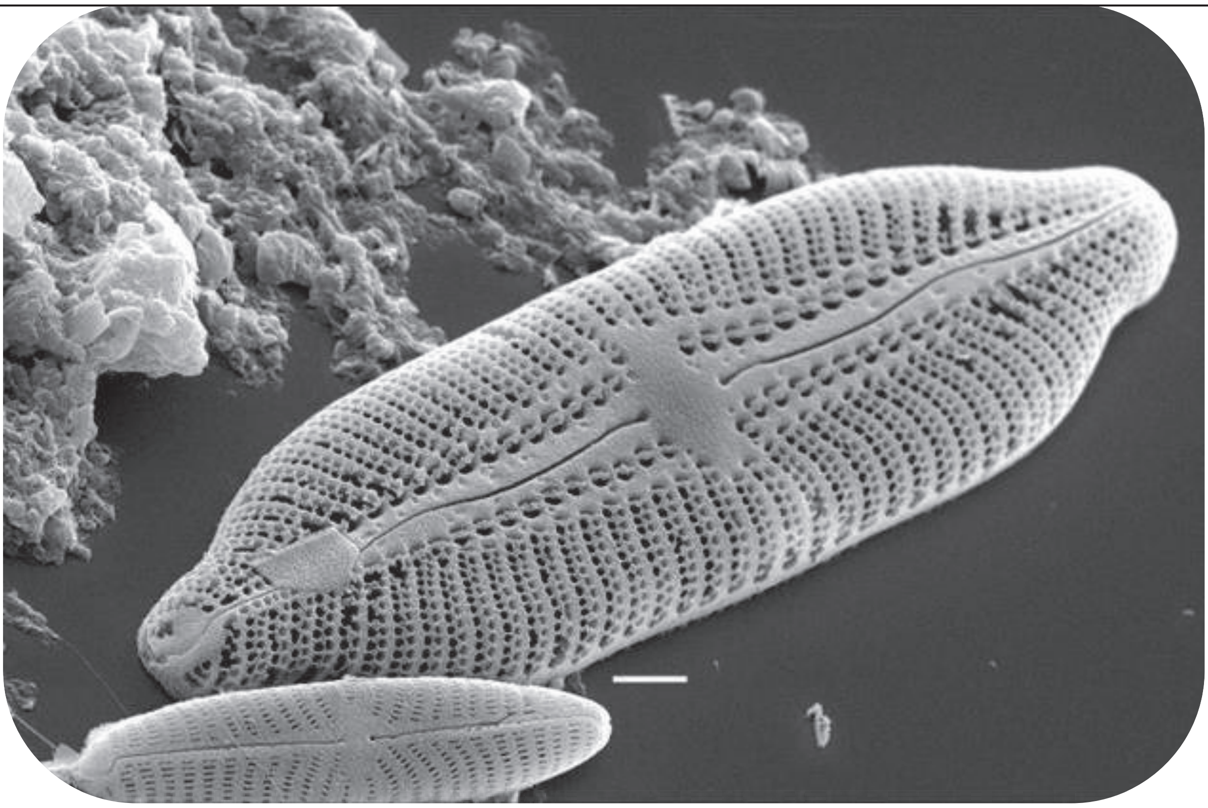
(Licence Update)

Report #: 2409/20/105
Proposal #: Min 24_137

Version 3

Prepared by: Minrom Consulting (Pty) Ltd | **Primary Author:** Graham Duncan

Prepared for: Strata Africa Exploration (Pty) Ltd | **Report date:** 2024/09/30



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Other Minrom Reports for this Project	
Previous Reports	0
Previous Report Versions	N/A

Declaration

This report titled “Strata Africa Exploration – Diatomite Literature Review & Target Generation on Prospecting Right Nc30/5/1/1/2/13826 PR” was prepared by Minrom Consulting (Pty) Ltd for the client, Strata Africa Exploration (Pty) Ltd , by the following authors:

REPORT SECTION	RESPONSIBLE PERSON	SIGN-OFF	DATE
Entire Report	Graham Duncan BSc Hon. *Cum Laude* (Geology) Cit. Geostats, PGDip BMA. Pr.Sci.Nat., M.GSSA, M.SAIMM		2024/09/30

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Minrom has not been engaged to comment on any legal matters. Minrom has noted that it is not qualified to make legal representations regarding the ownership and legal standing of the Project’s tenure. Minrom has not attempted to confirm the legal status of the tenement beyond the information which is public information published on the mining cadastre, nor has Minrom attempted to confirm the legal status of the tenement with respect to acquisition or joint venture agreements, permits, local heritage or potential environmental or land access restrictions.

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EXECUTIVE SUMMARY

Minrom Consulting (Pty) Ltd was requested by Strata Africa Exploration (Pty) Ltd (the "Client") to evaluate the mineralisation potential and identify exploration targets for diatomite within Prospecting Right (NC30/5/1/1/2/13826 PR) which consists of seven (7) farm portions (farms Botha 313, Devon 277, Bermolli 583, Engelsdraai 221, Witdraai 204, Vaalwater 84, and Farm 570) located between the Hotazel and Postmasburg areas in the Northern Cape Province of South Africa.

The project region is well-known for iron and manganese mineralisation with several large mining operations in the vicinity of the project farms. However, the target project farms also form part of the historically defined Kuruman-Kalahari diatomite field which is known to have some economic diatomite deposits. According to Strydom (2001) one of the farms within the Prospecting Right (Witdraai 204) has an identified diatomite deposit which was discovered in 1890 and was both explored in detail and subsequently mined for diatomite. Historical records indicate a resource of up to 80 000 tonnes being reported with approximately 30 000 tonnes remaining within the farm boundaries.

The diatomite mineralisation potential for each farm portion was therefore assessed through a combination of the following:

- Geological data review and interpretation of open access (public domain) data
- Incorporation of the clients site visit data and sample grades
- Development of the specific mineralisation model
- Application of the mineralisation model to advanced remote sensing techniques
- Probabilistic target generation (including leveraging machine learning techniques)

It was concluded that all the PR farms are highly prospective for diatomite with a total of eleven (11) high probability target areas being defined. These targets were ranked according to prospectivity, potential size, potential grade of the diatomite, and accessibility. The ranked targets are shown below:

Farm	Target ID	Diatomite Presence Confirmed	Sampled	Est. Grade (% SiO2)	Target Surface Area (m^2)	Ranking
Vaalwater 84	STA10	Yes	1 sample (K6101) and continued field investigation	81.13	1 339 987	**1**
Farm 570	STA12	Yes	69 samples	77.00	442 111	**2**
Engelsdraai 221	STA05	Yes	1 sample (K6106)	83.15	4 231 912	**3**
Bermolli 583	STA06	Yes	2 samples (K6102, K6103)	76.73	4 300 270	**4**
Witdraai 204	STA07	Yes	2 samples	78.10	5 240 068	**5**

			(K6109, K6110)			
Botha 313	NTA01	Yes	4 samples (K6104, K6105, K6107, K6108)	59.80	2 193 732	**6**
Botha 313	NTA02	No	No	Unknown	346 549	**7**
Botha 313	NTA03	No	No	Unknown	388 579	**8**
Botha 313	NTA04	No	No	Unknown	789 989	**9**
Vaalwater 84	STA08	No	No	Unknown	2 281 184	**10**
Vaalwater 84	STA11	No	No	Unknown	668 815	**11**
Vaalwater 84	STA09	No	No	Unknown	341 105	**12**

* Estimated grade (Est. Grade) obtained from available client sample data (unverified by Minrom)

These ranked targets indicate excellent potential for diatomite and the preliminary site samples prove the presence of diatomite mineralisation, however, the size and grade of the deposits will need to be determined. Since diatomite deposits are by nature generally small deposits, the quality and thickness of mineralisation are critical in determining the economic viability.

Therefore, Minrom concluded that since diatomite is a globally small, but growing market, with some potential local offtakes in South Africa, the deposit is highly prospective and should be further investigated. Minimal exploration is required for the next stage with only mapping, sampling, minor pitting, and some diatomite quality testing being suggested by Minrom as the exploration strategy. The results from this next stage of exploration field work can be used to estimate the potential grade and tonnes of the diatomite deposits and therefore be used to develop a conceptual economic assessment as to the feasibility of mining these diatomite deposits.

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1 INTRODUCTION

1.1 Purpose of this Report

Minrom Consulting (Pty) Ltd was requested by Strata Africa Exploration (the “Client”) to assist in evaluating the mineralisation potential for diatomite within Prospecting Right (NC30/5/1/1/2/ 13826 PR) which consists of seven (7) farm portions located between the Hotazel and Postmasburg areas in the Northern Cape Province of South Africa.

The diatomite mineralisation potential for each farm portion was assessed through a combination of geological data review and interpretation of open access (public domain) data, as well as by including information that is exclusive to Minrom’s internal archives. Advanced remote sensing techniques were also used to generate target areas for further exploration to quantify the mineralisation.

This report aims to position the Client on the mineral potential for each farm and rank the exploration targets from highest potential to lowest potential.

1.2 Project Location & Description

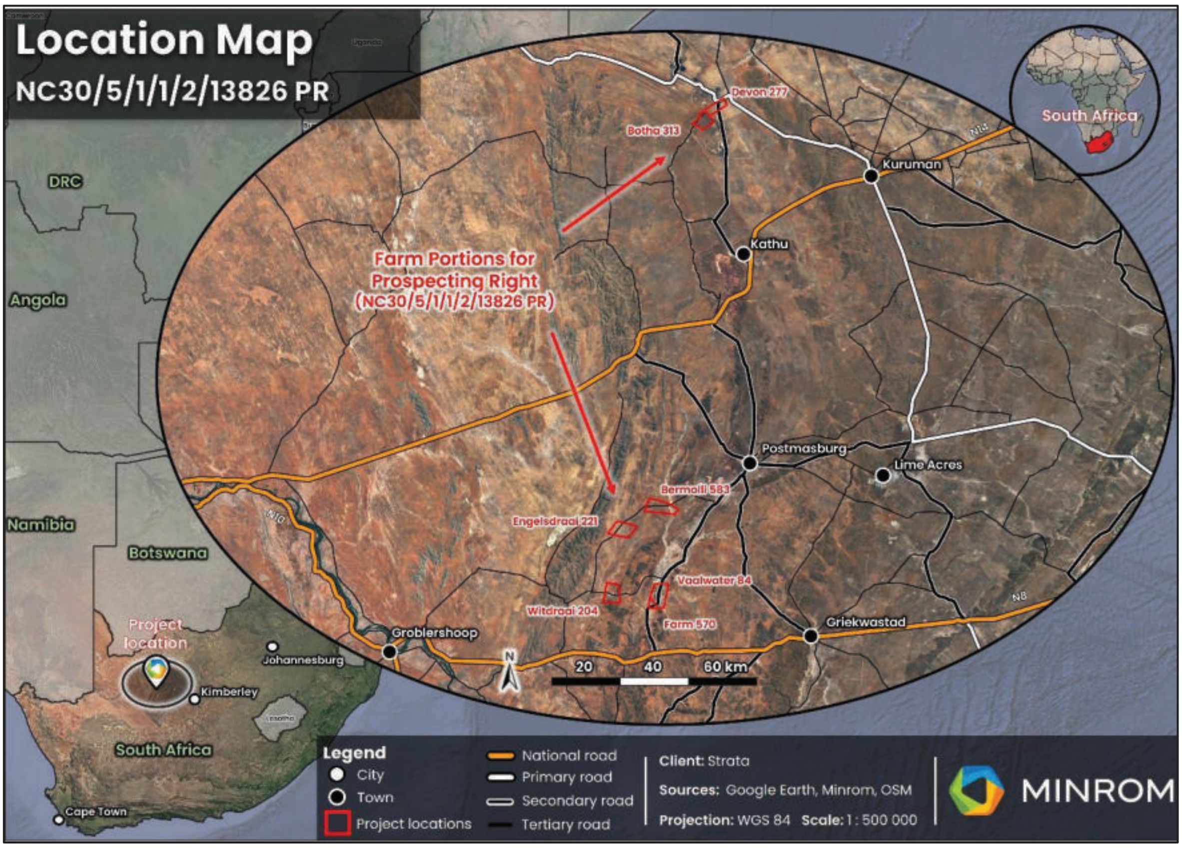

Figure 1: Project location map.

The project consists of one (1) Prospecting Right (NC30/5/1/1/2/ 13826 PR) which contains seven (7) farms. Five (5) of the farms are located south of the town of Postmasburg in the Northern Cape Province, South Africa, while the remaining two (2) farms are located immediately adjacent to the town of Hotazel, also in the Northern Cape Province, South Africa.

Farms Botha 313 and Devon 277 can be accessed via the tarred R31 road which connects Hotazel to Kuruman, as well as the R380 which runs through the Devon 277 farm and connects Hotazel with Kathu. The licences are approximately 18.4 km south of the town of Hotazel.

Farms Bermolli 583 and Engelsdraai 221 can be accessed via the tarred R383 road that runs from Postmasburg to the N8 national road, and an unnamed graded vehicle track approximately 18.5 km from Postmasburg at the town of Swartkoppies. These farms are approximately 33 km by road from Postmasburg and are located between Swartkoppies and Witsand.

Farm Witdraai 204 is located approximately 70 km from Postmaburg, south on the R383 and is also approximately 5 km east of the village of Plaatjesdam. Farms 570 and Vaalwater 84 can be accessed directly from the R383 road which cuts through the farm approximately 50 km south of Postmasburg.

The terrain and physiography of the different farm areas are generally similar with the majority being flat laying with small ridges located on Witdraai 204 and small dams/vlei (pan) located on farms 570, Vaalwater 84 and Bermolli 583. The area is highly arid and therefore most of the farms are covered in Kalahari sand, which limits the bush and vegetation to small shrubbery and grasses. All the farms can be accessed year-round for exploration.

1.3 Mineral & License Tenure

The prospecting right for the six (6) farms is NC30/5/1/1/2/13826 PR. The regulation 2.2 map which was provided by the client (Appendix 8.3) does not state which commodities the PR is valid for, nor the validity period.

Table 1: List of Farms under NC30/5/1/1/2/13826 PR

PR Number	Farm Name	Farm/portion Number (#)	Municipality/ District
NC30/5/1/1/2/ 13826 PR	Botha 313	Remaining Extent of the farm Botha & Portion 1	Kuruman
	Devon 277	Remaining Extent of the farm Devon & Portion 1	Kuruman
	Bermolli 583	Portion 4 & 5	Hay
	Engelsdraai 221	Remaining Extent of the farm Engelsdraai & Portion 1	Hay
	Witdraai 204	Remaining Extent of the farm Witdraai & Portion 1	Hay
	Vaalwater 84	Remaining Extent of the farm Vaalwater, Portion 1 & 2	Hay
	Farm 570	Remaining Extent of the farm 570	Hay

1.4 Information Basis for this Report

Client Provided Data

The following data was provided by the client for this proposal:

Data	Data Format
Regulation 2.2 Map for Prospecting Right NC30/5/1/1/2/13826 PR	pdf
Regulation 2.2 Map for Farm 570	pdf

Other Material Data Sources

The majority of the data employed in this literature review and target generation was obtained from open-source geological literature, regional geological mapping, and satellite spectral imagery.

2 PROJECT HISTORY & ADJACENT PROPERTIES

2.1 Summary of Project History

Little to no historical exploration data could be obtained for the properties encompassed within Prospecting Right NC30/5/1/1/2/13826 PR, with the exception of the farm Witdraai 204 which is historically known as having a diatomite deposit. According to Strydom (2001) the Witdraai 204 diatomite deposit was identified in 1890 and was explored in detail. Following the exploration the deposit it was determined to be of economic size and grade, and was intermittently mined with the product initially sold to Diatomatious Earth Technology (Pty) Ltd.

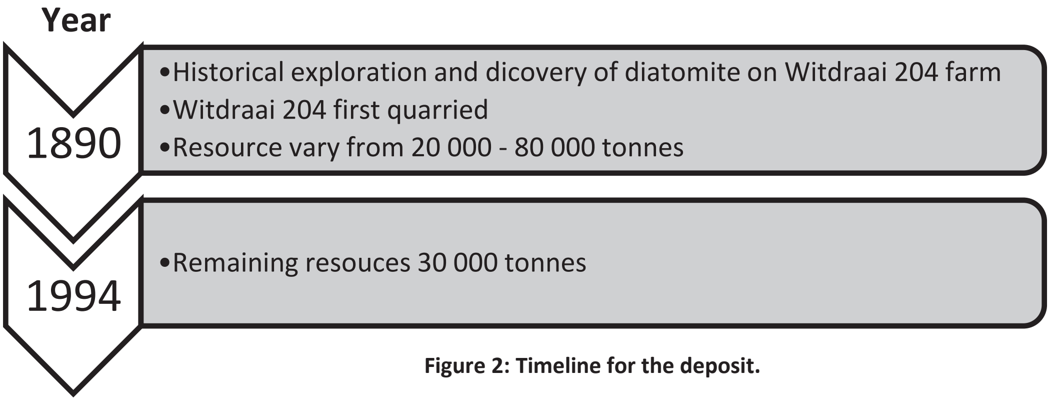

Figure 2: Timeline for the deposit.

The quantity of the material mined at Witdraai 204 is not known, however, in 1994 it is recorded that around 30 000 tonnes of diatomite remained within the deposit (Strydom, 2001). The grade of the silica and the permeability (quality of the product) were not recorded; however, a borehole on the Witberg 190 farm reported amorphous silica samples of between 40 – 94.28% SiO_2, with an unknown thickness.

Although undocumented, satellite imagery analysis shows what appears to be a series of exploration drill holes which were drilled on the Witdraai 204 farm (Figure 3). No record of these drill holes is available in any open-source repositories and therefore the extent of the deposit is still unknown. It can nevertheless be inferred that the results did not indicate economic mineralisation, however, this should be confirmed with field work.

