HERITAGE IMPACT ASSESSMENT

In terms of Section 38(8) of the NHRA for the

Proposed upgrade to the existing railway infrastructure at the Wessels Mine near Hotazel in the Northern Cape

Prepared by CTS Heritage

CTS HERITAGE

For

SLR Consulting

June 2021

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EXECUTIVE SUMMARY

1. Site Name:

Wessels Mine Railway Infrastructure

2. Location:

Near Hotazel in the Northern Cape

3. Locality Plan:

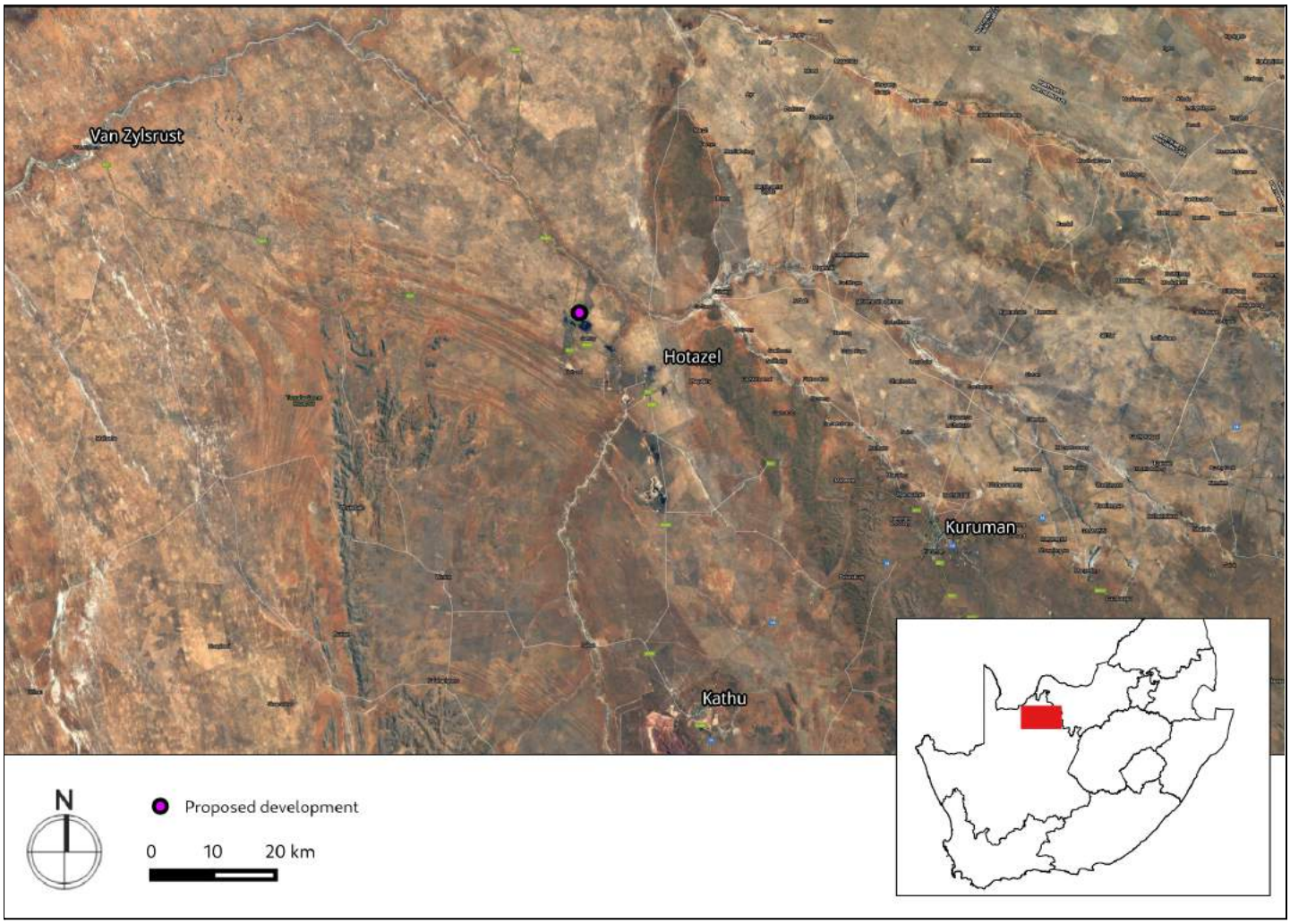

Figure 1: Location of the proposed development site

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4. Description of Proposed Development:

South32 intends to upgrade the existing railway infrastructure at the Wessels Mine. The upgrade will consist of modifications to the staging rail lines and the design of a new rail balloon. The extension of the railway into the new railway balloon measures at approximately 2 500 m long and 25 m wide and would result in the clearing of indigenous vegetation (more than 1 hectare, but less than 20 hectares). Additionally, the railway would cross a section of the existing tailings dam and would thus result in the removal of approximately 15 000 – 25 000 m3 of material from the tailings area, which would then be deposited on another existing tailings dam. The new railway extension would be located within the existing Mining Right (MR) boundary at the Wessels Mine and amendments to the mine's Water Use Licence (WUL) are not required.

5. Heritage Resources Identified:

No heritage resources were identified within the area proposed for development. No graves were located or identified in the field assessment. Furthermore, no intangible heritage resources were identified. Interviews with mining officials revealed no known oral histories associated with this area or remnants of graves or symbolic heritage.

6. Anticipated Impacts on Heritage Resources:

Due to the nature of the landscape and disturbed site footprint, it is unlikely that the proposed development will negatively impact on significant heritage resources.

7. Recommendations:

There is no objection to the proposed development on heritage grounds and the following is recommended:

1. No mitigation is required prior to construction commencing.
2. The attached Chance Fossil Finds Procedure (Appendix 3) must be implemented during the construction phase of development, and included in the EMPr
3. If any archaeological resources or unmarked human remains are uncovered or exposed during excavations these must immediately be reported to the South African Heritage Resources Agency (SAHRA) (Att: Ms Natasha Higgitt 021 462 4502). Burials must not be removed until inspected by a professional archaeologist.