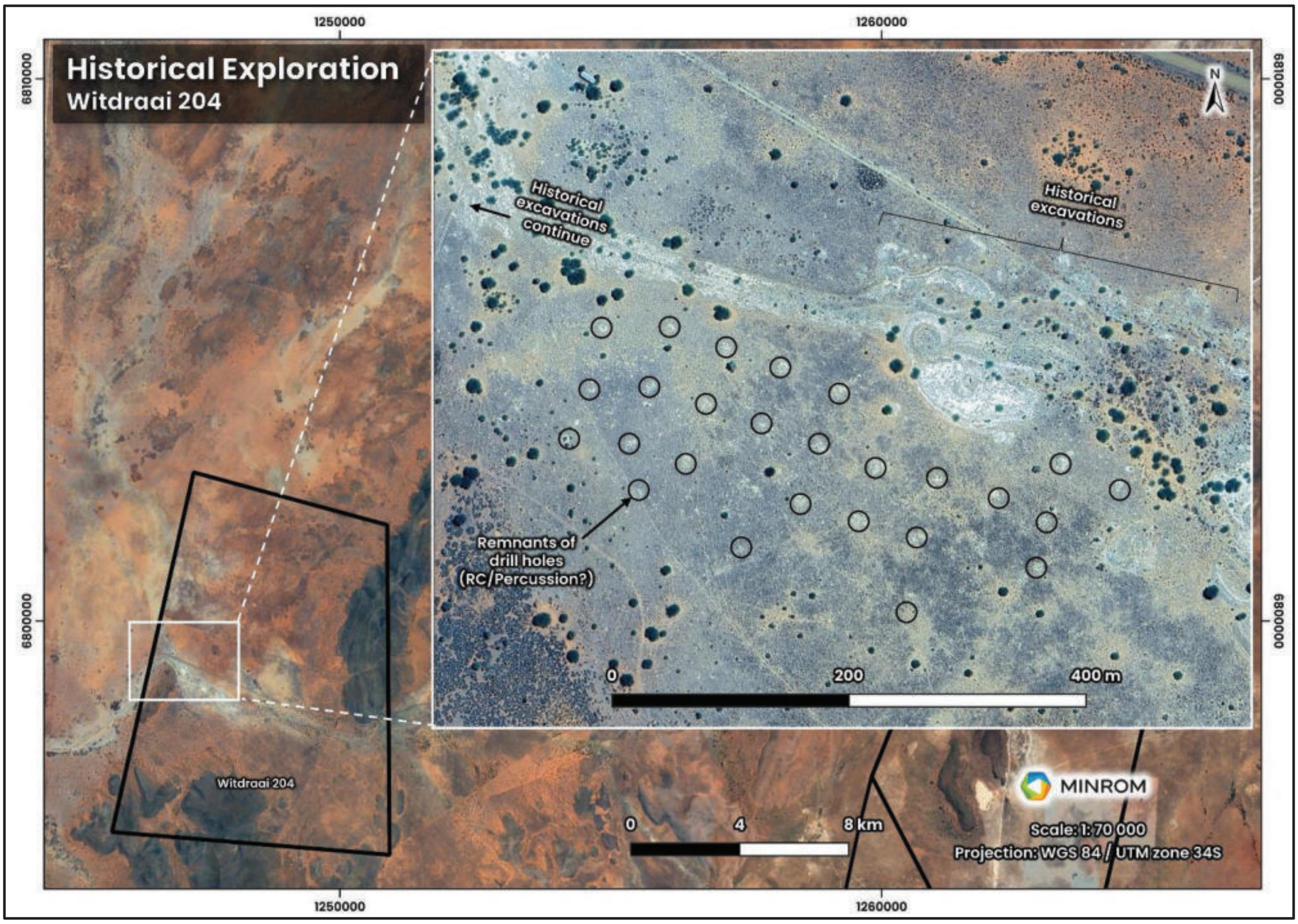

Figure 3: Evidence of historical exploration on Witdraai 204.

2.2 Summary of Adjacent Properties

The project area spans approximately 165 km, from North to South, between the different Farms under investigation and thereby includes almost the entire Postmasburg and Kalahari Iron and Manganese Fields (KMF and PMF). Numerous deposits and several mining operations surround the northern farms of the prospecting right (Farms Botha 313 and Devon 277) however, these are all manganese mining operations that are focused on the shallow thrust related manganese deposits, as well as several operations which are targeting the deeper underground manganese mineralisation. The Botha 313 farm includes a portion of the farm that has mining waste dumps from the Sebilo Resources open-cast manganese operation, while the farm Devon 277 includes a portion along the northern corner which actually extends into the mining pit of the Devon Mine open-cast operation.

Towards the south, the target farms of the prospecting right (Farms Bermolli 583, Engelsdraai 221, Witdraai 204, Vaalwater 84, and Farm 570) are more proximally located next to the iron mineralisation associated with the Postmasburg iron fields. There are no major mining operations directly adjacent to these southern farms, with the closest operation being the open-cast Kolomela iron ore mine approximately 20 km away.

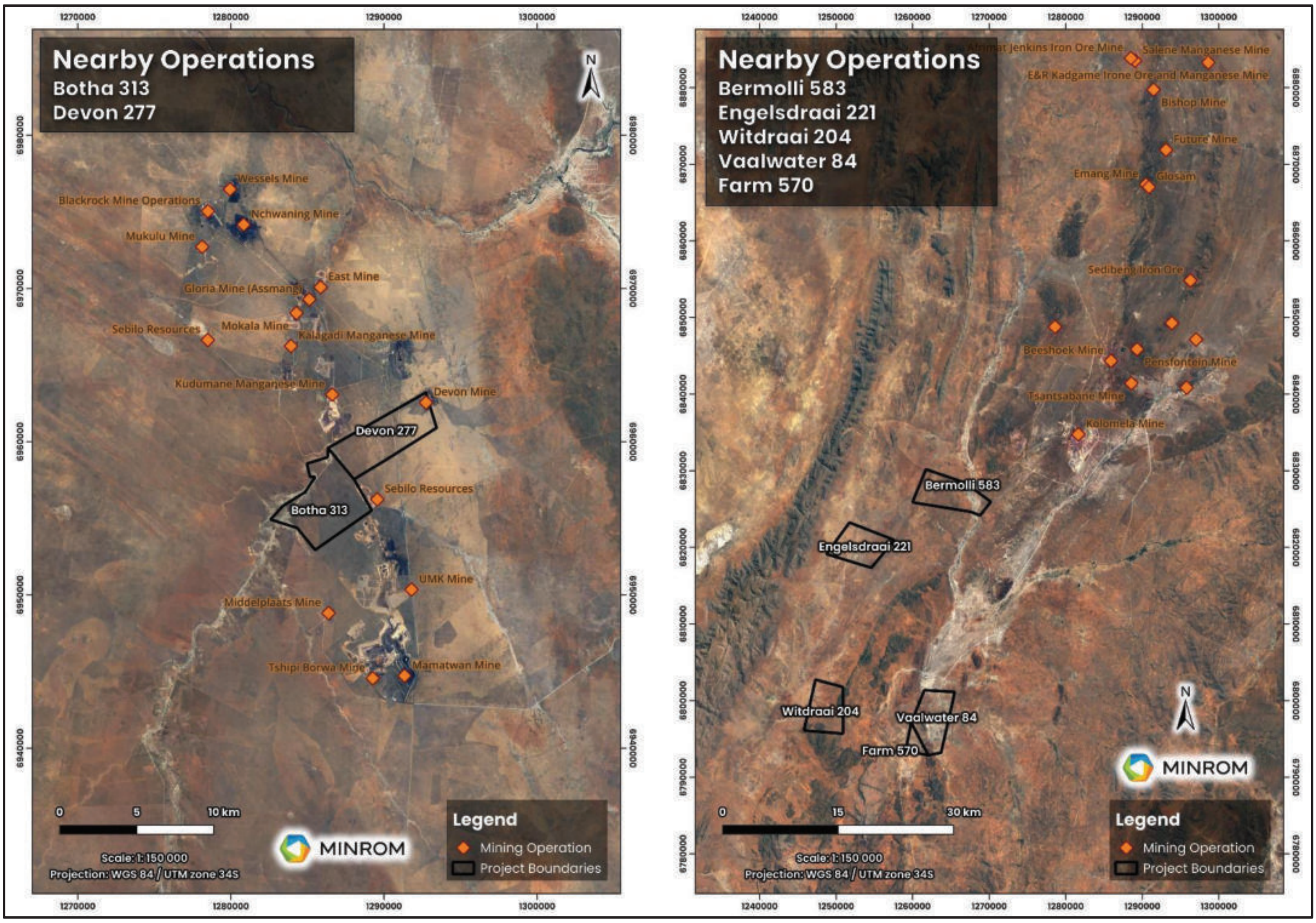

Figure 4: Nearby mining operation to the project area.

No current or known mining for diatomite occurs anywhere near these target farms of the prospecting right. Minor excavations are evident from the satellite imagery in the region surrounding the target farms, however, these are not registered as mining operations and are likely borrow pits or other minor surface excavations from agricultural or infrastructure development activities.

The only registered mining operation for diatomite in South Africa currently is the Rossville-Erith Mine, located along the N14 between Olifantshoek and Upington, which is approximately 80 km from the farms of this Project. The mining operation is owned by SA Diatomite and is registered as operating out of the nearby town of Kathu.

3 TECHTONIC SETTING

3.1 Regional Geology

The Transvaal Supergroup is a widespread package of protobasinal[1] volcano-sedimentary rocks covering vast areas of the Limpopo, Gauteng, Free State, North-West and Northern Cape Provinces of South Africa. The Transvaal Supergroup is Neoarchean - Paleoproterozoic in age, being deposited between 2.8 – 2.1 Ga[2], atop older Archean basement rocks. The rocks of the Transvaal Supergroup are in turn overlain by the world-renown Bushveld Igneous Complex (BIC) – the largest intrusive body on earth, containing substantial proportions of the world's Platinum Group Element (PGE) and iron, titanium, chromium, and vanadium mineralisation.

The rocks of the Transvaal Supergroup are preserved in three (3) major structural basins; the Griqualand West, Transvaal and Kanye basins (Figure 5). The Griqualand West basin is of relevance to the Strata Diatomite Project and contains rocks of the Ghaap and Postmasburg Groups. The Transvaal Basin contains rocks of the Chuniespoort and Pretoria Groups, while the Kanye Basin in Botswana contains rocks of the Taupone and Segwagwa Groups. The correlation between the stratigraphy of the various groups within the Transvaal and Griqualand West basins is illustrated in Figure 5.

The Griqualand West basin is further subdivided into the Prieska and Ghaap Plateau sub-basins. There is a 2.6 Ga basal unconformity in both sub-basins where the Ventersdorp lavas and Vryburg Formation are unconformably overlain by the carbonate packages of the Campbell Rand Subgroup. These thick carbonate sequences are in turn overlain by the iron formations of the Asbestos Hills Sub-group and capped by the iron-bearing rocks of the upper Postmasburg Group (Gresse et al., 2012).

This regional scale geology (Figure 6) has formed the underlying rocks that make up the local and site geology (Figure 6), however, the geological history is only of limited benefit to identifying diatomite mineralisation, as all the known diatomite deposits in South Africa are of much younger genesis and occur between 15 – 30 Ma. Therefore, the underlying geology of the region is only generally applicable to the project as it is responsible for the terrain and topographical features that influence the formation of diatomite, as well as providing the source silica for the formation of the diatomite in the Late Cretaceous / Tertiary periods.

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[1] Parental basin, with discrete basin fill
[2] Billion years ago

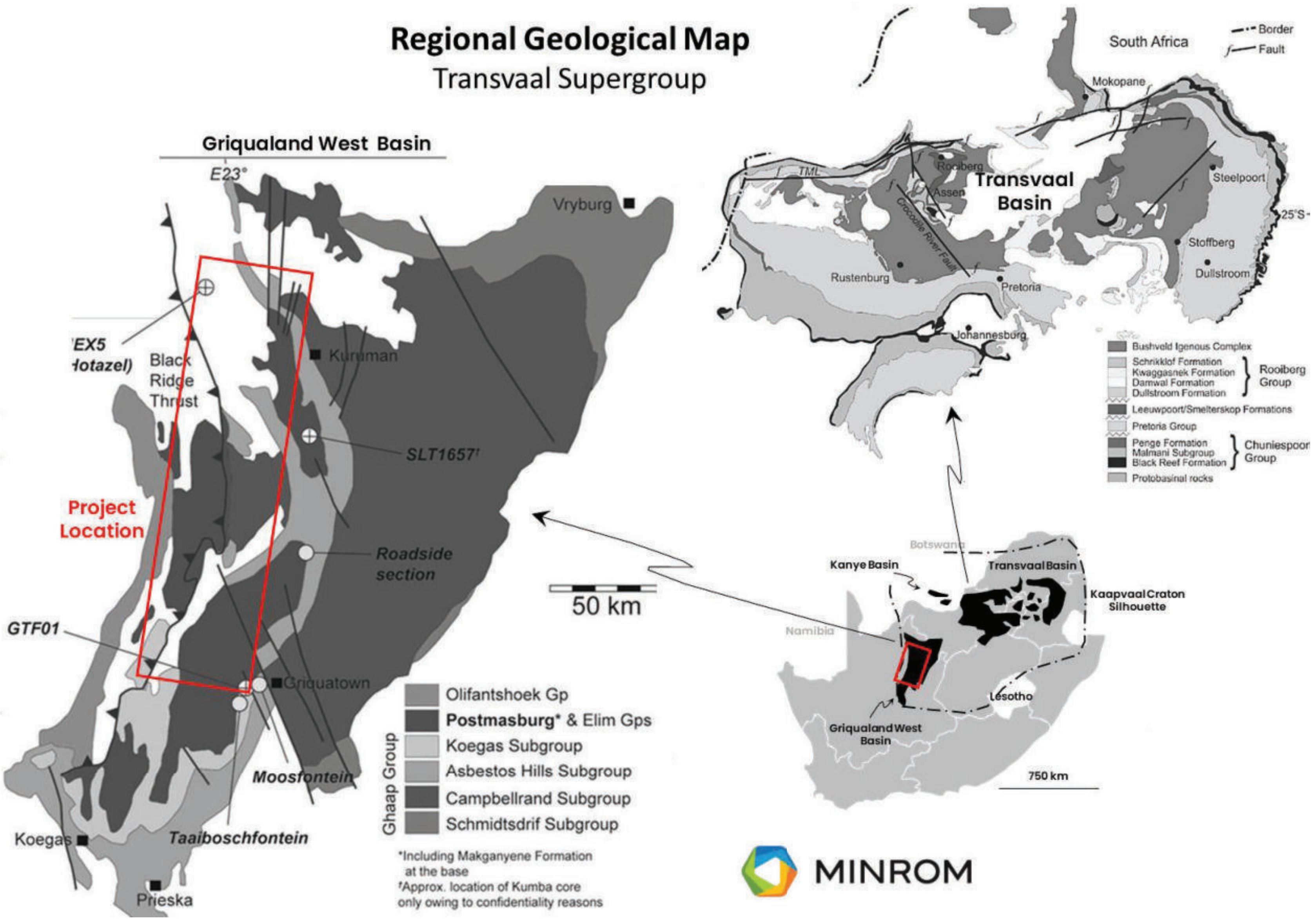

Figure 5: Regional Geological Map highlighting the Griqualand West Basin.

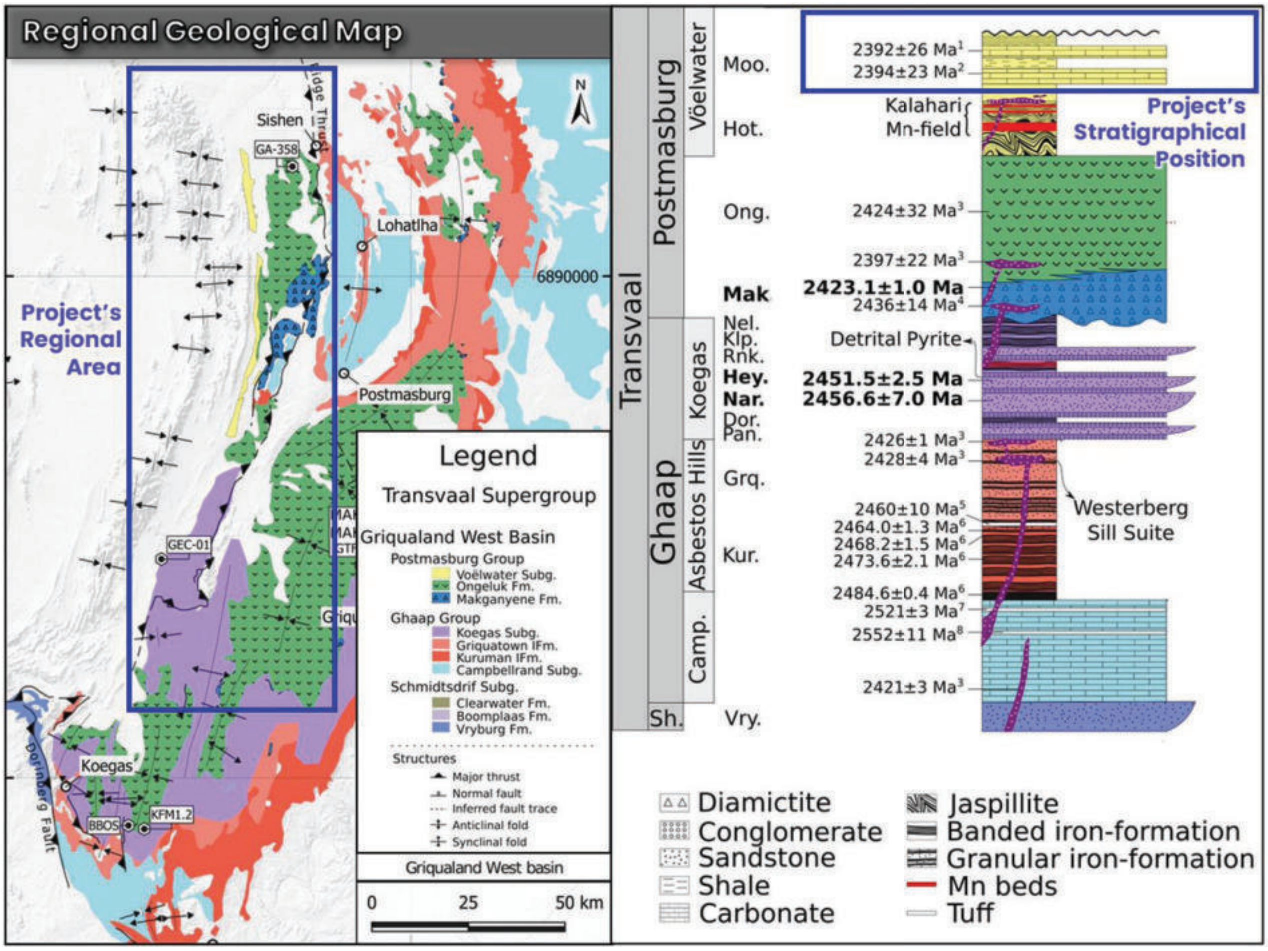

Figure 6: Regional geological map & stratigraphic column for the Griqualand West Basin. Adapted from Senger et al. (2023)

3.2 Local Geology

The Postmasburg Group within Griqualand West Basin is the most relevant to the project area and has stratigraphically been further subdivided into four (4) geological formations (Figure 6) with the following characteristics:

- **The Makganyene Formation** displays a complex history of glacial and marine sedimentation and is the oldest formation of the Postmasburg Group. It's base exhibits a mix of diamictites, iron formations, shales, and sandstones, suggesting a glacial origin followed by a transition to marine environments. The Makganyene interfingers with the underlying Koegas Subgroup, indicating a close relationship and challenging the previously proposed major unconformity between the Ghaap and Postmasburg Groups. Instead, the Makganyene appears to have acted as a boundary surface during a significant sea-level drop, transitioning to marine facies in the west and transgressing across older iron formations in the east. This revised understanding highlights the dynamic nature of the depositional environment and the need for further investigation in the context of diatomite exploration. (Moore et al, 2001).

- **The Ongeluk Formation** disconformity overlies the Makganyene Formation and formed part of the flood basalts which extend to the Kanye Basin of Botswana. The Ongeluk lavas are tholeiitic basaltic-andesite which consists of pillow lavas, hyaloclastites, massive flows and abundant textures relating to subaerial extrusion over the Makganyene Formation (Moore et al, 2001). The Ongeluk Formation includes a significant portion of basaltic andesite which by definition contains between about 52 and 63 weight percent silica (SiO_2). This silica along with the silica of the glacial sediments of the Makganyene Formation likely formed the source silica for the Quaternary diatomite deposits identified within the project areas.
- **The Hotazel Formation** directly overlying the Ongeluk lavas, displays striking similarities in composition and isotopic character to the iron formations found in the Asbesheuwels and Koegas Subgroups beneath the Makganyene Formation. This suggests a strong link between these formations, potentially indicating a recurring pattern of deposition within the Ghaap-Postmasburg succession. (Moore et al, 2001).
- **The Mooidraai Formation** is the youngest Formation of the Postmasburg Group and consists of a significant carbonate unit which caps manganese-rich Hotazel Formation. The lower section is dominated by carbonate rhythmites and slope breccias, likely deposited on a deep underwater slope, with occasional iron formations. The upper section transitions to shallower environments, with shelf and tidal flat deposits showing a progressive shallowing sequence capped by breccias indicative of very shallow water. This shift in facies, along with variations in thickness, suggests a dynamic sea level and a basin with significant variations in seafloor depth.

In the south of the project area erosional processes have exposed rocks of the Koegas Subgroup which represents the shallowing-upward portions of the depositional basin. This Subgroup consists of mixed siliclastic sedimentary deposits of shales, sandstones, quartzites and some stromatolitic carbonates. Some thin jasperoidal iron formations also occur within the local exposures of the Koegas Subgroup. These silica rich lithologies may also be a source of the silica for the diatomite deposits.

Although all of these formations are present within the project area the largest impact that these rocks have had on the formation of the diatomite is on the topography. The andesitic and basaltic lithologies of the Ongeluk Formation as well as the quartzites of the Koegas Subgroup and the Makganyene Formation commonly form the topographical highs and provide a source of the silica for the Quaternary diatomite deposits.

3.3 Site Geology

The site geology for each of the target farms is limited as there has not been any detailed geological mapping available in the public domain or with the South African Council for Geoscience. Based on the history of the deposits (Section 2.1) detailed exploration has been performed on the Witdraai 204, however, no site level exploration is known to have been performed on any of the other farms. The site geology has therefore been inferred from local scale geological mapping (Geological Survey, 1979).

The northern target farms of Botha 313 and Devon 277 are completely covered by aeolian sediment. The overlying material is commonly referred to as “Kalahari cover” and can consist of sandstones, shales, and conglomerates. These Neogene sediments unconformably overlay the deeper Hotazel banded-iron formations and manganese layers. Thrust-related surface occurrences of manganese mineralisation are common within the area as observed at Black Rock mine.

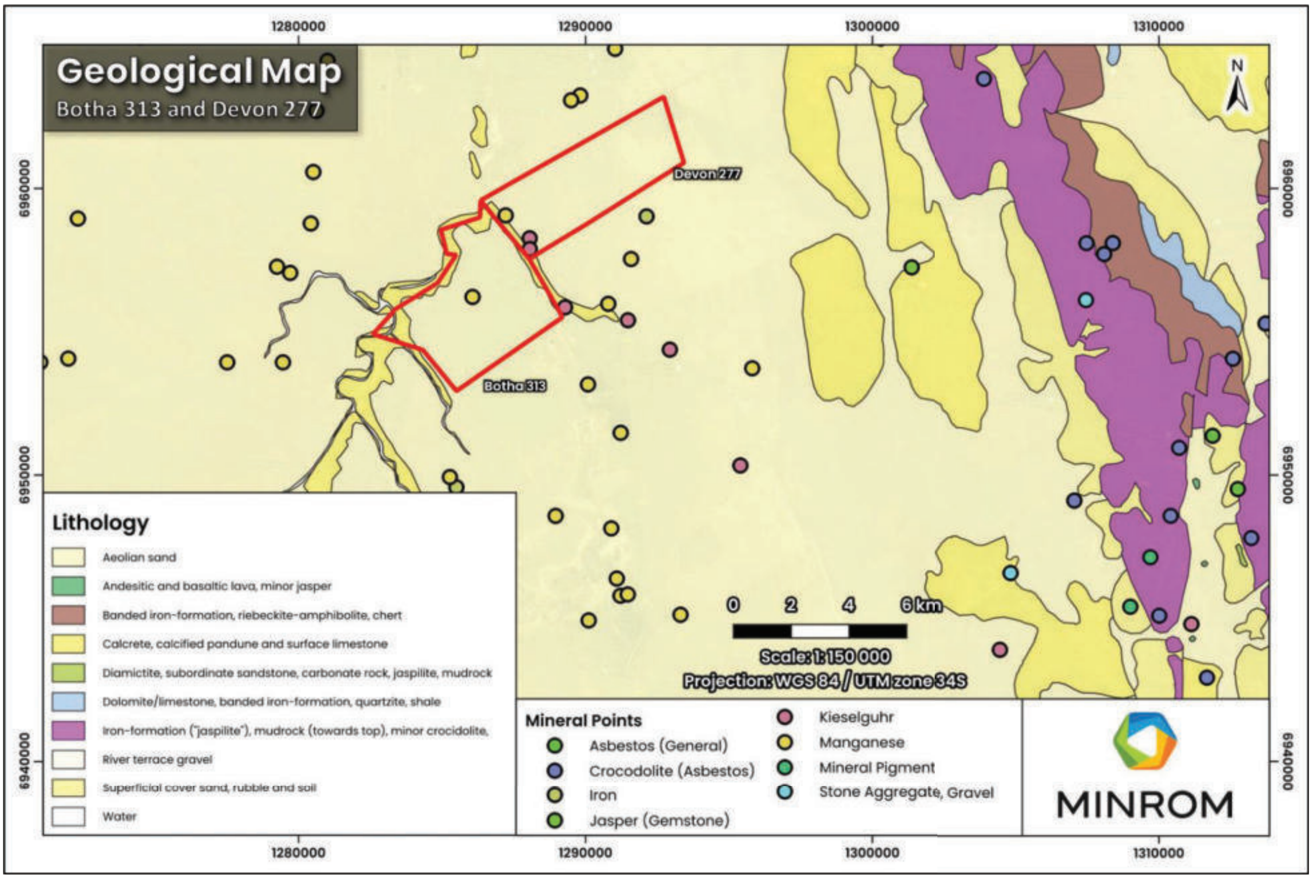

Figure 7: Northern Farms - local & site scale geological map.

The southern target farms Bermolli 583, Engelsdraai 221, Witdraai 204, Vaalwater 84, and Farm 570 are also predominantly covered by Neogene aeolian sands which unconformably overlay the older Postmasburg Group and the Olifantshoek Supergroup lithologies.

Witdraai 204 is underlain by Koegas Subgroup mudrocks, quartzite (quartz wacke), jaspilite, iron-formation, and dolomite. The nearby farms Vaalwater 84 and Farm 570 is almost completely covered with sand but is also underlain by the same Koegas Subgroup rocks.

Engelsdraai 221 is mostly covered by aeolian sands but the underlying geology consists of rocks of the Transvaal Supergroup (Makganyene Formation, Postmasburg Group) which locally presents as: diamictites, subordinate sandstones, carbonate rocks, jaspilite, mudrocks, cherts and conglomerates. Additionally, some Olifantshoek Supergroup lithologies of the Lucknow Formation have been noted within the farm and present as quartzite, flagstone, shale, and dolomitic limestone.

Bermolli 583 farm has a complete mix of all the aforementioned lithologies and is right over the contact between the Olifantshoek Supergroup and Transvaal Supergroup. However, the majority of the farm is likely underlain by the andesitic and basaltic lava of the Postmasburg Group (Transvaal Supergroup).

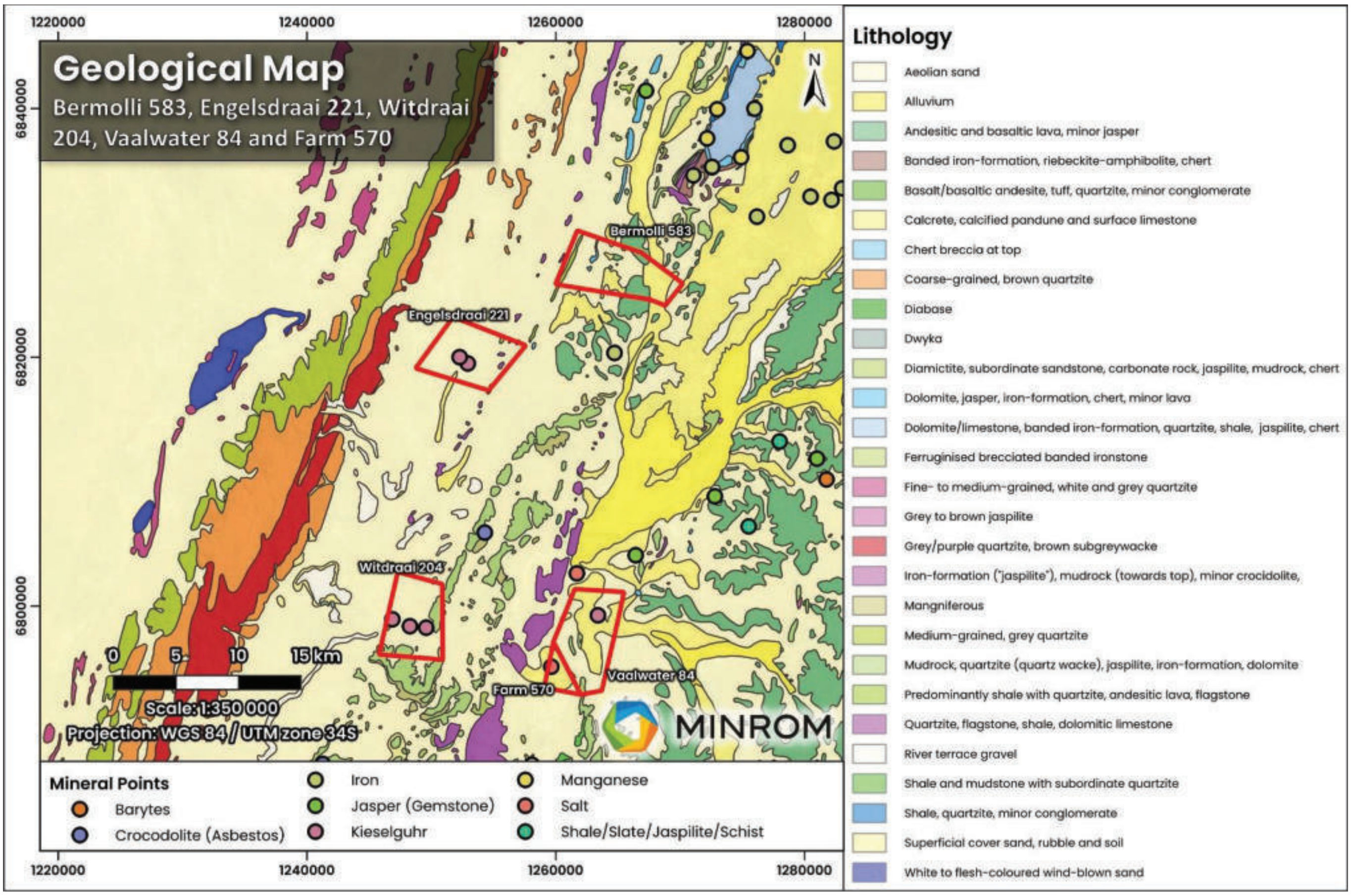

Figure 8: Northern Farms - local & site scale geological map.

3.4 Mineralisation Model

The mineralisation model aims to use regional, local, and site geology to determine the geological factors that have influenced the formation of the mineralisation of interest on all scales. Therefore, it is important to understand some basic properties of diatomite formation.

Diatoms are microscopic (100 - 500 µm) unicellular, floating aquatic plants (type of algae) that have opaline silica structures which are constructed from silica-rich water. The shell remains of these microscopic organisms collect over time under ideal conditions at the bottom of lakes, rivers, streams, vleis, etc., and form an insoluble siliceous layer which is called diatomite, kieselguhr, or diatomaceous earth.

According to Strydom (1986) the important conditions needed for diatom growth to form diatomite are:

- Low water temperatures (between 3 and 16˚C) - which inhibit bacterial activity, thus preventing acidification due to decomposition, as well as resulting in abundant dissolved oxygen and carbon dioxide which are essential to diatom growth.
- Slightly alkaline water - as acidic conditions suppress/dissolve the diatoms. High alkalinity is also not favourable as it limits diatom growth and is usually associated with a super abundance of lime, resulting in mixed carbonaceous sediment deposition.
- An adequate supply of silica (1 to 5 ppm content in the water) - Water with between 5 and 20 ppm silica may produce pure and highly concentrated diatomaceous deposits.
- Minor lime and magnesia availability - both of which are essential to diatom growth.
- Low phosphate and nitrate contents - which encourage the growth of diatoms instead of microalgae.

These conditions are commonly found in rivers and streams, spring-sourced vleis and marshes, and small ponds/pans. In South Africa the regions allowing for diatom growth are limited to the areas around the towns of Springbok, Kuruman (extending down towards Prieska and East into the Kalahari), and Polokwane (Pietersburg) as shown in Figure 9 below:

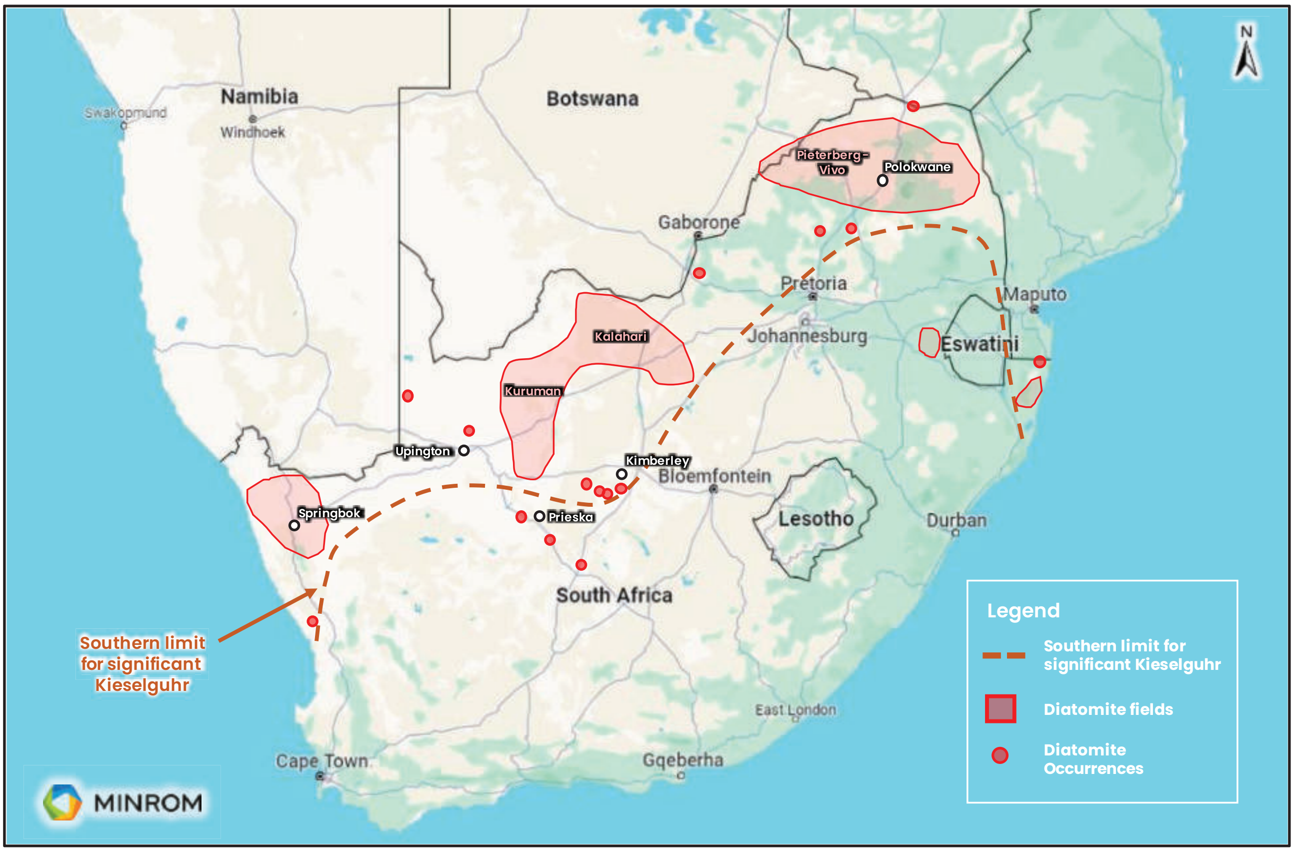

Figure 9: Diatomite field in South Africa. Modified after Strydom (1986).

The regional geology of the Griqualand West Basin presents both positive and negative aspects for diatomite exploration. The presence of shallow marine to lacustrine environments within the Postmasburg Group suggests the possibility of suitable ecological niches for diatom growth. However, the dominance of clastic sediments within the Campbell Group may limit the overall extent and purity of potential diatomite deposits. Furthermore, the complex tectonic history of the Namaqua-Land Fragment, including regional deformation events, can lead to the disruption and burial of potential diatomite deposits.

Regional geophysics is of little value in identifying these diatomite mineralisation occurrences due to the superficial nature of the deposits and the relatively small size of the average occurrence.

The regional and local structural geology has a limited impact on the formation of the diatomite deposits, as they are not structurally controlled, however, the drainage systems which affect the hydrological characteristics of the project area have an indirect influence on the diatomite mineralisation. Structural features such as fault zones and other zones of weakness commonly result in river and drainage systems, which in turn control the water available for diatomite formation.

Locally, the andesitic lithologies of the Ongeluk Formation as well as the quartzites of the Koegas Subgroup and the Makganyene Formation provide a source for the silica for potential diatomite deposits. These lithological units, however, do not directly influence the presence of diatomite as all known occurrences are Quaternary in age. Older diatomite deposits are typically eroded or metamorphosed through diagenesis into siliceous shales, porcelanite, or chert units when the diatom shell structures are recrystallised. Diatomite can therefore occur on top of any lithological unit, however, in line with the conditions needed for diatom growth as described by Strydom (1986) having a source of silica is not sufficient by itself. Therefore, the mineralisation model must include fluvial systems as well as climatic influences. The mineralisation model can be defined as follows:

- Silica is eroded from silica-rich lithologies and washed into slow moving fluvial systems.
- Silica is then naturally dissolved into solution.
- The silica is transported in a fluvial system to a location where diatoms can grow under ideal conditions.
- The accumulation of diatoms over an extended period (thousands of years) allows for the formation of measurable diatomite layers.
- There is limited erosion and limited accumulation of additional sediment (sands and muds).
- There are relatively constant climatic conditions over the depositional area to maintain optimal diatom growth and accumulation.

Diatomite in the project area is expected to occur in thin surface layers with a maximum thickness of between 15 to 20 m (Strydom, 1986).