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CONTENTS

1. INTRODUCTION

1.1 Background Information on Project

South32 intends to upgrade the existing railway infrastructure at the Wessels Mine. The upgrade will consist of modifications to the staging rail lines and the design of a new rail balloon. The extension of the railway into the new railway balloon measures at approximately 2 500 m long and 15 m wide and would result in the clearing of indigenous vegetation (more than 1 hectare, but less than 20 hectares). Additionally, the railway would cross a section of the existing tailings dam and would thus result in the removal of approximately 15 000 – 25 000 m3 of material from the tailings area, which would then be deposited on another existing tailings dam. The new railway extension would be located within the existing Mining Right (MR) boundary at the Wessels Mine and amendments to the mine's Water Use Licence (WUL) are not required.

1.2 Description of Property and Affected Environment

The environment consists of flat sandy plains covered with vegetation towards the east. The largest part of the environment is currently used for mining activities. The eastern section of the site footprint is situated just outside of the mine perimeter (fencing 0f 2,4m high). This section is located on open farmland and is undisturbed, except for a few cement abandoned foundations and one prospecting borehole. This area is mostly flat and sandy.

Towards the north and south of the balloon, the terrain has previously been very disturbed by various mining activities such as borrow pit excavations, road construction, construction of clear areas to process areas and loading zones. There is also a large mining heap just east of the mining plant. The area is also scattered with old machinery and industrial debris in certain areas. It is obvious that the mine altered this landscape through the years by means of construction and ground movement operations.

The entire site is very disturbed except for the eastern section of the loop/balloon which is situated in an undisturbed landscape. This undisturbed area covers a minimal area of approximately 1-2 ha. Noted disturbances include:

- Various two track gravel/sand roads throughout the site.
- Excavated borrow pits, quarries are present at several places on the site, especially around the mine plant.
- Large areas cleared for processing and loading of ore.
- Various disturbed areas previously used for construction activities, abandoned cement foundations in

certain areas and the presence of previous prospecting boreholes.