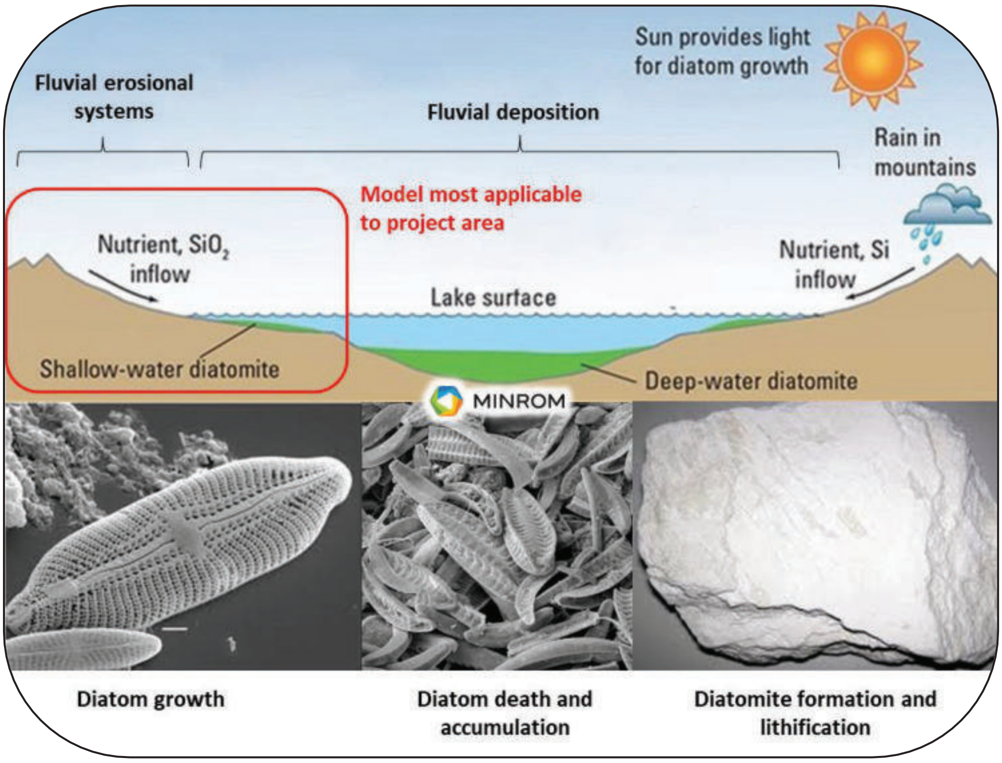

Figure 10: Diatomite mineralisation model.

Application of this mineralisation model to the target farms of the project area indicates a strong mineralisation potential, however, it is noteworthy that although the formation of diatomite is fairly common, commercial grades (i.e. deposits free from significant contaminants) and minable deposit sizes, are pointedly rarer.

4 MINERALISTAION POTENTIAL

4.1 Mineralisation Targeting

The project area consists of six (6) farms all of which are located within the regional prospective areas for diatomite formation. Taking into account the mineralisation model, the following multidisciplinary parameters have been identified and defined to target diatomite within the study area:

- **Geological**
    - Areas proximally located next to silica-rich mountains or ridges of the Makganyene or Ongeluk Formations of the Postmasburg Group, as well as the Lucknow Formation of the Olifantshoek Supergroup.
    - Areas north of the “Southern limit for significant Kieselghr” as defined by Strydom (1986).
    - Quaternary sediments.
    - Relatively stable geological terrains within the past 30 Ma.

- **Climatical**
    - Areas with a relatively consistent generally arid climate which frequently allows for fluvial and collect water to have low water temperatures.

- **Topographical**
    - Areas within relatively flat lying topographical areas.
    - Deposits need to be close to, or on top of, current or paleo-river, lake, dam, pond, or vleis.

A complicating factor in the pursuit of diatomite in general is that in many cases theses deposits are covered or masked by overlying sand or soil. This is especially true in the project area due to the wind-blown aeolian Kalahari sands that cover much of the Northern Cape region.

4.2 Remote Sensing (RS)

Remote sensing is a term used to describe the process of investigating a specific area without physically interacting with the formations or geology. In this case, remote sensing made use of the reflective light spectrum including near- and long-wave infrared light.

Due to the size of the project area, remote sensing was performed to identify exploration targets. Not all the factors defined in the mineralisation targeting could be considered due to limited data availability. Various open-source satellite imagery is available to the public, however, after processing the most useful data was derived from the ASTER satellite which records 14 bands that range from the visible spectrum at 0.52 µm to 11.65 µm (Satellite Imaging Corporation, 2023).

Reflective light remote sensing using satellite imaging works on the principle that all material absorbs and reflects electromagnetic radiation at different wavelengths. These satellites are equipped with various sensors that can detect electromagnetic radiation within specific bands. Normal visible light is made up of the red, green and blue colour bands. Combining bands of different wavelengths produces specific colour images referred to as false colour images. These images can be used to interpret and identify different characteristics related to specific electromagnetic radiation bands. A summary of the different bands representing reflective wavelengths for the ASTER satellite can be found below in Table 1.

Table 1: Spectral bands of the ASTER satellite.

Band	Resolution (m)	Reflected Range (µm)	Description
B01	15	0.52 - 0.60	Visible green/yellow
B02	15	0.63 - 0.69	Visible red
B03N	15	0.78 - 0.86	Visible and Near-Infrared

Band	Resolution (m)	Reflected Range (µm)	Description
B03B	15	0.78 - 0.86	Visible and Near-Infrared
B04	30	1.600 - 1.700	Shortwave Infrared
B05	30	2.145 - 2.185	Shortwave Infrared
B06	30	2.185 - 2.225	Shortwave infrared
B07	30	2.235 - 2.285	Shortwave infrared
B08	30	2.295 - 2.365	Shortwave Infrared
B09	30	2.360 - 2.430	Shortwave Infrared
B10	90	8.125 - 8.475	Thermal Infrared
B11	90	8.475 - 8.825	Thermal Infrared
B12	90	8.925 - 9.275	Thermal Infrared
B13	90	10.25 - 10.95	Thermal Infrared
B14	90	10.95 - 11.65	Thermal Infrared

ASTER satellite data was used due to its high reflected range, extending to nearly 12 µm. A visual representation of the different bands for ASTER, Landsat-8 and Sentinel-2 can be found below in Figure 11.

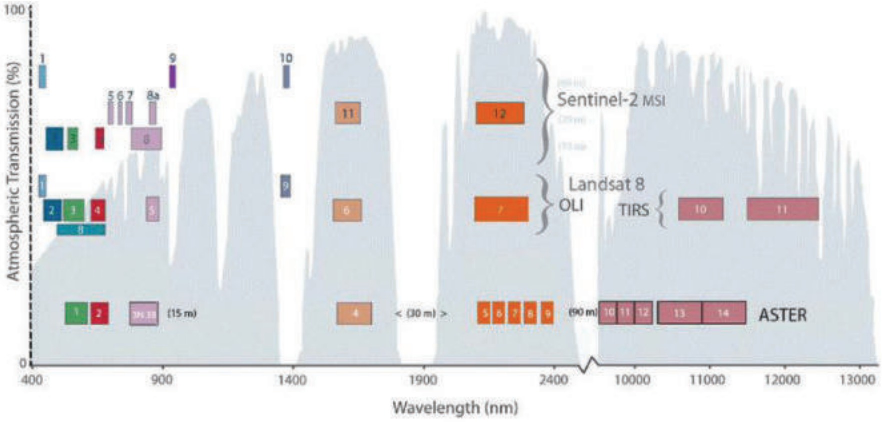

Figure 11: Comparison of ASTER, Landsat-8 and Sentinel-2 bands. Figure adapted from Ustin & Middleton, 2021.

ASTER Shortwave Infrared (SWIR) bands are unavailable since April 2008 due to an anomalously high SWIR detector temperature (LP DAAC, 2009). Due to this, the ASTER satellite imagery acquired is dated 2008/01/29.

4.2.1 Band Ratios Reasoning

A band ratio is created by dividing different bands of satellite images from each other and is a technique used to draw attention to specific desired spectral differences (Cardoso-Fernandes et al. 2019). Spectral characteristics of features in an image get enhanced by band ratioing, regardless of the variation in scene illumination (Shahi et al. 2022).

The presence of certain minerals is highlighted using band ratios, and it was applied in the following manner:

Table 2: Band ratios for ASTER.

ASTER Band Ratio	Feature
B14/B12	Quartz-rich rocks
B13/B11	Hydrous silica occurrences
B9/B7	Carbonates (limestones and dolomites)
B3/B2	Vegetation Index

The main feature selected for the remote sensing study was silica-rich lithologies in the area. The quartz-rich rocks, as well as hydrous silica occurrences, were identified as important features to highlight, and their band ratios were used to generate target areas for exploration. The vegetation index was used as a control to compare where the spectral analysis may be confused with the vegetation responses.

The higher wavelength ASTER bands were utilised to differentiate silicates from carbonates as the latter is generally spectrally characterised by strong vibrational absorption features found in the 8 – 14 µm (Rockwell and Hofstra, 2008). Landsat and Sentinel-2 satellite imagery would not be able to clearly indicate areas of high silicates and carbonates, as their bands only record until 2.29 µm. Additionally, the ASTER Thermal Infrared (TIR) data can efficiently be used to identify non-hydrous varieties of quartz that are not identifiable in the shortwave infrared (SWIR) data (Rockwell and Hofstra, 2008).

4.2.2 Application of Band Ratios

Using the band ratio B14/B12 and B13/B11 (see Figure 12 and Figure 13, respectively), the silica-rich areas are highlighted in red hues, while the blue hues highlight areas of low silica. Figure 12 indicates areas of quartz-rich rocks and Figure 13 indicates areas where hydrous silica occurs. These band ratios highlight the possible areas containing diatomite as diatomite is composed of mainly silica, along with minimal clay minerals and calcium carbonates. The high silica content has been used as an indicator or the presence of diatomite, however, it must be noted high silica does not directly mean there is diatomite mineralisation.

Comparing the band ratios with a vegetation index, it eliminates confusion in the remote sensing where possible areas of diatomite are confused with vegetation. A comparison of each band ratio is given for each farm boundary. Figures 14 to 18 were used to identify potential areas of diatomite, by correlating between the quartz-rich rocks, hydrated silica occurrences and the carbonated areas against the vegetation index.

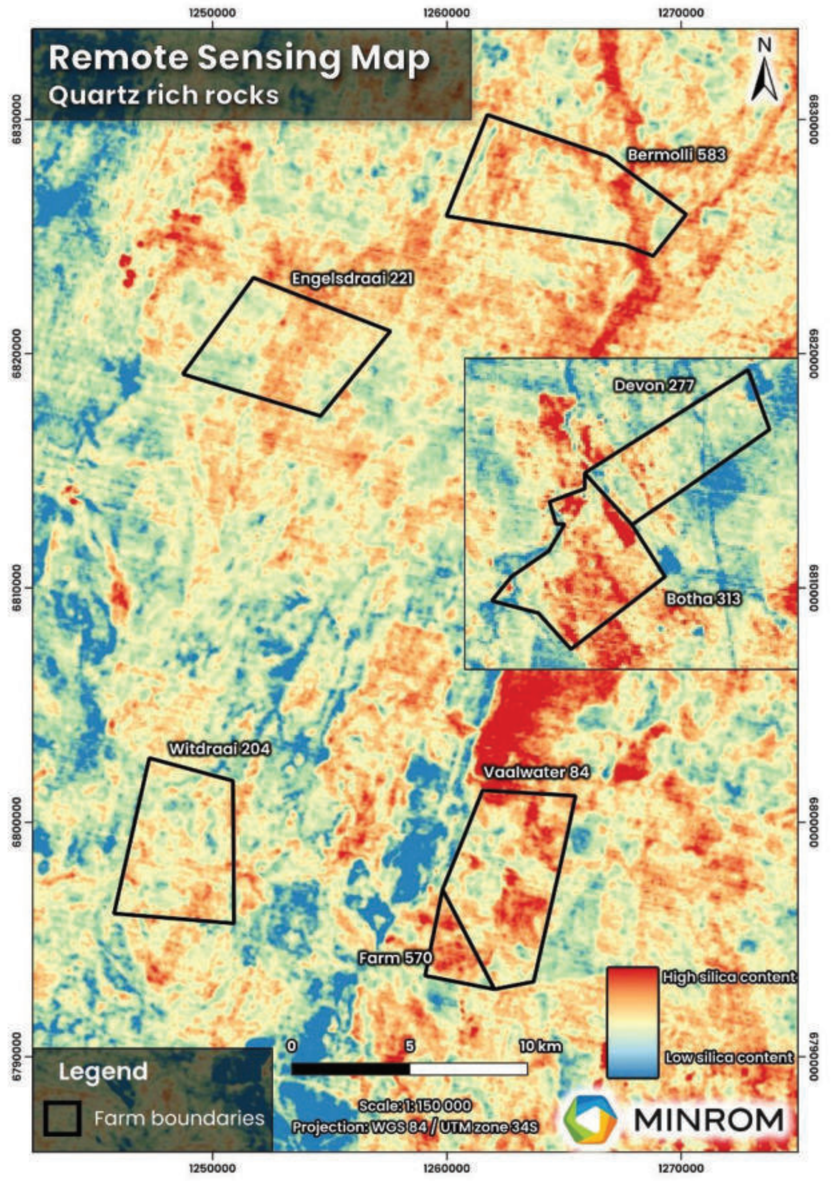

Figure 12: RS for Quartz

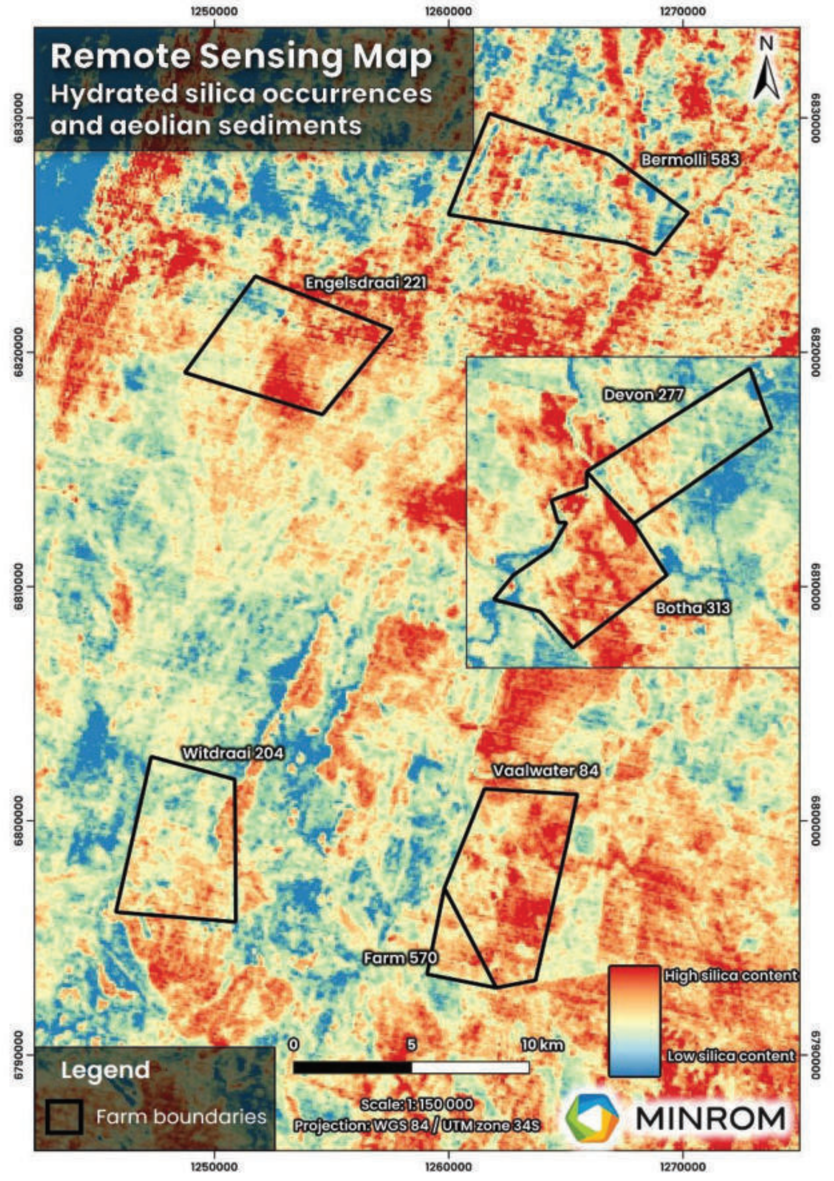

Figure 13: RS for Hydrated silica.

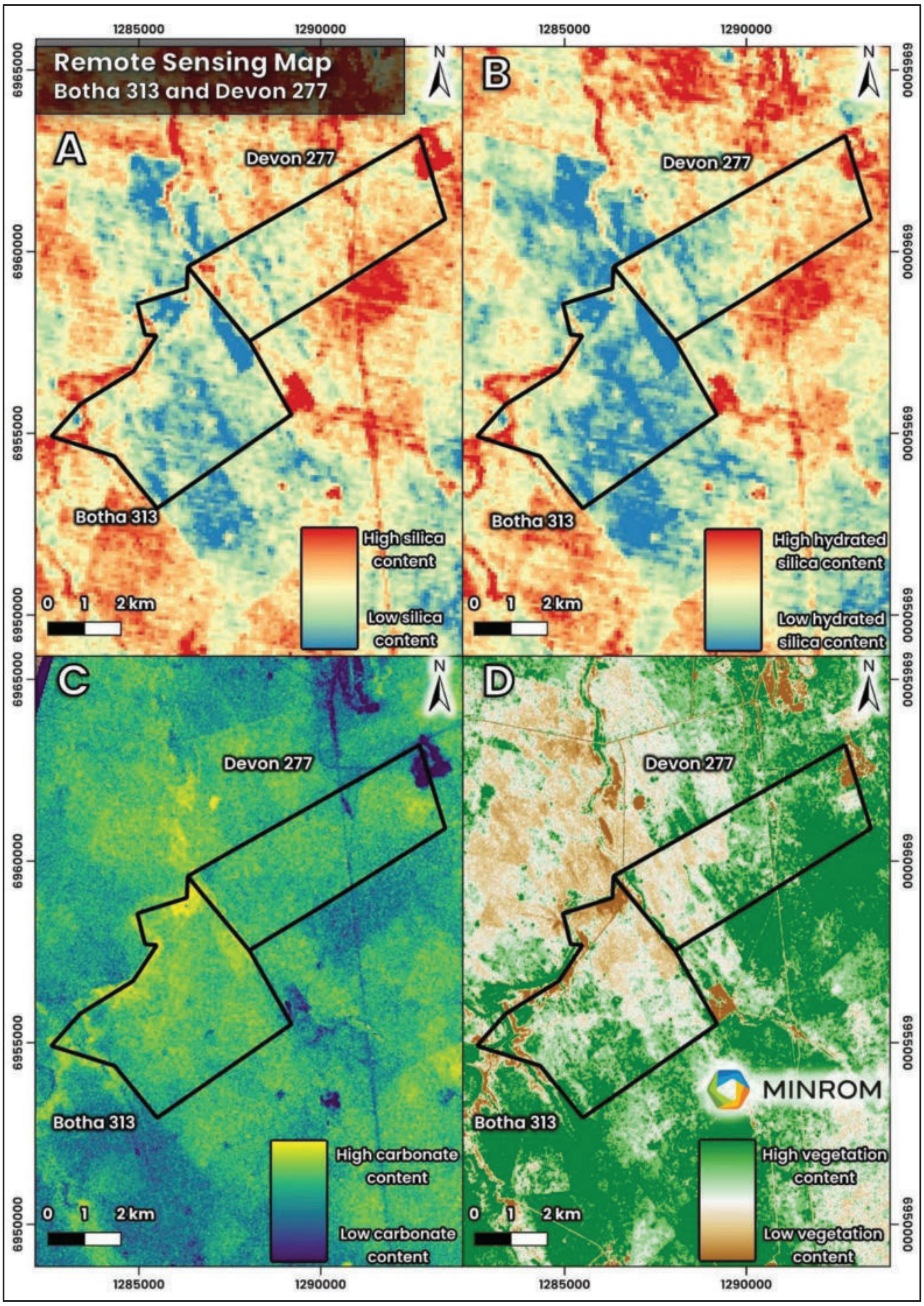

Figure 14: RS on farms Botha 313 and Devon 277.
(A) ASTER band ratio B14/B12 highlighting quartz-rich rocks.
(B) ASTER band ratio B13/B11 highlighting hydrated silica occurrences.
(C) ASTER band ratio B9/B7 highlighting carbonates.
(D) ASTER band ratio B3/B2 highlighting the vegetation.

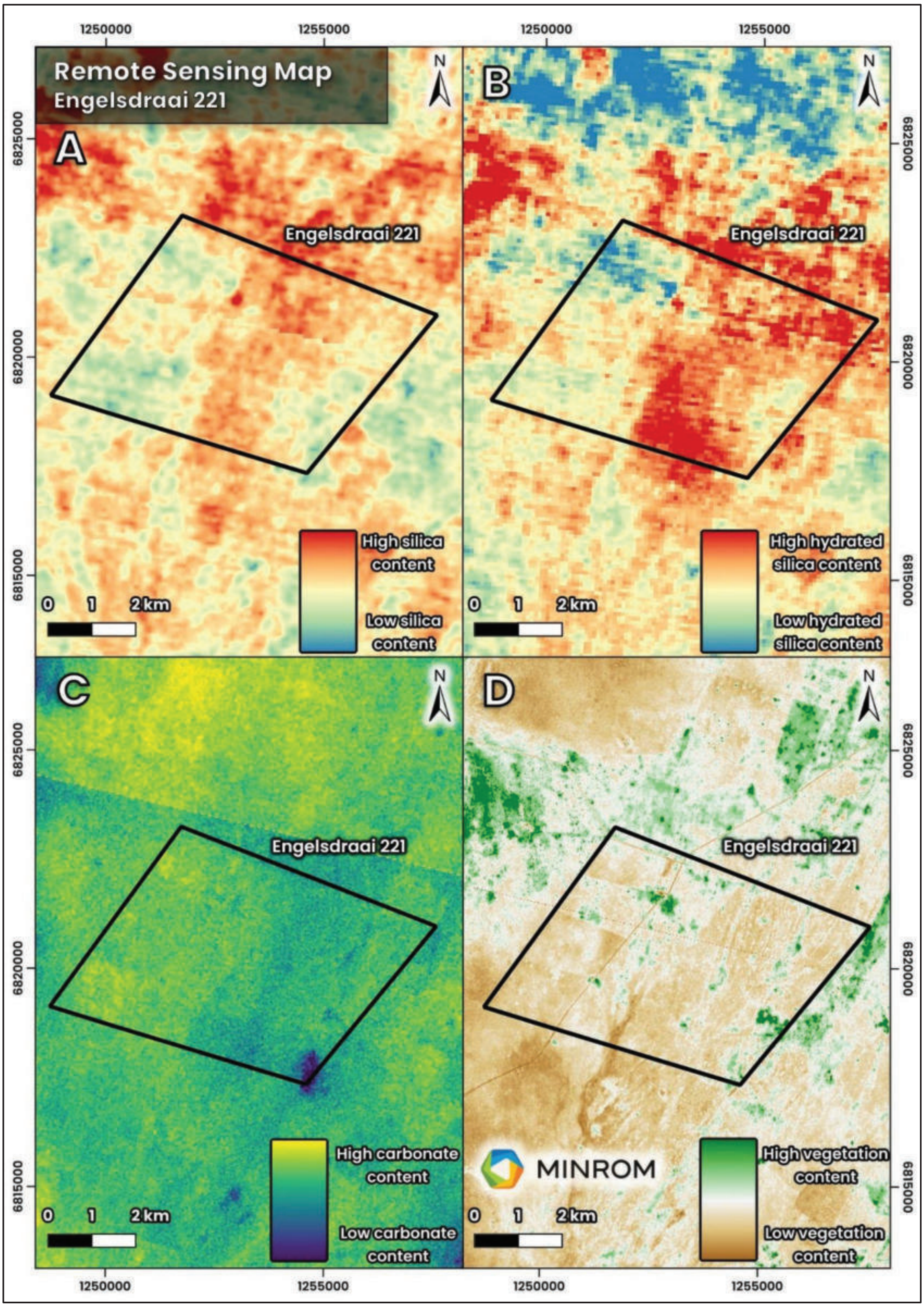

Figure 15: RS on Engelsdraai 221 farm.
(A) ASTER band ratio B14/B12 highlighting quartz-rich rocks.
(B) ASTER band ratio B13/B11 highlighting hydrated silica occurrences.
(C) ASTER band ratio B9/B7 highlighting carbonates
(D) ASTER band ratio B3/B2 highlighting the vegetation.

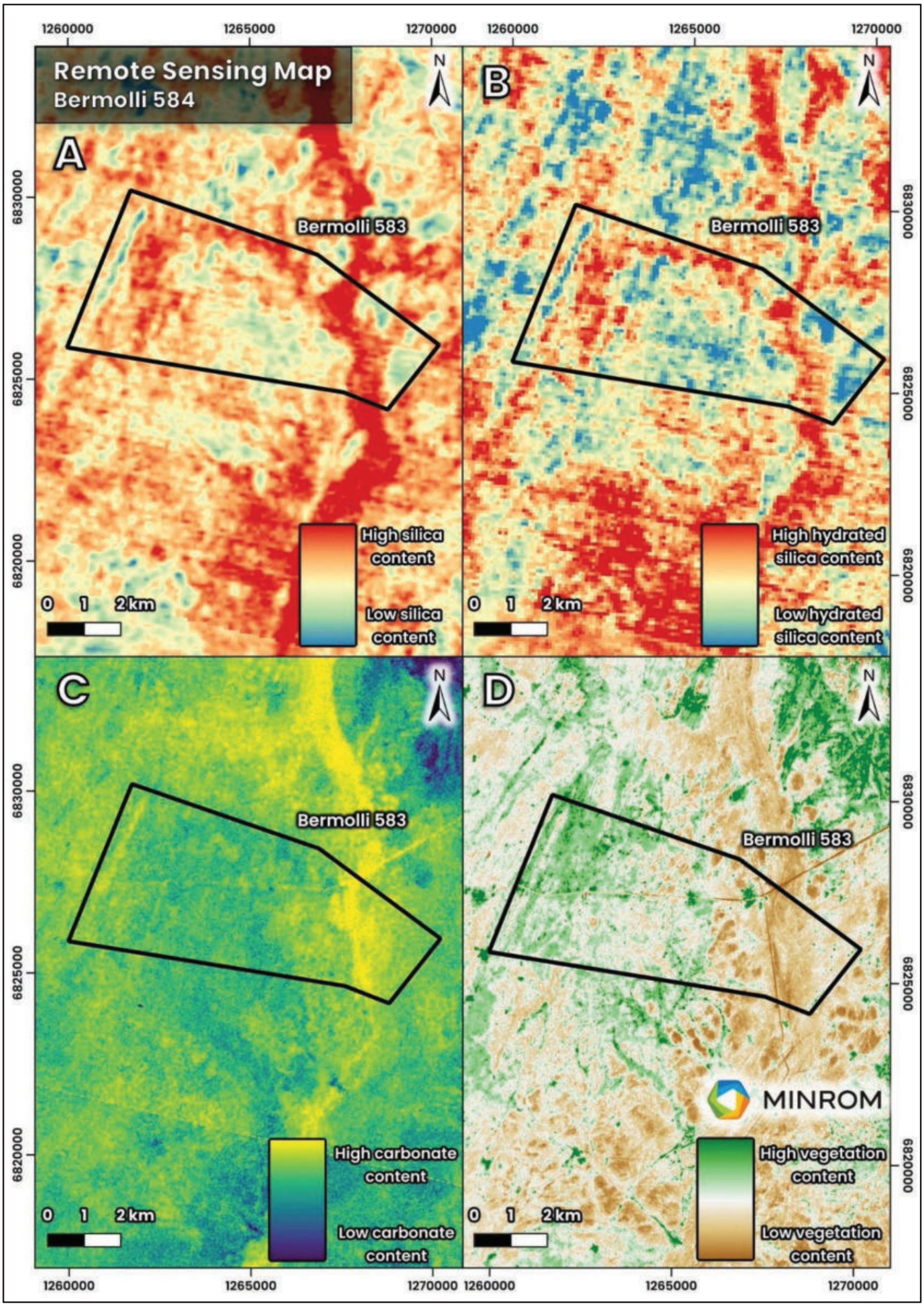

Figure 16: RS on Bermolli 583 farm.
(A) ASTER band ratio B14/B12 highlighting quartz-rich rocks.
(B) ASTER band ratio B13/B11 highlighting hydrated silica occurrences.
(C) ASTER band ratio B9/B7 highlighting carbonates.
(D) ASTER band ratio B3/B2 highlighting the vegetation.

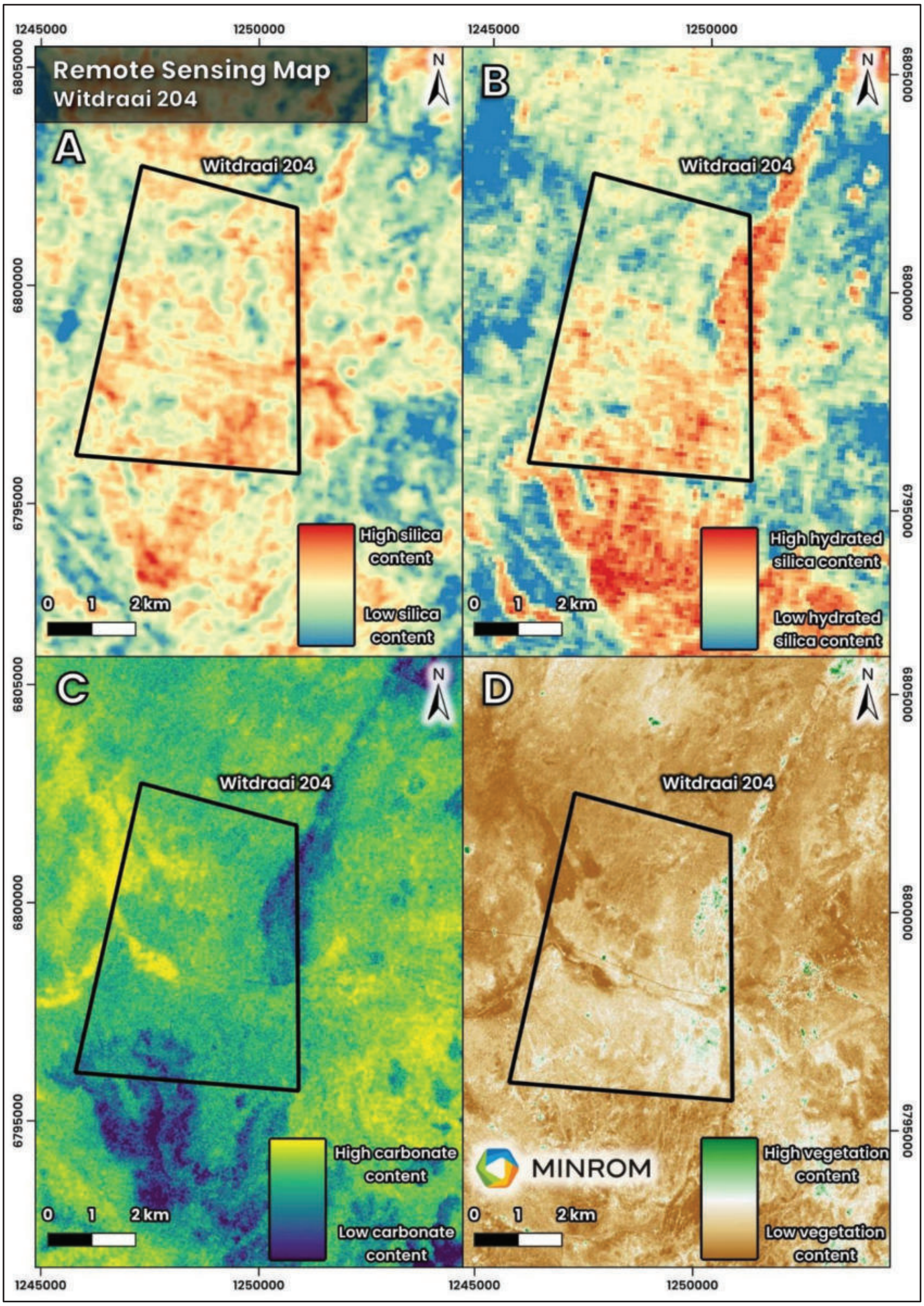

Figure 17: RS on Witdraai 204 farm.
(A) ASTER band ratio B14/B12 highlighting quartz-rich rocks.
(B) ASTER band ratio B13/B11 highlighting hydrated silica occurrences.
(C) ASTER band ratio B9/B7 highlighting carbonates
(D) ASTER band ratio B3/B2 highlighting the vegetation.

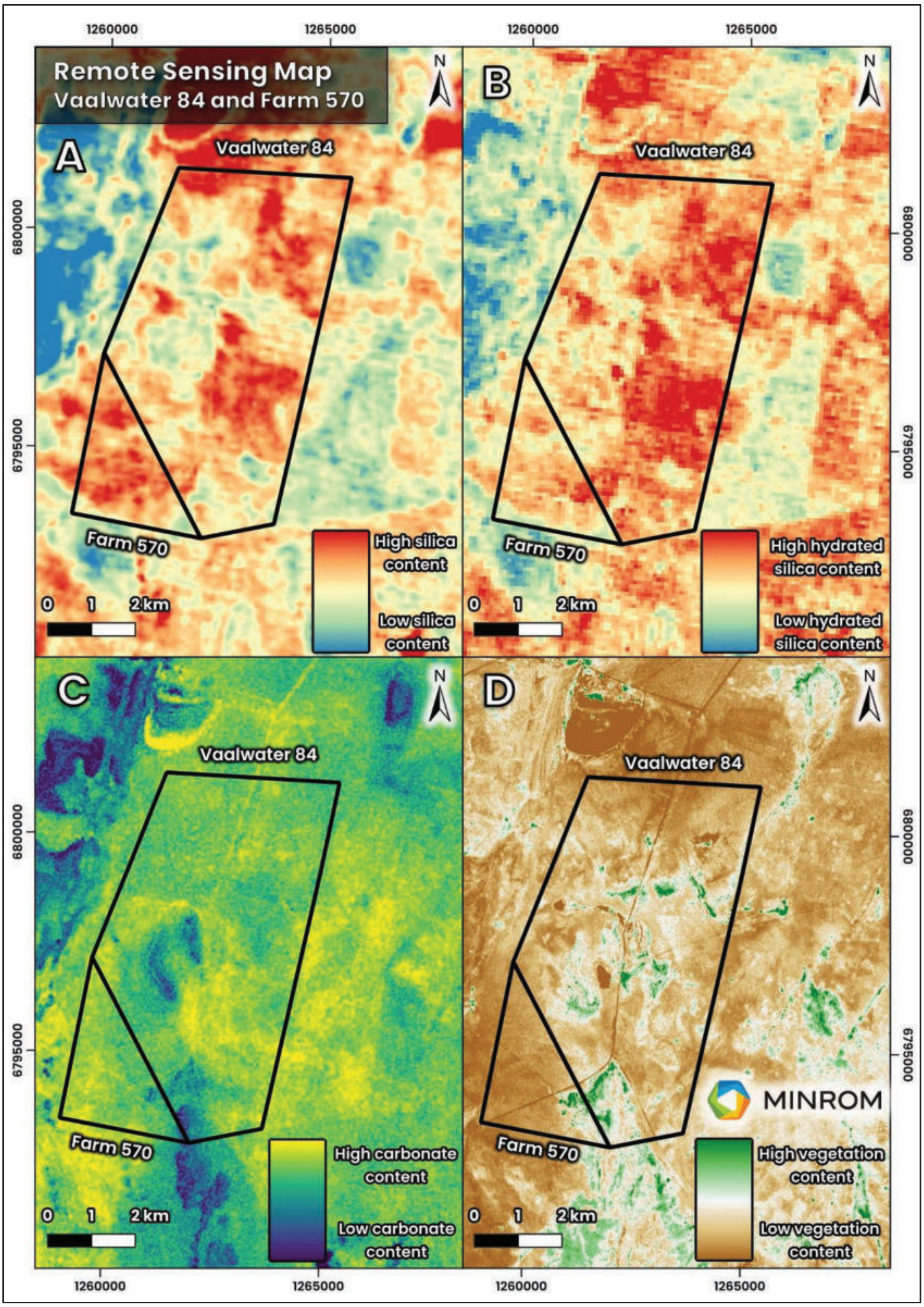

Figure 18: RS on farms Vaalwater 84 and Farm 570.
(A) ASTER band ratio B14/B12 highlighting quartz-rich rocks.
(B) ASTER band ratio B13/B11 highlighting hydrated silica occurrences.
(C) ASTER band ratio B9/B7 highlighting carbonates
(D) ASTER band ratio B3/B2 highlighting the vegetation.

After comparing the results of the RS analysis, 21 target areas (Figure 10) have been identified, with all the generated targets containing medium to high-silica content. Most of the potential target are generally found near known diatomite occurrences indicating a reasonable, but not prefect, prediction from the regional scale RS data.

It should be noted that these areas should be considered to hold potential for diatomite, but the degree, size and quantity cannot be determined from remote sensing. Additionally, these do not take into account the geological and topographical factors and therefore ground investigations will be required to ascertain if these targets contain potential diatomite.