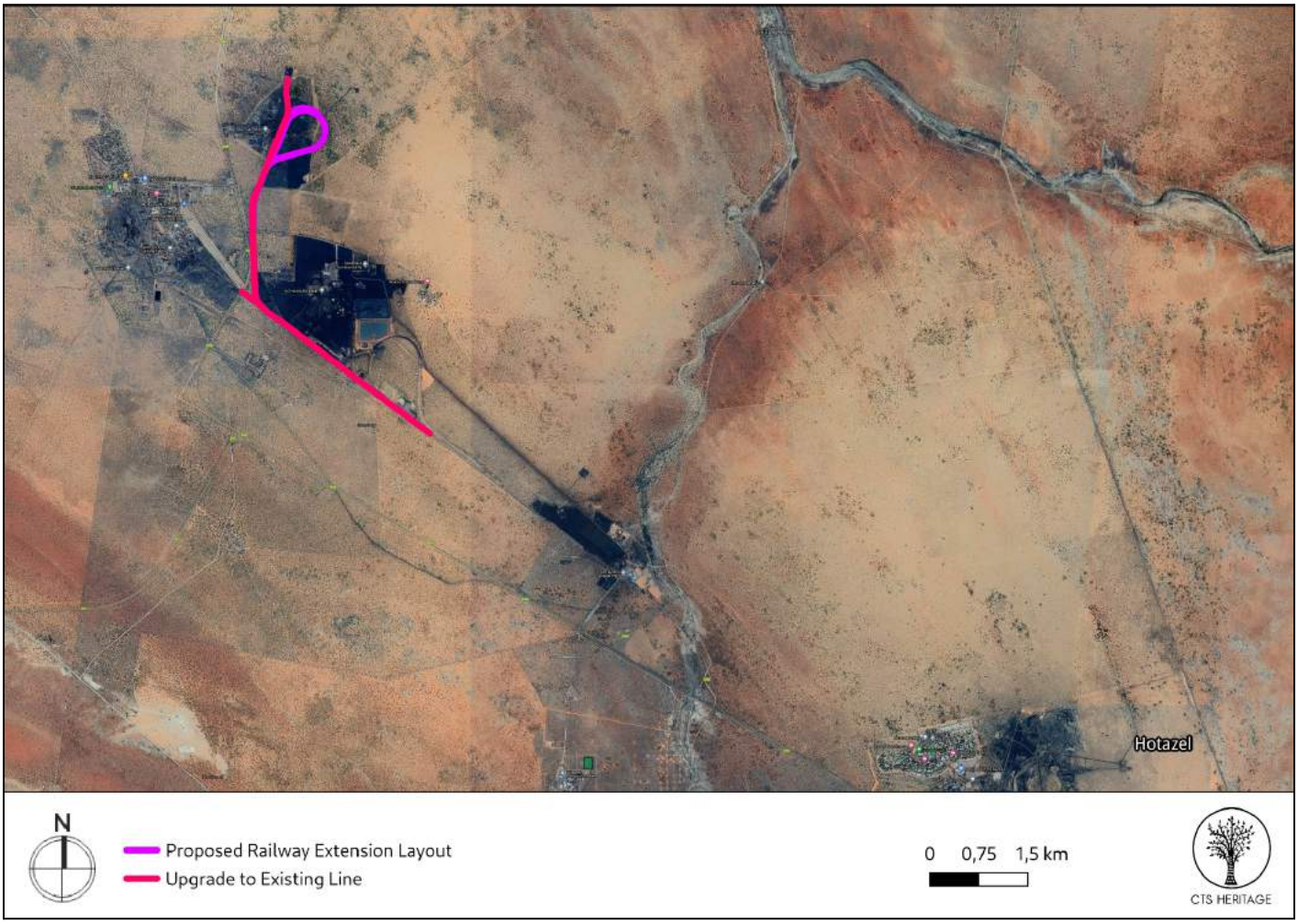

Figure 1.1: Proposed location of development and alternatives

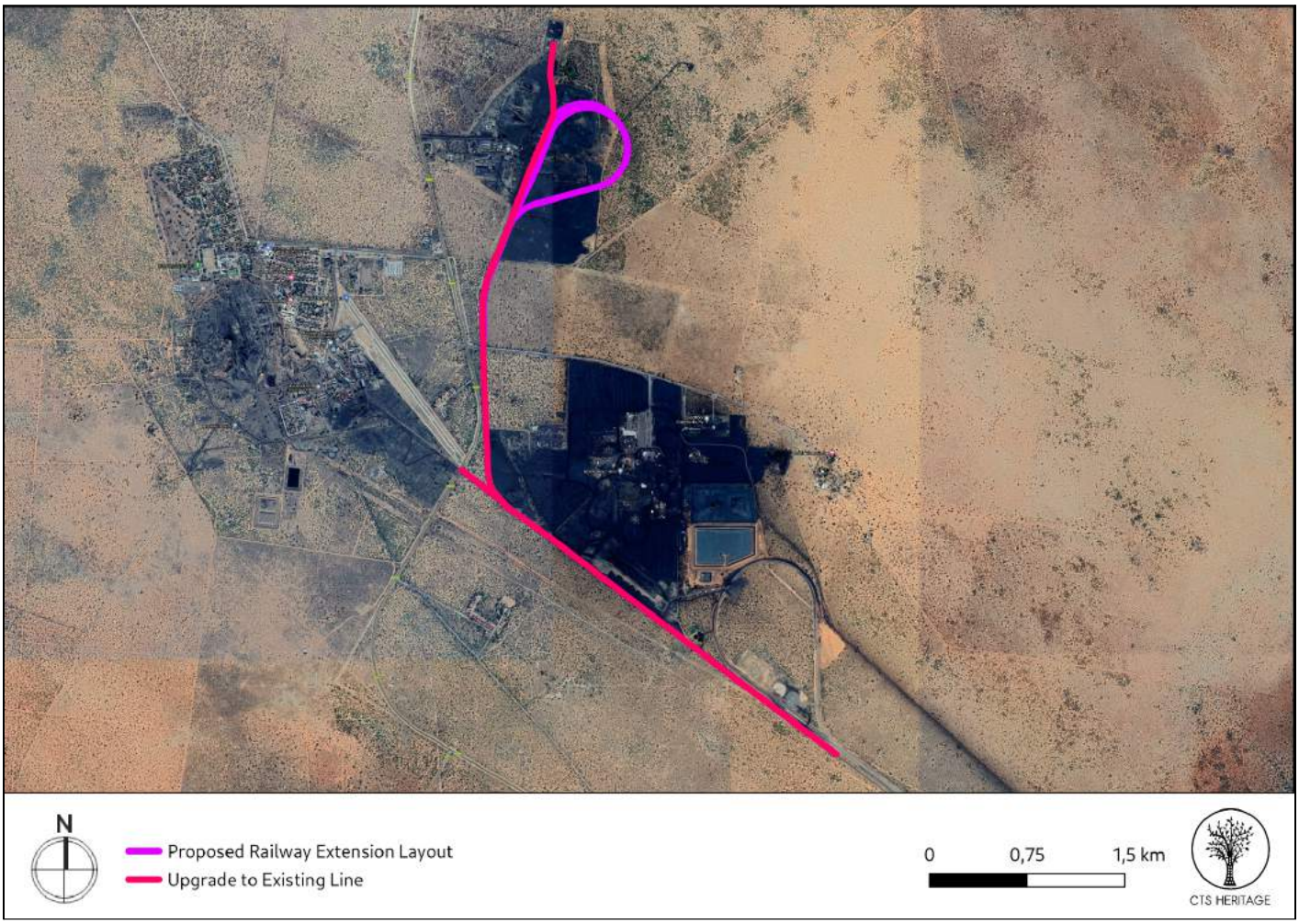

Figure 1.2: Satellite image indicating proposed location of infrastructure upgrades and new development

Figure 1.3: Satellite image indicating proposed location of new development

2. METHODOLOGY

2.1 Purpose of HIA

The purpose of this Heritage Impact Assessment (HIA) is to satisfy the requirements of section 38(8), and therefore section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

2.2 Summary of steps followed

- A Desktop Study was conducted of relevant reports previously written
- An archaeologist conducted a walk-through of the area proposed for development on 2 June 2021

- The identified resources were assessed to evaluate their heritage significance
- Alternatives and mitigation options were discussed with the Environmental Assessment Practitioner

2.3 Assumptions and uncertainties

- The *significance* of heritage resources is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.
- It should be noted that archaeological and palaeontological deposits often occur below ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted, and it would be required that the heritage consultants are notified for an investigation and evaluation of the find(s) to take place.
- It is further assumed that the fossil potential of a formation in the Project Area will be typical of that found in the region and more specifically, similar to that already observed in the surrounds of the Project Area. In many cases the information on fossil content is limited to the basics, such as in the case of geological mapping when the fossils are not the immediate focus. Scientifically important fossil shell and bone material is expected to be sparsely scattered in these coastal-plain deposits, but unless large and obvious, is not generally seen, under-estimating the fossil prevalence. Much depends on careful scrutiny of exposures and on spotting fossils as they are uncovered during digging *i.e.* by monitoring excavations. A limitation on predictive capacity exists in that it is not possible to predict the buried fossil content of an area or formation other than in general terms.

2.4 Constraints & Limitations

It was difficult to gain access to all the areas of the proposed development footprint due to the high levels of security associated with the mine. Certain areas were out of bounds to survey for impacts to archaeological resources but these areas were mostly within the mine perimeter where the site footprint is already very disturbed.

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3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

3.1 Heritage Context of area proposed for development

The area proposed for the railway infrastructure upgrade and the new rail balloon is located within the existing Wessels Mine in close proximity to the town of Hotazel in the Northern Cape. Hotazel was designated as a town in the 1950's in order to service the surrounding manganese mines. As per Figure 2, the area proposed for development as well as its surroundings have previously been assessed for impacts to heritage resources. The specific area proposed for development in this application has been looked at by Hutton and Hutton (2013, SAHRIS NID 145193) and Kusel and van der Ryst (2009, SAHRIS NID 8383) who conducted an assessment for the neighbouring Black Rock Mine. These reports are relied on below to provide some insight into the heritage sensitivities of the area proposed for development.

According to Kusel and van der Ryst (2009), "The first Geologist to have surveyed the Northern Cape was Dr. A. W. Rogers of the Geological Commission of the Cape Colony in 1906. One of the features he noted was a small hill called Black Rock and reported on the presence of manganese ore at the base of the hill. In 1940 Associated Manganese Mines of South Africa acquired the manganese outcrop known as Black Rock and shortly afterwards started mining the deposit… A large black outcrop of Manganese ore is the outstanding feature in the landscape of the Black Rock mining area. This outcrop was mined since the 1940's both by open cast and underground mining… The original Black Rock outcrop and mining represent an important part of the mining history of Manganese mining in South Africa". For this reason, Kusel and van der Ryst (2009) recommend, among other things, that the Black Mountain Mine be declared as a National Heritage Site; however, no evidence of this recommendation being implemented has been identified.

Both Hutton and Hutton (2013) and Kusel and van der Ryst (2009) identified Early, Middle and Later Stone Age archaeological resources located within proximity of the proposed development (Figure 3). Hutton and Hutton (2013) and Kusel and van der Ryst (2009) both indicate that the identified artefacts are predominantly located along the Kuruman and Ga-Mogara River banks. Hutton and Hutton (2013) note that no heritage resources were identified in the areas located away from the rivers, described as consisting of "red Kalahari sands with little vegetation cover."

As per Figure 3, the heritage resources known from the broader area that are not associated with the banks of

surrounding rivers include a burial identified by Kusel and van der Ryst (2009) and two structures identified by Van Vollenhoven (2012, SAHRIS ID 48871). This burial site (SAHRIS SIte ID 45910) is described as “The area is fenced off and has some 60+ graves. The graves are those of black mine workers who died at the mine. The graves are unmarked with no tombstones. Only one grave has a date of 8/7/74. The cemetery most probably represents the graves of black mine workers from the 1940’s to the 7 1970’s. The graves are not visited any more by relatives as no grave goods are present. Most probably these graves are from migrant mine workers from far afield.” Sites 39460 and 39463 are both described by Van Vollenhoven (2012) as limestone houses, each date to the 1920’s and are likely the original farmsteads for their respective farms. Based on the information available, the area proposed for the upgrade of the railway infrastructure and proposed new rail balloon does not constitute a sensitive archaeological landscape and as such, it is unlikely that significant archaeological and built environment resources will be negatively impacted by the proposed development.

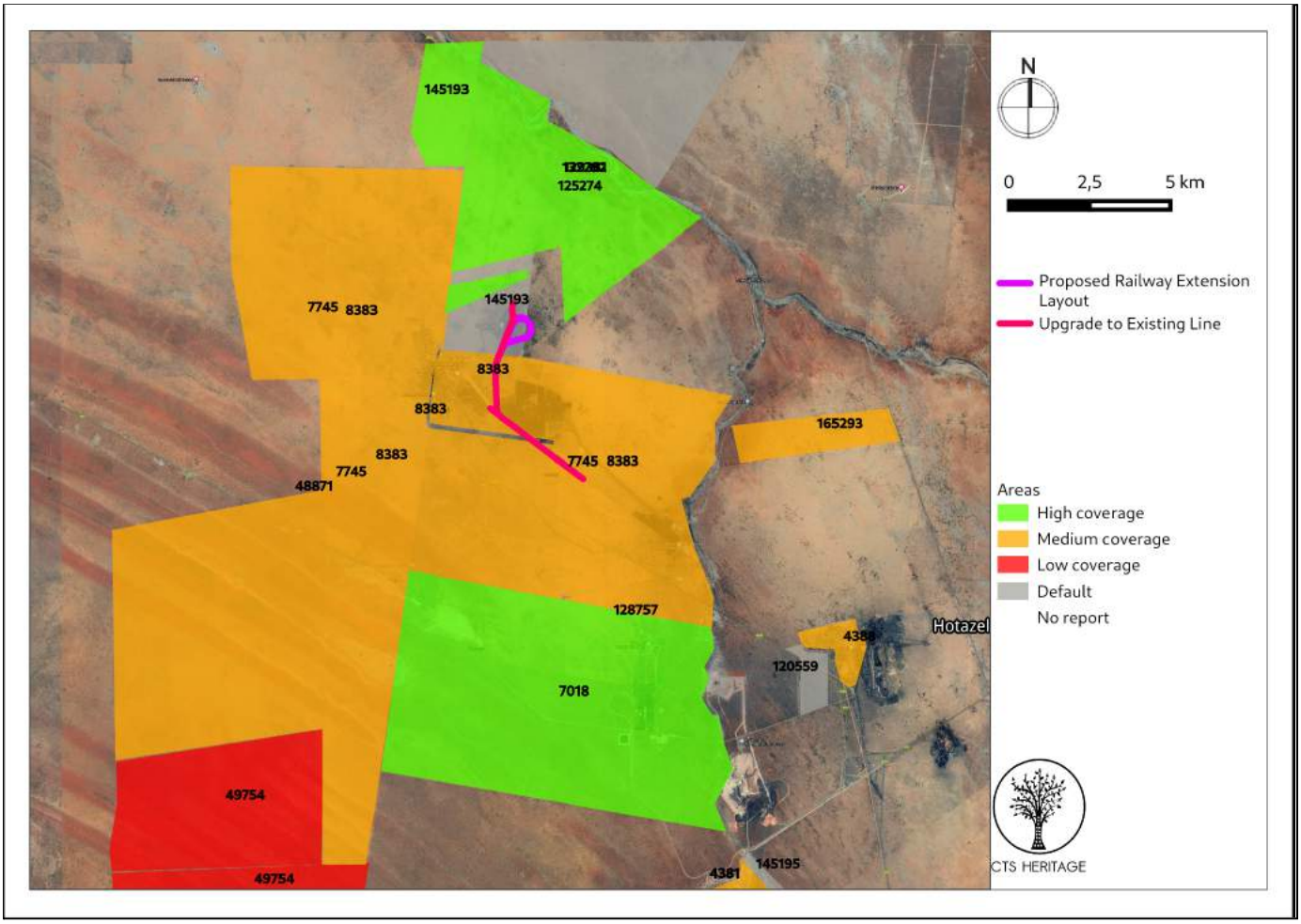

Figure 2.1: Spatialisation of heritage assessments conducted in proximity to the proposed development taken from SAHRIS (June, 2021)