4.3 Site Mapping & Sampling

The client provided Minrom with some preliminary geological mapping data and grab samples that were collect by an independent geologist, Mr Chris van der Merwe. The preliminary mapping data consisted of mapping points indicating where outcrop of diatomite was identified and some grab samples of the diatomite which were sent for laboratory testing to determine the silica grades. The following sample locations and results were available:

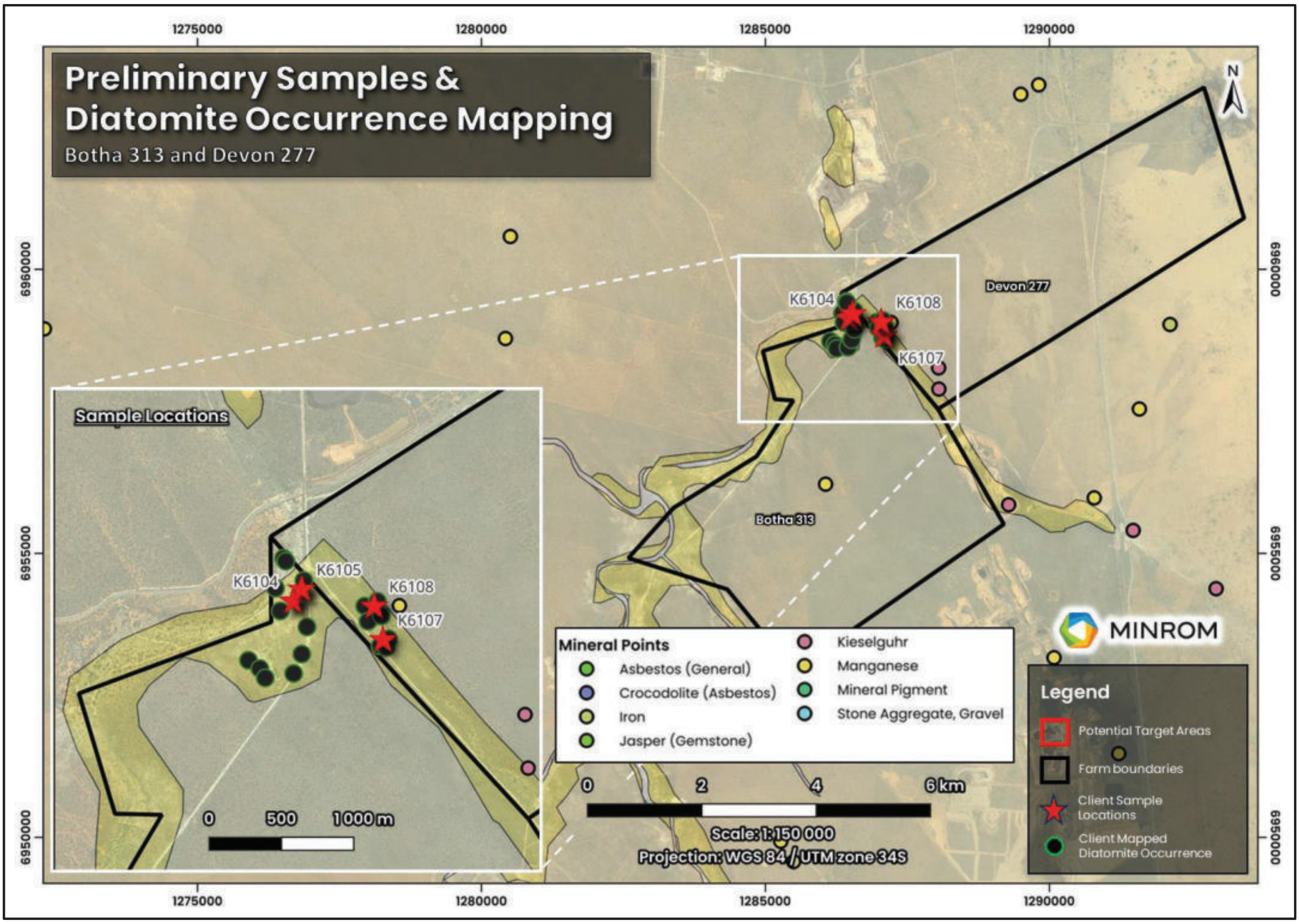

Figure 19: Preliminary sample locations shown on the geological basemap (Northern Farms). Regional mineralisation occurrence points are also shown.

Table 3: Client provided sample results (laboratory tested at UIS Laboratories).

Sample No.	Fe2O3	SiO2	Al2O3	K2O	Mn3O4 + MnO	CaO	MgO	TiO2	Na2O
K6101	0.337	81.133	0.564	0.076	0.041	3.487	2.488	0.035	0.284
K6102	0.501	74.087	0.945	0.221	0.037	4.861	4.2	0.096	0.144
K6103	0.843	79.369	0.473	0.09	0.037	4.959	1.803	0.036	0.094
K6104	0.504	53.486	0.979	0.157	0.091	2.818	1.628	0.082	0.199
K6105	0.527	59.591	0.866	0.157	0.085	9.8	1.446	0.083	0.172
K6106	0.729	83.151	1.138	0.268	0.174	1.905	1.977	0.111	0.132
K6107	0.394	61.761	0.532	0.058	0.09	13.443	1.873	0.035	0.124
K6108	1.272	64.352	1.898	0.233	0.664	6.936	1.958	0.188	0.106
K6109	1.646	77.256	1.94	0.459	0.054	2.51	2.208	0.313	0.172
K6110	0.991	78.939	1.489	0.2	0.109	4.535	2.554	0.146	0.09

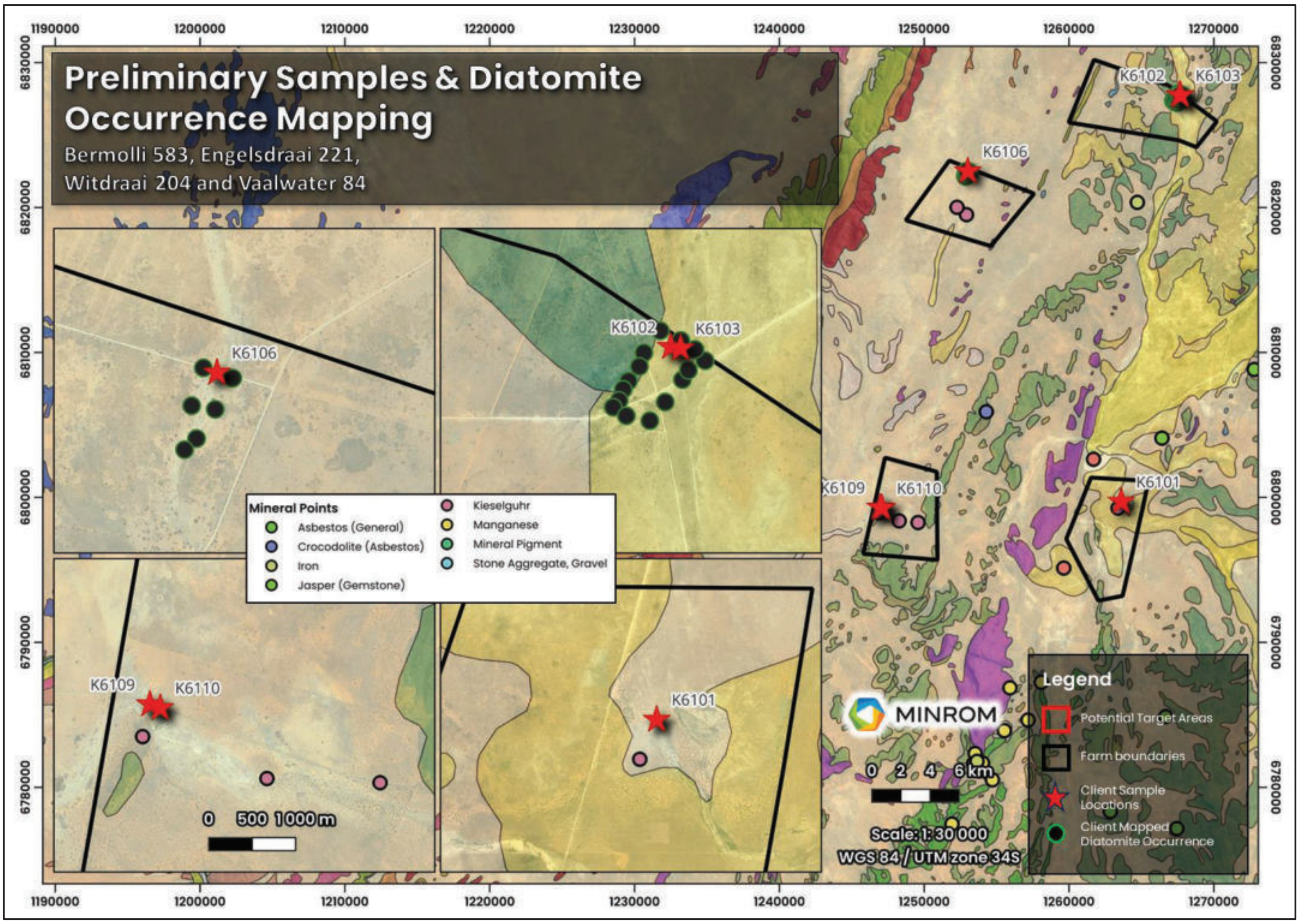

Figure 20: Preliminary sample locations shown on the geological basemap (Southern Farms). Regional mineralisation occurrence points are also shown.

These maps indicate diatomite occurrences across all target farms, with Witdraai 204 and Bermolli 583 exhibiting significant outcrop occurrences. The sample results indicate a range of silica grades, from low (for diatomite) to intermediate, with the best results coming from Engelsdraai 221 and Vaalwater 84. These results are, however, only indicative, as the method of sampling and the representativeness of the samples on these farms is unknown.

The client further provided Minrom with sample analysis from an auger drilling programme conducted on Farm 570, with 69 holes sampled both at surface and at a depth of 1.5 meters (Figure 21). The samples were analysed using a handheld XRF for SiO_2, Al_2O_3, Fe_2O_3, MnO, TiO_2, CaO, MgO, K_2O, Na_2O and P_2O_5 (Appendix 8.4). Additionally, 14 of these samples were sent to an independent laboratory, Metex Laboratory, for analysis (Table 4).

It should be noted that the silica (SiO_2) content is only an indication of the quality of the diatomite as the real value is not in the grade but in the purity of the diatomite and the porosity.

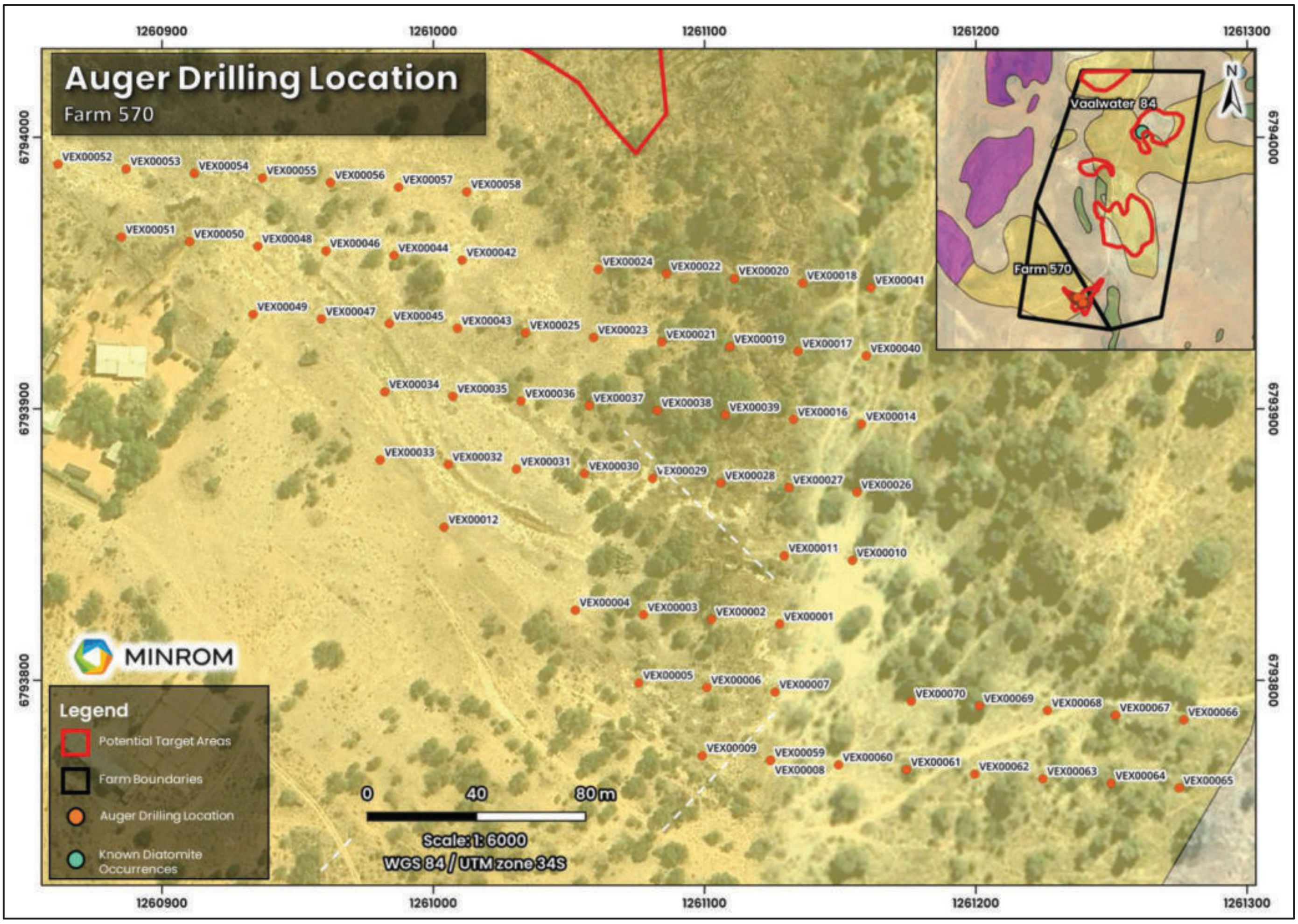

Figure 21: Auger drill hole locations and samples shown on Farm 570.

Table 4: Client provided sample results for the auger drilling samples on Farm 570 (laboratory tested at Metex Laboratories).

Sample ID	%Fe	%SiO2	%Al2O3	%K2O	P%	%S	%BaO	%Mn	%CaO	%MgO	%TiO2	Na2O	Oxides
VEX0001 F5101 1-0M	0.025	68.799	1.987	0.600	0.025	0.119	0.005	0.005	20.696	0.493	0.192	0.045	93.036
VEX0005 F5102 1-0M	0.025	58.068	1.637	0.459	0.026	0.059	0.005	0.057	32.133	0.705	0.162	0.045	93.447
VEX0010 F5103 1-0M	0.025	76.334	2.243	0.579	0.034	0.225	0.005	0.017	16.801	0.414	0.182	0.043	96.963
VEX0019 F5104 1-0M	0.025	84.812	2.115	0.618	0.021	0.049	0.005	0.000	5.866	0.349	0.184	0.038	94.120
VEX0026 F5105 1-0M	0.025	78.509	1.620	0.515	0.021	0.114	0.005	0.003	13.761	0.516	0.175	0.041	95.344
VEX0042 F5106 1-0M	0.025	69.696	1.263	0.346	0.028	0.057	0.005	0.002	19.317	1.197	0.145	0.044	92.173
VEX0046 F5107 1-0M	0.025	70.486	1.957	0.575	0.028	0.059	0.005	0.007	17.719	0.762	0.175	0.131	91.979
VEX0052 F5108 1-0M	0.025	75.633	2.246	0.624	0.029	0.220	0.005	0.012	18.694	0.402	0.200	0.043	98.186
VEX0058 F5109 1-0M	0.025	86.021	1.967	0.546	0.016	0.023	0.005	0.005	6.297	0.506	0.191	0.038	95.673
VEX0065 F5110 1-0M	0.025	89.376	2.288	0.584	0.019	0.018	0.005	0.003	4.778	0.256	0.237	0.037	97.662
VEX0068 F5111 1-0M	0.025	88.608	2.444	0.635	0.018	0.017	0.005	0.006	5.635	0.302	0.251	0.036	98.018
VEX0071 F5801 1-0M	0.025	77.133	2.036	0.544	0.027	0.037	0.005	0.014	11.112	0.415	0.229	0.040	91.668
VEX0076 F5802 1-0M	0.025	90.739	2.776	0.608	0.018	0.011	0.005	0.002	2.129	0.203	0.260	0.105	96.916
VEX0081 F5803 1-0M	0.025	63.779	1.794	0.490	0.037	0.036	0.005	0.018	27.021	0.395	0.197	0.133	93.996

These auger drilling results indicate excellent surface and near surface silica grades.

4.4 Target Generation & Ranking

Based on the mineralisation model, the results and interpretations from the remote sensing study, the historical mapping, and the sample data all farms were considered highly prospective for diatomite mineralisation.

Target generation and selection based on multiple datasets can be highly subjective and often relies on one or two datasets with only reference to the other datasets available. Therefore, Minrom employed a machine learning probabilistic approach to generate target areas, whereby all data was evaluated and the relevance of a given dataset to the occurrence of mineralisation was proportioned and added to the other datasets to produce a probability of mineralisation. This method involves the use of all the datasets described in this report which are processed using the important factors described in the Mineralisation Targeting (Section 4.1).

The following datasets were used:

- Topography (DEM).
- Geological mapping
  (combined regional and local).
- Proximity to known regional diatomite occurrences.
- Client provided mapping of diatomite occurrences
  (point data).
- Fluvial systems (represented as distance to the nearest river, lake, dam, or pan).
- Remote sensing

(band ratio images showing the silica content).

- Sample locations with > 60% silica.

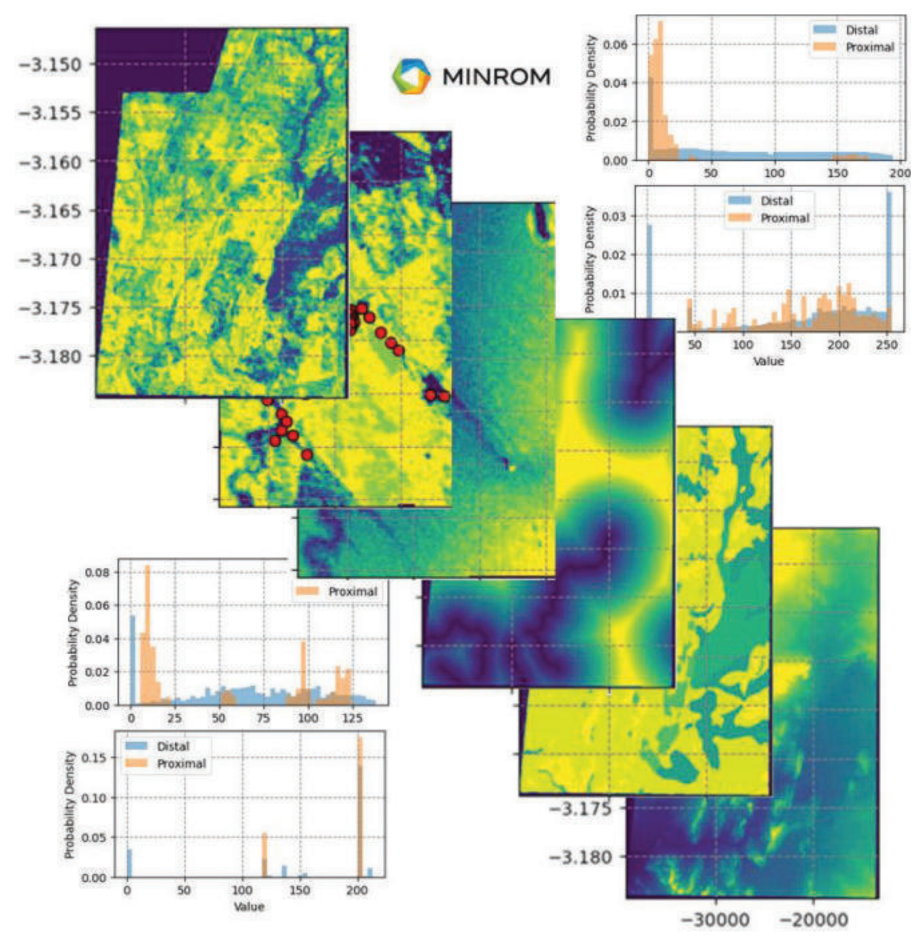

Figure 22: Datasets used for probabilistic target generation. Histograms of proximal relationship between diatomite mineralisation and datasets.