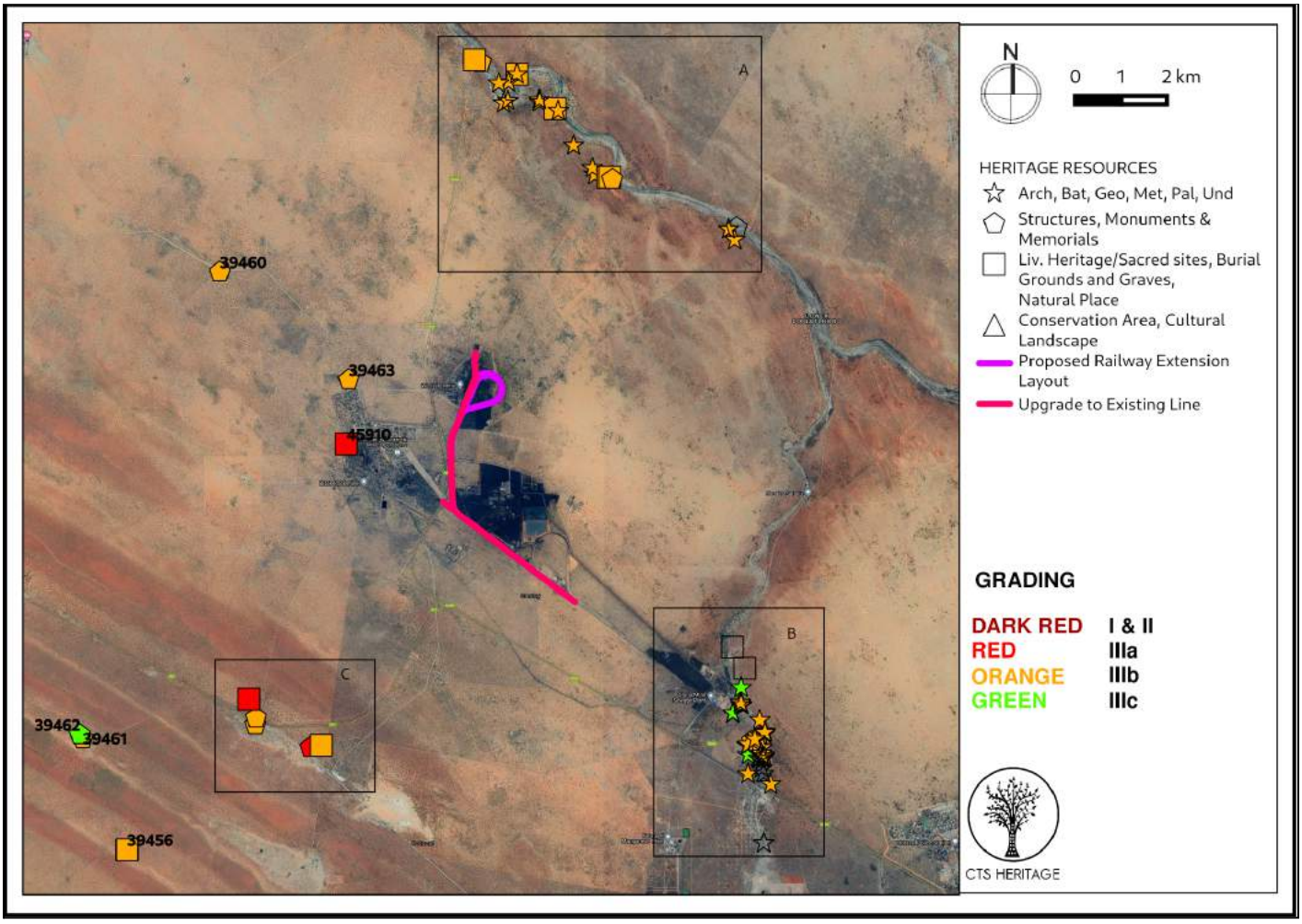

Figure 2.2: Spatialisation of known heritage resources in proximity to the proposed development (see Appendix for insets and list of resources)

3.2 Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4), the area proposed for development is underlain by sediments of moderate palaeontological sensitivity. According to the extract from the Council of GeoScience Kuruman Map 2722 (Figure 5), the development area is underlain by red to flesh-coloured wind-blown sands. This corresponds with the findings of the HIA completed by Hutton and Hutton (2013) who note that geology "mainly consist(s) of aeolian red sand and the occasional surface calcrete with deep sandy soils of Hutton and Clovelly soil forms. The Kuruman River and associated river banks are embedded within the Kalahari sediments that cover

the Precambrian metamorphic crust. The riverbeds are silty, sandy and rocky and poorly drained."

As such, it is very unlikely that the proposed development will negatively impact on significant palaeontological heritage; however, it is recommended that the attached Chance Fossil Finds Procedure be implemented for the duration of construction activities.

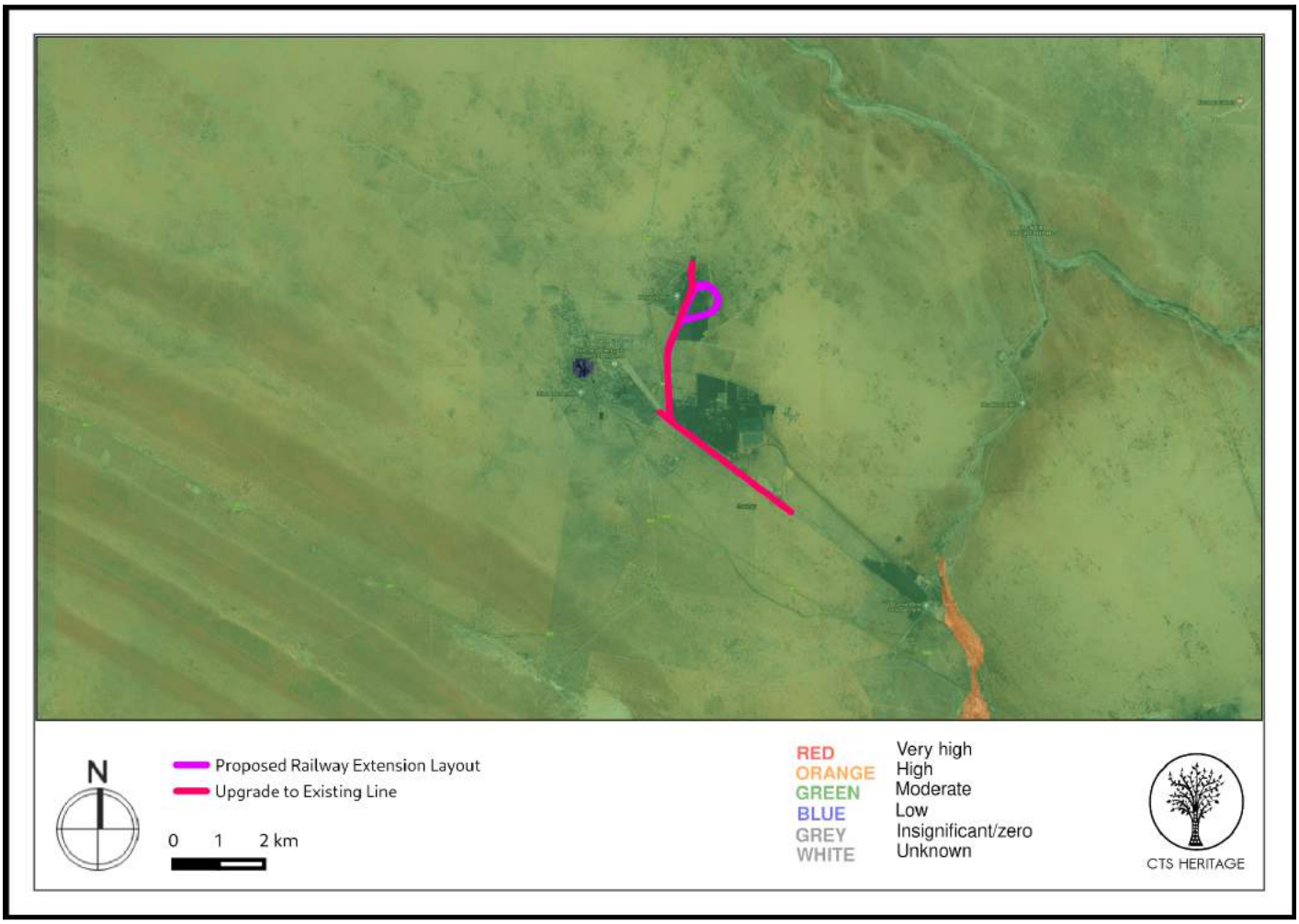

Figure 3.1: Palaeontological sensitivity of the proposed development area

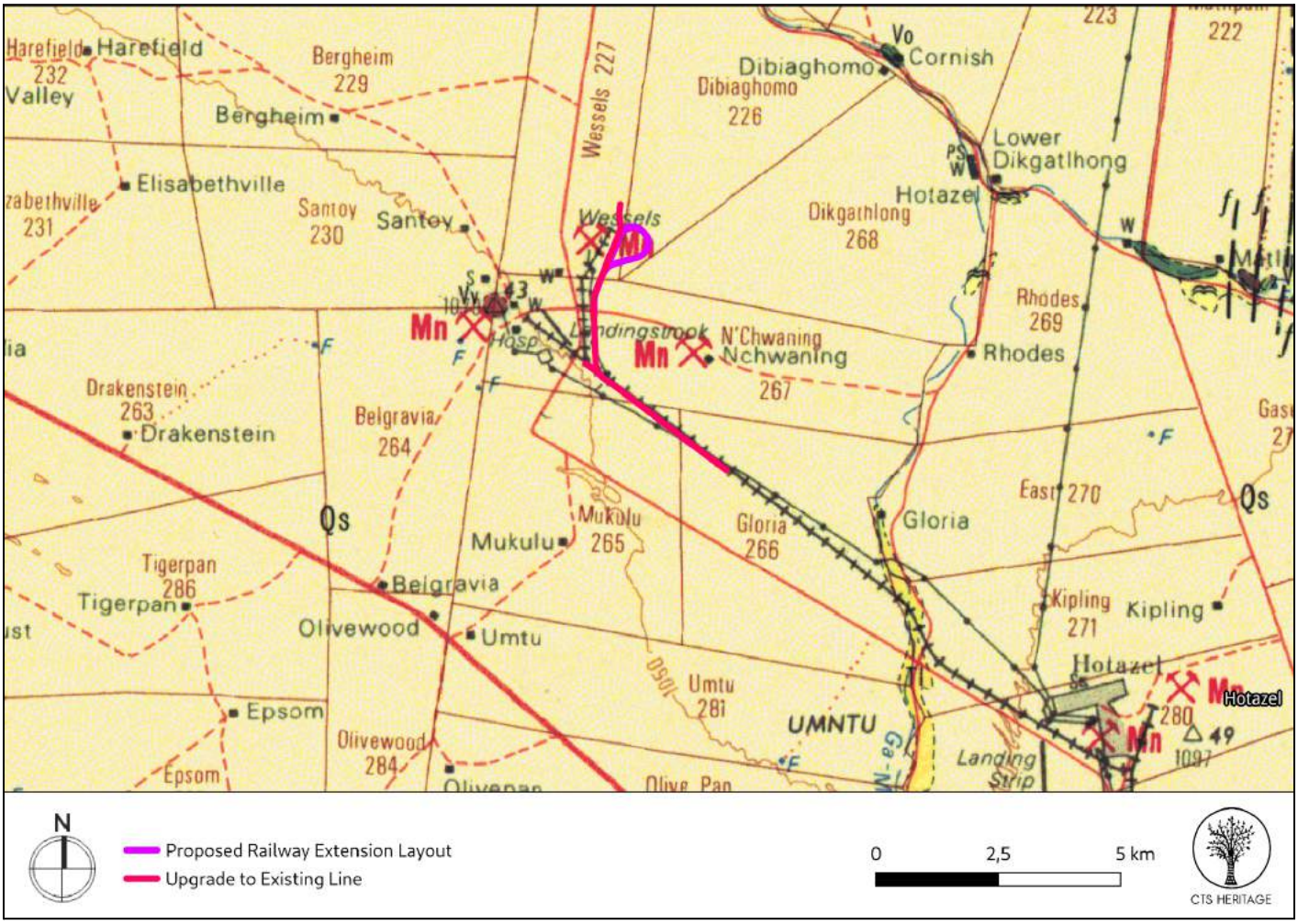

Figure 3.2: Extract from the Council for GeoScience Kuruman Map 2722 indicating that the area proposed for development is underlain by QC - red to flesh-coloured wind-blown sands

4. IDENTIFICATION OF HERITAGE RESOURCES

4.1 Summary of findings of Specialist Reports

The field assessment identified no heritage resources located within or in close proximity to the proposed development area.