The following targets were therefore generated for each licence area based on the probability of diatomite mineralisation using the mineralisation model and targeting defined in this report. As observed in these maps the predicted probabilities and the mapped diatomite occurrences are strongly correlated indicating the prediction maps are well supported.

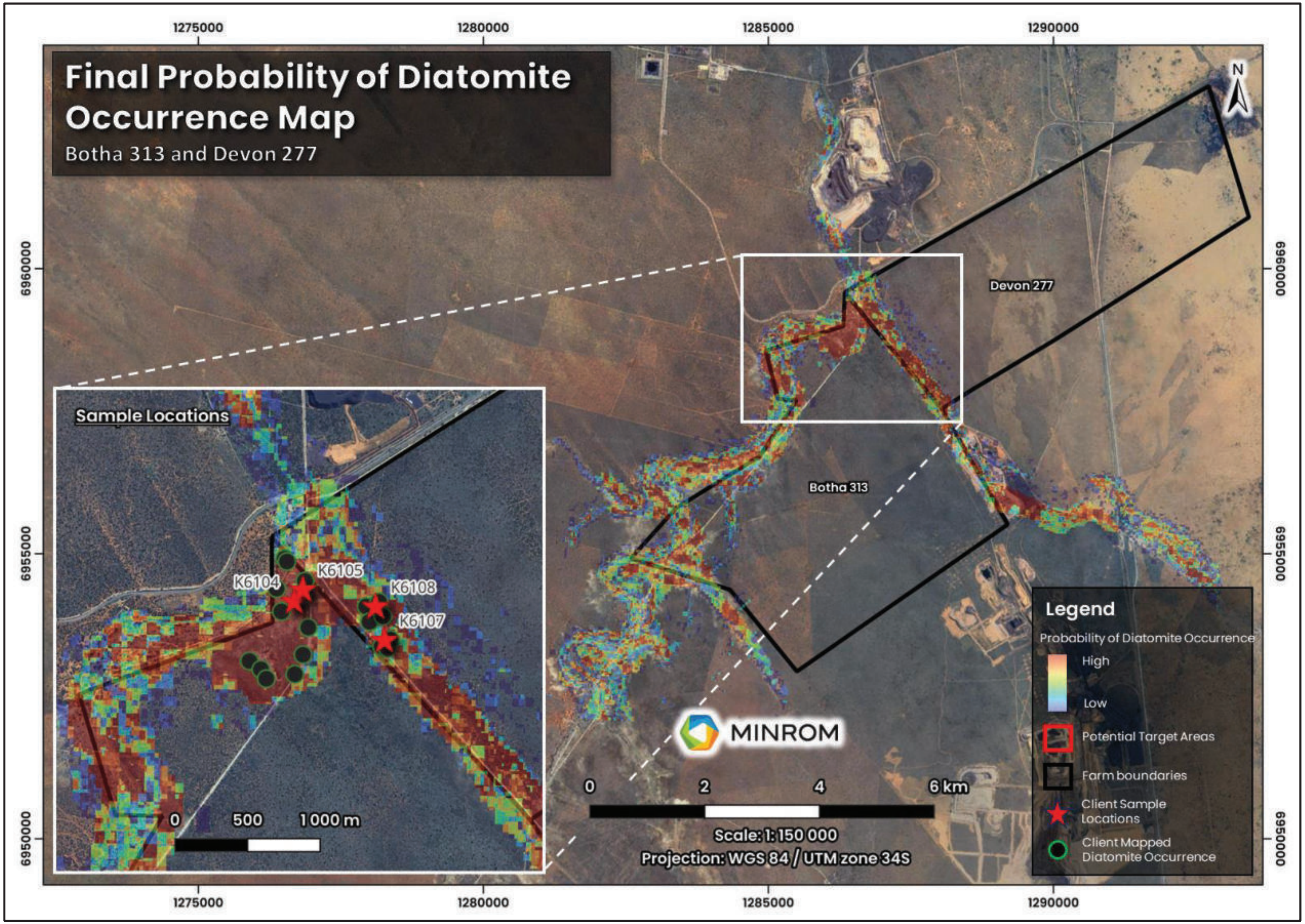

Figure 23: Northern Farms Probability of diatomite occurrence map.

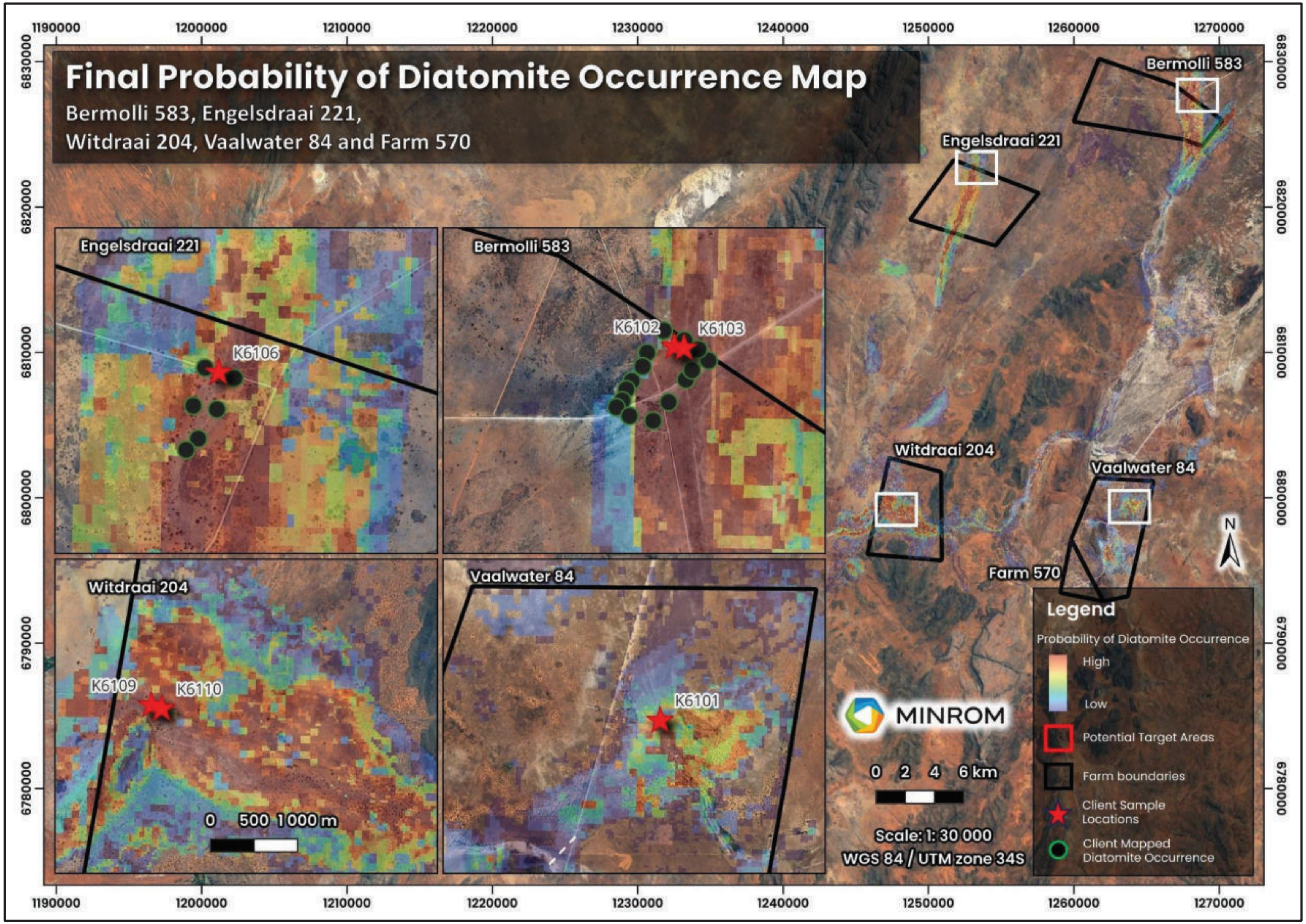

Figure 24: Northern Farms Probability of diatomite occurrence map.

These high-probability areas were then refined into targets and prioritised for follow-up exploration based on the indicative sample results and relative size of the potential deposit (Figure 25 and Table 5).

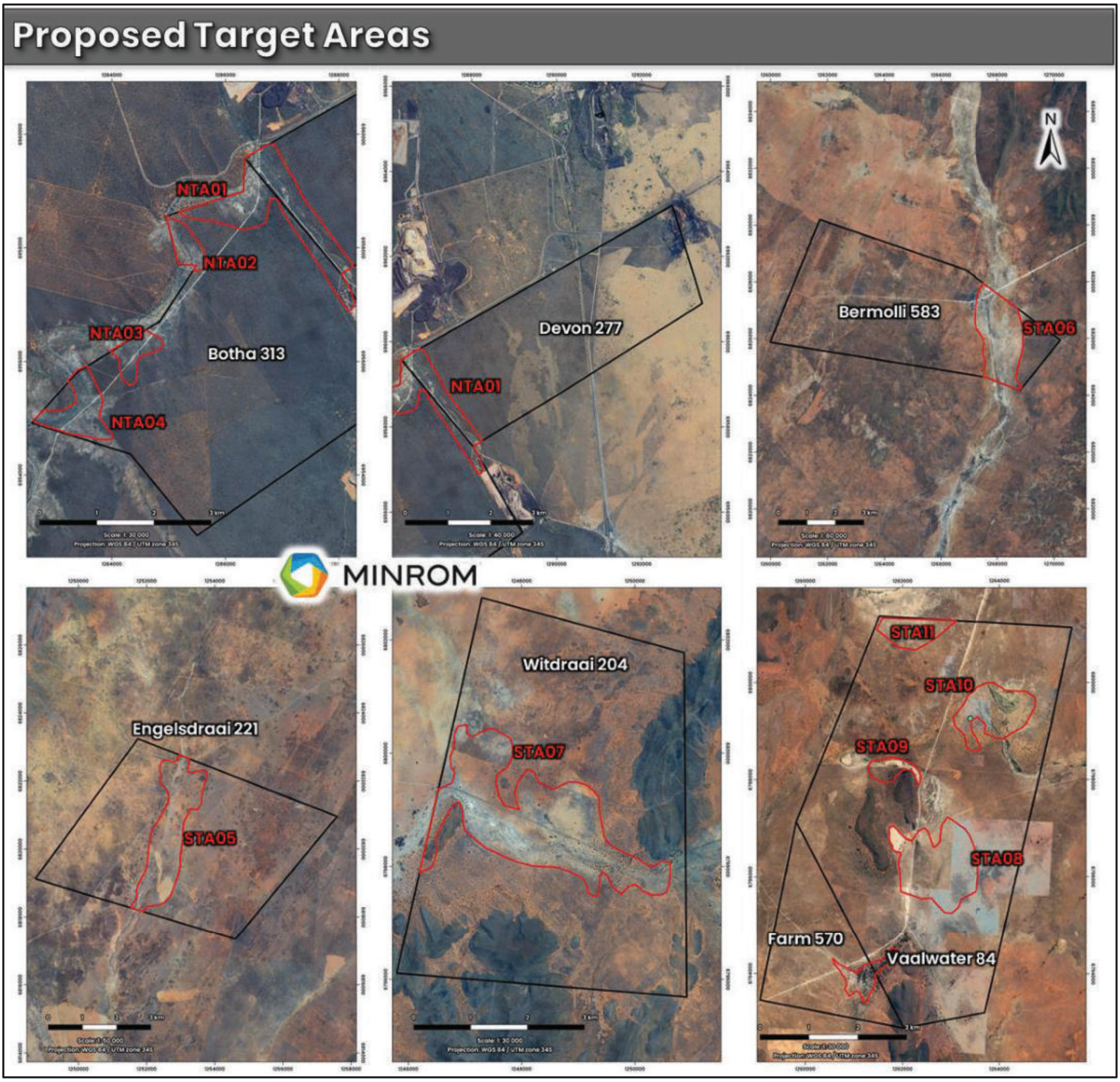

Figure 25: Target areas for the next stage of exploration.

These rankings were based on the confirmed presence of mineralisation, the grades of the preliminary samples, the potential size and continuity of the target area, and the combined probability of mineralisation.

Table 5: Ranked Target Areas.

Farm	Target ID	Diatomite Presence Confirmed in the Field	Sampled	Est. Grade (% SiO2)	Target Surface Area (m^2)	Ranking
Vaalwater 84	STA10	Yes	1 sample (K6101) and continued field investigation	81.13	1 339 987	**1**
Farm 570	STA12	Yes	69 samples	77.00	442 111	**2**
Engelsdraai 221	STA05	Yes	1 sample (K6106)	83.15	4 231 912	**3**
Bermolli 583	STA06	Yes	2 samples (K6102, K6103)	76.73	4 300 270	**4**
Witdraai 204	STA07	Yes	2 samples (K6109, K6110)	78.10	5 240 068	**5**
Botha 313	NTA01	Yes	4 samples (K6104, K6105, K6107, K6108)	59.80	2 193 732	**6**
Botha 313	NTA02	No	No	Unknown	346 549	**7**
Botha 313	NTA03	No	No	Unknown	388 579	**8**
Botha 313	NTA04	No	No	Unknown	789 989	**9**
Vaalwater 84	STA08	No	No	Unknown	2 281 184	**10**
Vaalwater 84	STA11	No	No	Unknown	668 815	**11**
Vaalwater 84	STA09	No	No	Unknown	341 105	**12**

* Estimated grade (Est. Grade) obtained from available client sample data (unverified by Minrom).

These targets should therefore be further investigated to determine the potential size of the deposits. Additional, representative samples should also be extracted to understand the silica grades as well as the potential deleterious elements. Thin-section analysis on selected samples could also be useful in determining the quantity and quality of diatomite in comparison to the total silica content.

Commercial-grade diatomite primarily consists of silica (85 - 94%) and aluminium oxide (1-7%). Other elements are typically considered deleterious which typically include iron and titanium oxides, organic matter, and calcium carbonates. Recrystallised silica into quartz is also considered to be a deleterious as it negatively influences the porosity and permeability of the diatomite.

5 MARKET OVERVIEW

A brief market overview has been compiled to contextualise the exploration of diatomite. This is by no means a comprehensive review of the local diatomite market.

5.1 Diatomite Uses

Diatomite is primarily used for filtration products due to its lightweight, inert composition, and excellent porose/permeable nature. According to the USGS (2023) in the United States approximately 55% of all produced diatomite is used in filtration with the remaining 45% divided into absorbents, filters, lightweight aggregates, agriculture, painting and coatings, construction, and other minor applications. A very small amount of the diatomite market (approximately 1%) is used in specialised pharmaceutical and biological processes.

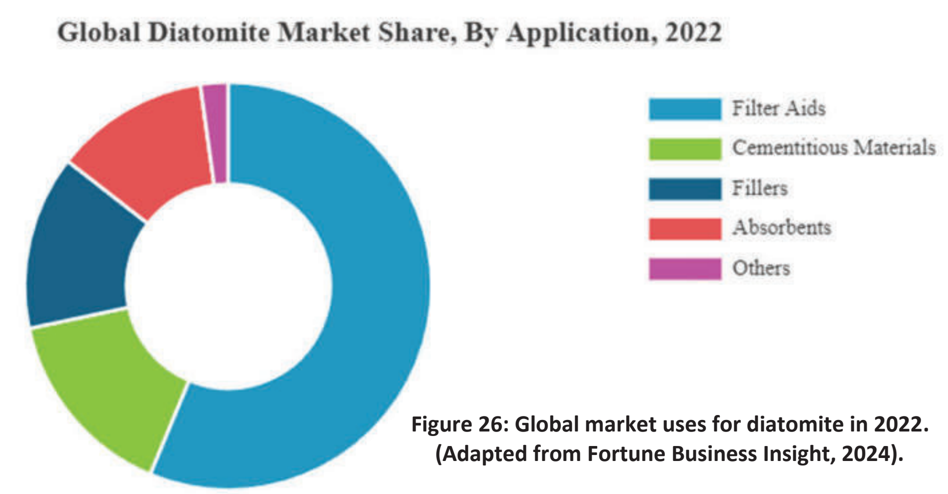

Figure 26: Global market uses for diatomite in 2022. (Adapted from Fortune Business Insight, 2024).

Internationally the market has been defined by Mordor Intelligence (2023) as close to being a fragmented market, meaning it is highly competitive and doesn't have a dominant market player. The top companies in 2023 in the diatomite market were:

- Imecacys (France)
- EP Minerals (U.S.)
- Showa Chemical Industry Co.,Ltd. (Japan)
- Calgon Carbon Corporation (U.S.)
- Dicalite Management Group, LLC (U.S.)
- Diatomit CJSC (Armenia)
- JiLin Yuantong Mineral Co., Ltd. (China)
- Nova Industries Limited (Kenya)
- Reade International Corp. (U.S.)
- Seema Minerals & Metals (India)

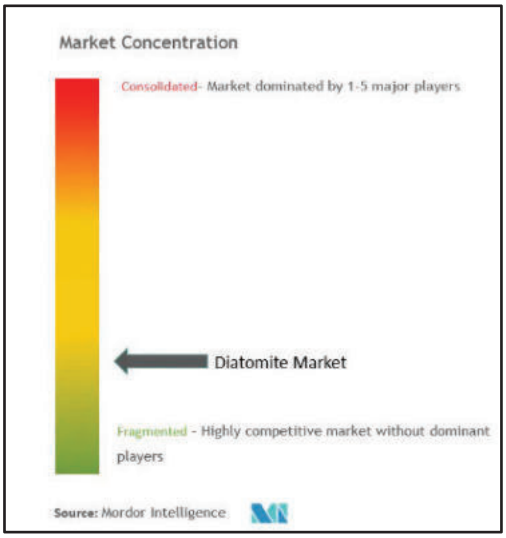

Figure 27: Type of market. (After Mordor Intelligence, 2023)

5.2 Diatomite Market

Although these companies are dispersed around the world the primary production and the consumption of diatomite is the United States. Canada and Mexico also produce diatomite with current and evolving market such as Europe (Germany, France, U.K., Italy, Spain, Rest of Europe), Asia-Pacific (China, India, Japan, South Korea, Australia) and LAMEA (Brazil, Saudi Arabia, South Africa) all increasing production (Allied Market Research, 2023).