Figure 4.1 Contextual image of development area

Figure 4.2 Contextual image of development area

Figure 4.3 Contextual image of development area

Figure 4.4 Contextual image of development area

Figure 4.5 Contextual image of development area

Figure 4.6 Contextual image of development area

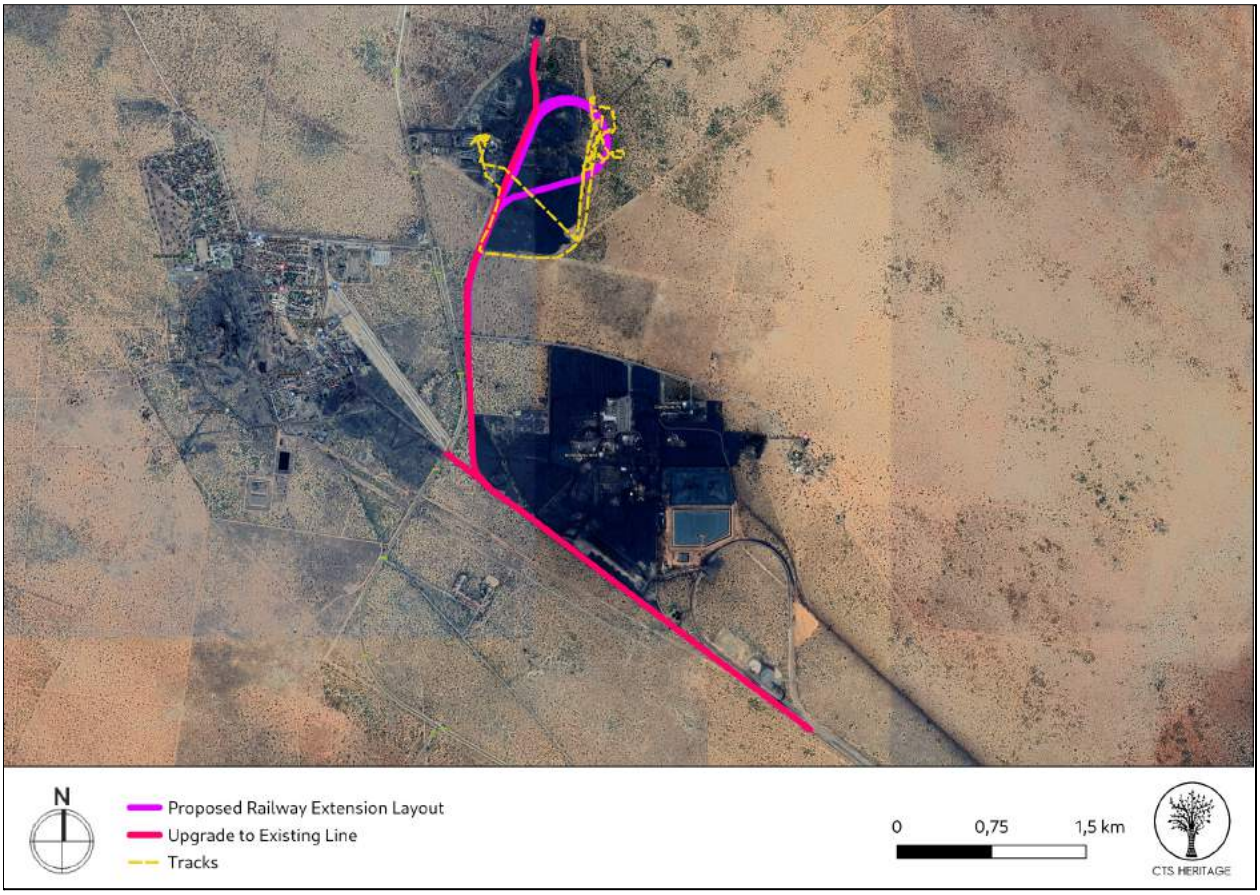

Figure 5: Track paths followed by archaeologist

4.2 Heritage Resources identified

No heritage resources were identified within the area proposed for development. No graves were located or identified in the field assessment. Furthermore, no intangible heritage resources were identified. Interviews with mining officials revealed no known oral histories associated with this area or remnants of graves or symbolic heritage.

5. ASSESSMENT OF THE IMPACT OF THE DEVELOPMENT

5.1 Assessment of impact to Heritage Resources

The results of the study indicate that the proposed development site is not a sensitive archaeological landscape, and has been highly transformed by historical agriculture and industrial mining development. The proposed development will have no impact on any significant archaeological resources.

There are no significant natural landscape features on the proposed site or in the surrounding area. Furthermore, there are no indications of any structures of cultural significance located within the proposed development area.

Due to the extensively disturbed nature of the area proposed for development, it is assumed that heritage resources have been impacted by construction and mining activities. The small eastern section of the balloon/ site footprint is located within a mostly undisturbed landscape. This area was thoroughly surveyed on foot and no evidence of any heritage or cultural material was identified.

According to the extract from the Council of GeoScience Kuruman Map 2722 (Figure 5), the development area is underlain by red to flesh-coloured wind-blown sands. This corresponds with the findings of the HIA completed by Hutton and Hutton (2013) who note that geology "mainly consist(s) of aeolian red sand and the occasional surface calcrete with deep sandy soils of Hutton and Clovelly soil forms. The Kuruman River and associated river banks are embedded within the Kalahari sediments that cover the Precambrian metamorphic crust. The riverbeds are silty, sandy and rocky and poorly drained." As such, it is very unlikely that the proposed development will negatively impact on significant palaeontological heritage; however, it is recommended that the attached Chance Fossil Finds Procedure be implemented for the duration of construction activities.

Due to the nature of the landscape and disturbed site footprint, it is unlikely that the proposed development will negatively impact on significant heritage resources.

5.2 Sustainable Social and Economic Benefit

From the client:

The project is motivated by the inefficiency of the current railway configuration, which does not allow for optimal and cost-effective loading of manganese ore and product from the mine for transport to the market. The

proposed project would allow for more ore to be loaded onto the railway carts in a shorter space of time, hereby increasing outputs and productivity. It would also decrease the need for road transport, which is considered more expensive and inefficient in relation to rail transport. A staff complement of approximately 250 individuals will be required for the construction phase, hereby providing skilled and unskilled job opportunities. Procurement opportunities will be sourced locally, as far as possible.

As no impacts to heritage resources are anticipated, the socio-economic benefits outweigh the impacts to heritage resources.

5.3 Proposed development alternatives

Two development alternatives are proposed (Figure 1.2). The alternatives different in terms of footprint size. Alternative 2 would require the reconfiguration of the road intersection R380 x Access road to Nchwaning Mine and as such, this alternative is not preferred by the developer.

As no impacts to heritage resources are anticipated from either alternative, there is no preferred alternative in terms of impacts to heritage resources.

6. PUBLIC CONSULTATION

Public Participation on this HIA is being undertaken as part of a legislated Basic Assessment process. The BAR and EMPr will be updated to include any comments received during the pre-application notification period and will be made available for public review (for 30 calendar days). Registered I&APs will be notified when the BAR and EMPr will be available for review via SMS and email. Full copies of the BAR and EMPr will be made available on SLR's website and SLR's data-free website. A Non-Technical Summary will also be made available on SLR's websites and would be translated into Afrikaans and Setswana. Any heritage comments will be referred to SAHRA.

7. CONCLUSION

The site proposed for development is located within an area of low cultural landscape significance consisting predominantly of industrial mining development and agricultural fields intersected with roads. The results of the study indicate that the proposed development site is not a sensitive archaeological landscape, and has been

highly transformed by historical agriculture and industrial development. The proposed development will have no impact on any significant archaeological or cultural landscape heritage resources.

According to the extract from the Council of GeoScience Kuruman Map 2722 (Figure 5), the development area is underlain by red to flesh-coloured wind-blown sands. This corresponds with the findings of the HIA completed by Hutton and Hutton (2013) who note that geology "mainly consist(s) of aeolian red sand and the occasional surface calcrete with deep sandy soils of Hutton and Clovelly soil forms. The Kuruman River and associated river banks are embedded within the Kalahari sediments that cover the Precambrian metamorphic crust. The riverbeds are silty, sandy and rocky and poorly drained."

As such, it is very unlikely that the proposed development will negatively impact on significant palaeontological heritage; however, it is recommended that the attached Chance Fossil Finds Procedure be implemented for the duration of construction activities.

8. RECOMMENDATIONS

There is no objection to the proposed development on heritage grounds and the following is recommended:

4. No mitigation is required prior to construction commencing.
5. The attached Chance Fossil Finds Procedure (Appendix 3) must be implemented during the construction phase of development, and included in the EMPr
6. If any archaeological resources or unmarked human remains are uncovered or exposed during excavations these must immediately be reported to the South African Heritage Resources Agency (SAHRA) (Att: Ms Natasha Higgitt 021 462 4502). Burials must not be removed until inspected by a professional archaeologist.

9. REFERENCES

Impact Assessment References				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
4388	AIA Phase 1	Peter Beaumont	14/06/2008	Phase 1 Archaeological Impact Assessment Report on Areas at Hotazhel Mine on the Farm Hotazhel 280, Kgalagadi District Municipality, Northern Cape Province
7018	AIA Phase 1	Wouter Fourie, Jaco van der Walt	31/03/2007	Kalahari Manganese Mines: Heritage Assessment on Umtu 281, Olive Pan 282, Gama 283
7745	AIA Phase 1	Anton Pelser, Anton van Vollenhoven	03/05/2011	A REPORT ON A HERITAGE IMPACT ASSESSMENT (HIA) FOR A PROPOSED NEW RAIL CROSSING OVER THE GAMAGARA RIVER FOR THE GLORIA MINE OPERATIONS, ASSMANG BLACK ROCK, ON GLORIA 266, NORTH OF HOTAZEL, NORTHERN CAPE
8383	HIA Phase 1	Udo Kusel, M van der Ryst	18/09/2009	Cultural Heritage Resources impact assessment of manganese mining areas on the farms Belgravia 264, Santoy 230, Gloria 226 and Nichwaning 267, at Black Rockm North of Kuruman, Kgalagadi District Municipality, Northern Cape Province.
48871	HIA Phase 1	Anton van Vollenhoven	01/04/2012	A REPORT ON A HERITAGE IMPACT ASSESSMENT FORTHE PROPOSED MAIN STREET 778 (PTY) LTD MINING RIGHT APPLICATION CLOSE TO HOTAZEL, NORTHERN CAPE PROVINCE
49754	Heritage Scoping	Tobias Coetzee	31/07/2012	ARCHAEOLOGICAL SCOPING REPORT FOR THE PROPOSED PROSPECTING FOR IRON ORE AND MANGANESE ORE FOR AMARI MANGANESE (PTY) LTD ON THE FARMS CONSTANTIA 309, SIMONDIUM 308 AND PORTIONS 1, 2, 3 AND 8 OF THE FARM GOOLD 329 IN THE VICINITY OF District Municipality: Kgalagadi Northern Cape Province SOUTH AFRICA
120559	HIA Phase 1	Robert de Jong	16/05/2010	HIA PROPOSED LAND USE CHANGE TO PROVIDE FOR THE EXTENSION OF THE TOWN OF HOTAZEL PHASE III
125274	Heritage Impact Assessment Specialist	Wouter Fourie	22/07/2013	Tshipi Ã© Ntle Manganese Mining: Prospecting on Remaining extent of the farm Wessels 227 and Portions 1 and 2 and the remaining extent of the farm Dibiaghomo 226, near Black Rock in the Northern Cape Province, Heritage Impact Assessment

	Reports			
128757	Archaeological Specialist Reports	Wouter Fourie	14/05/2013	Prospecting activities on the farm Gloria 266, near Hotazel in the Northern Cape Province Heritage Impact Assessment
129381	HIA Phase 1	Wouter Fourie	17/07/2013	Lehating Heritage Impact Assessment Proposed Lehating Mining (Pty) Ltd underground manganese mine on Portions 1 of the Farm Lehating 714 and Portion 2 of the farm Wessels 227, approximately 20km northwest of Hotazel, Northern Cape Province
132292	HIA Phase 1	Wouter Fourie		Heritage Impact Assessment for the Proposed Lehating Mining (Pty) Ltd underground manganese mine on Portions 1 of the Farm Lehating 714 and Portion 2 of the farm Wessels, 227, approximately 20km northwest of Hotazel, Northern Cape Province
145193	HIA Phase 1	Louisa Hutten, Willem Hutten	18/11/2013	HIA report for Boerdraai 228 and Wessels 227 portion 2
165293	AIA Phase 1	Neels Kruger	18/05/2014	ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) OF A DEMARCATED SURFACE PORTION ON THE FARM RHODES 269 FOR THE PROPOSED RHODES 1 PHOTOVOLTAIC POWER PLANT & ACCESS ROAD DEVELOPMENT, JOE MOROLONG LOCAL MUNICIPALITY, JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE

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APPENDICES

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APPENDIX 1: Desktop Screening Assessment

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APPENDIX 2: Archaeology Field Notes - June 2021

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APPENDIX 3: HWC Chance Fossil Finds Procedure