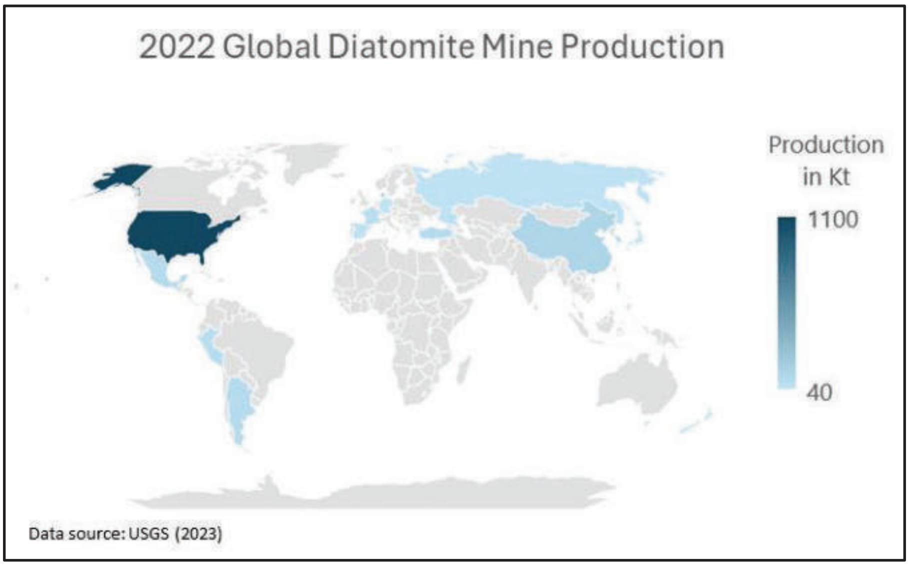

Figure 29: Map showing the leading countries in diatomite production for 2022. (USGS, 2023)

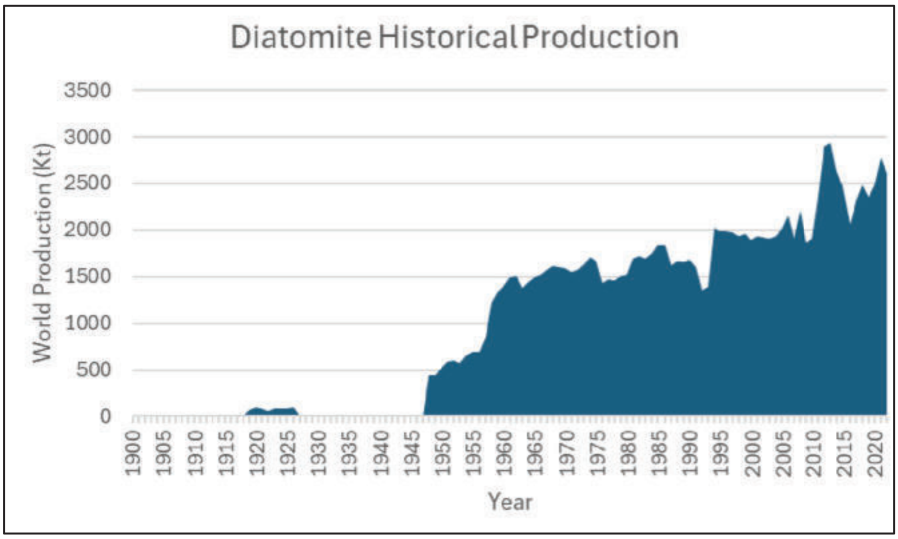

Figure 28: Annual diatomite production 1900-2000 (USGS, 2023)

According to the USGS (2023) mineral commodity summary report, diatomite is one of the few non-fuel minerals for which the consumption rate has increased over the past few years and is around 12%. The global diatomite market size is estimated at 2.01 million tonnes in 2024, and is expected by Mordor Intelligence (2024) to reach 2.59 million tonnes by 2029, growing at a CAGR of 5.23% during the forecast period (2024-2029). The Diatomite market was negatively impacted by the COVID-19 pandemic as there was a slowdown in production and mobility.

Lockdowns and production slowdowns impacted the availability of diatomite used in manufacturing additives and absorbents. However, the market has demonstrably rebounded since then.

Looking ahead, several factors will influence the market's trajectory. The increasing demand for water treatment solutions, a sector where diatomite excels, presents a clear opportunity for growth. Conversely, the availability of substitute materials like expanded perlite and silica sand could dampen market expansion in some applications. On a positive note, the growing demand for diatomite-based insecticides presents a promising avenue for future market growth. Additionally, North America is expected to remain the dominant consumer region, driven by strong demand from countries like the United States and Canada.

6 CONCLUSIONS & RECOMENDATIONS

It can be concluded that the Prospecting Right (NC30/5/1/1/2/13826 PR), which consists of seven (7) farms, is highly prospective for diatomite. Due to their geographic separation, these farms were categorized into northern targets (farms Botha 313 and Devon 277) and southern targets (Bermolli 583, Engelsdraai 221, Witdraai 204, Vaalwater 84, and Farm 570). All the identified targets and farms exhibit diatomite potential, varying in sizes and scale.

A review of the available diatomite literature and the regional geology allowed for the development of a detailed mineralisation model for the diatomite within the project area. This model was used to define mineralisation targeting criteria for diatomite, which was subsequently applied to the project area. As part of the mineralisation targeting process, remote sensing (RS) data was used to delineate potential diatomite occurrences. The RS study managed to define all high silica lithologies, however, this also included several of the local geological units (sandstone, quartzite, Kalahari sand) which are not sources of diatomite (Section 4.2). Consequently, while partially successful, the RS was supplemented by a multi-faceted probabilistic target generation approach (Section 4.4).

A preliminary site visit performed by an independent geologist on behalf of the client provided ten (10) grab samples of diatomite material from each of the project farms, as well as several locations where diatomite was reported to be evident on surface. This data was incorporated into the mineralisation model and mineralisation targeting and a machine-learning algorithm was applied to determine the probability of diatomite mineralisation within the project farms. The areas with a high probability of mineralisation were ranked and resulted in twelve (12) target areas being defined.

The highest priority target areas were located on Farm 570, Vaalwater 84, and Witdraai 204 and Engelsdraai 221 farms. Recent auger drilling on Farm 570, along with further field investigation on Vaalwater 84, have provided strong indications of commercial grades of diatomite on these farms. The extent of the historical mining of diatomite on Witdraai 204 is poorly documented, however, historical reports indicate that a potential of 30 000 tonnes of diatomite remains within this farm. While the best quality diatomite material might have already been extracted, the historical mining activity indicates that the diatomite in the area has the potential to be economically mined. The other targets are all likely to contain diatomite, however, the grade and size of these deposits will still need to be determined through fieldwork and additional exploration.

Since commercial-grades diatomite consists of 85 - 94% SiO_2 and have aluminium grades of less than 1-7% Al_2O_3, none of the preliminary surface samples collected are economically viable without some form of processing. **However,** it is important to note that these samples were only intended to be indicative and do not prove the potential of the project. The high handheld XRF silica grades obtained in the Augering indicate a strong potential for diatomite with a potentially economic thickness. Consequently, there is sufficient evidence to proceed with the next step of exploration, and define the size and grades of the diatomite deposits identified in the ranked targets to determine the economic viability of these deposits. Further exploration is required to confirm the presence and economic viability of the diatomite targets identified in this report.

6.1 Exploration Strategy

Since the mineralisation potential defined in this report supports additional exploration the following high-level (overview) exploration strategy has been defined. Minrom favours a phased approach to minimise exploration expenditure and maximise geological data gathered:

• **Phase 1 - Literature review & Target generation** ○ Review all available project data ○ Develop mineralisation model which can be applied to search for the target commodity anywhere the geological setting ○ Generate exploration targets ○ Rank exploration targets	**Complete**
• **Phase 2 – Field Verification & Initial Exploration Potential (Range analysis)** ○ Site investigation to determine if the target areas contain diatomite mineralisation ○ Surface sampling (representative samples) ○ Excavate pits to check depth extension of mineralisation ▪ Pit sampling (representative channel sampling) ○ Selected samples for diatomite quality testing (XRF SiO_2 grade is not sufficient for diatomite quality) ○ Calculate the potential size and grade of the deposit and determine if the deposits are economically viable (conceptual economic model)	**Proposed Next Phase**
• **Phase 3 – Delineate & Define the Resource** ○ Drilling / auguring / pitting of the potential economic deposits to get sufficient grade to estimate a mineral resource and mining plan.	**TBC** Likely follow up phases if determined to be economically viable

7 AUTHORS' QUALIFICATIONS

- Graham Duncan holds a BSc in Geography and Geology and a BSc Honours (Cum laude) in Geology from the University of Johannesburg, as well as a Citation in Geostatistics from the University of Alberta. Graham is a member of the Geological Society of South Africa (GSSA), a registered Professional Natural Scientist with SACNASP and a member of the Southern African Institute of Mining and Metallurgy (SAIMM).

Edited and reviewed by:

- Jaco Van Den Berg holds an BSc Honours degree in Geology from the University of Stellenbosch as well as an MSc degree in Exploration Geology from Rhodes University. Jaco is a member of the Geological Society of South Africa (GSSA), the Geological Society of Namibia and the Society of Economic Geologists (SEG). He is also a registered Professional Natural Scientist with SACNASP.

8 APPENDIX

8.1 References

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8.2 Project Grid System

All coordinate and spatial data utilised during the project is in the following format:

WGS 84 / UTM zone 34S (EPSG: 32734)

- Easting – refers to the position on the east–west line, also known as the X–coordinate.
- Northing – refers to the position on the north–south line, also known as the Y–coordinate.
- RL – refers to the relative height of the point above sea level.

Coordinate system details:

Datum:		**D_WGS_1984**
Projection:		Universal Transverse Mercator
Project Name:		WGS 84 / UTM zone 34S
Projection Details:		
	False_Easting	0
	False_Northing	0
	Central_Meridian	0
	Scale_Factor	1
	Latitude_of_Origin	0
	Linear Units:	Meters (m)

Units: meters

Dynamic (relies on a datum which is not plate-fixed)

Celestial body: Earth

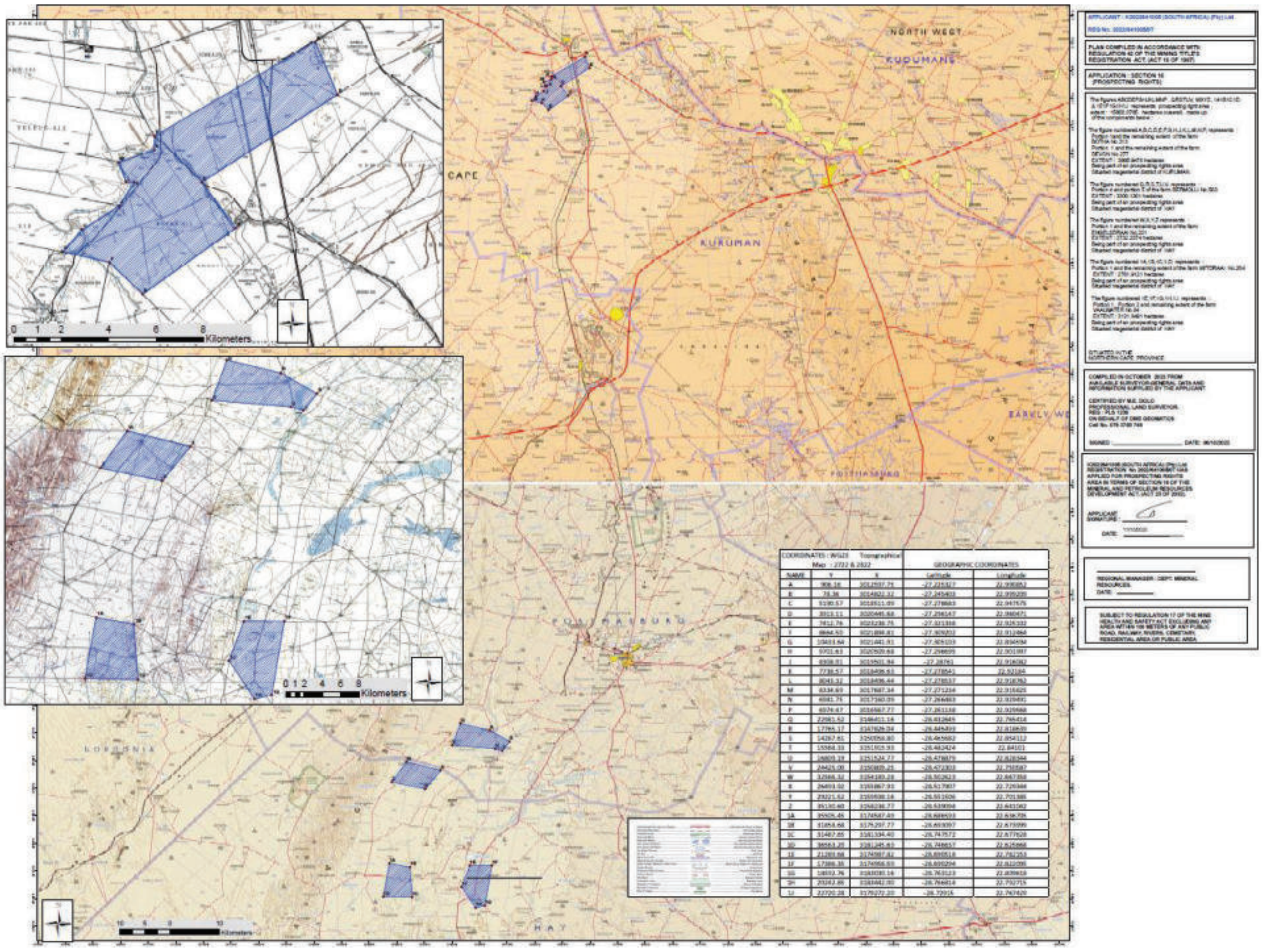
Based on World Geodetic System 1984 ensemble (EPSG:6326), which has a limited accuracy of at best 2 meters.

Method: Universal Transverse Mercator (UTM)

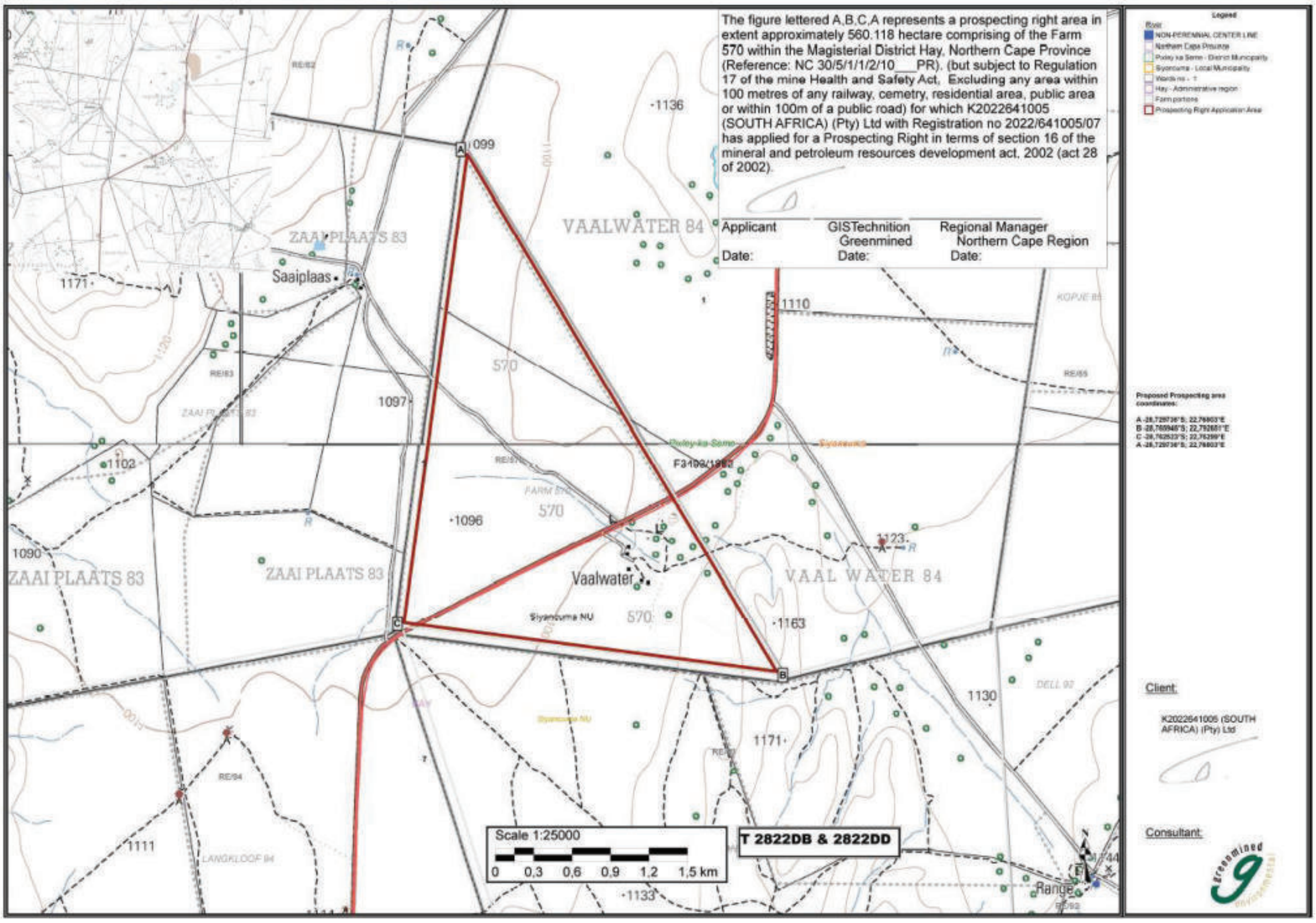
Proj4: +proj=utm +zone=34 +south +datum=WGS84 +units=m +no_defs

8.3 Licence

Regulation 2.2 Map for the Prospecting Right:



Amendment adding Farm 570:



The figure lettered A,B,C,A represents a prospecting right area in extent approximately 560.118 hectare comprising of the Farm 570 within the Magisterial District Hay, Northern Cape Province (Reference: NC 30/5/1/1/2/10___PR). (but subject to Regulation 17 of the mine Health and Safety Act, Excluding any area within 100 metres of any railway, cemetry, residential area, public area or within 100m of a public road) for which K2022641005 (SOUTH AFRICA) (Pty) Ltd with Registration no 2022/641005/07 has applied for a Prospecting Right in terms of section 16 of the mineral and petroleum resources development act, 2002 (act 28 of 2002).

Applicant
Date:

GISTechnition
Greenmined
Date:

Regional Manager
Northern Cape Region
Date:

Legend

Proposed Prospecting area coordinates:

A	-28,729736"S	22,76803"E
B	-28,765946"S	22,792651"E
C	-28,762533"S	22,76299"E
A	-28,729736"S	22,76803"E

Client:
K2022641005 (SOUTH AFRICA) (Pty) Ltd

Consultant: