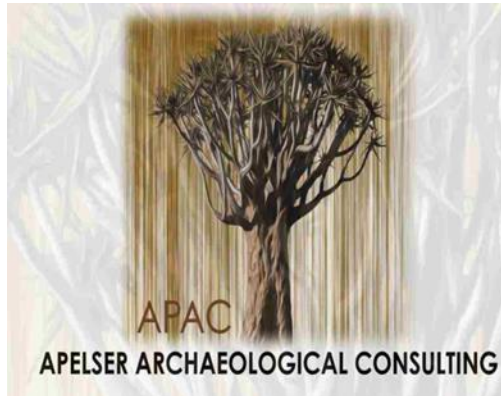




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CK 2006/014630/23 **VAT NO.: 4360226270**

**Phase 1 HIA & Report for the proposed Kinetic Development Group Limited (KDG)
ferroalloys/ferrochrome smelter plant on the farms Van Der Bijl 528 MS and Dreyer 526
MS within the Musina-Makhado Local Municipalities of the Limpopo Province.**

For:

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REPORT: **APAC025/71A**

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SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Gudani Consulting Environmental & Social Scientists to conduct a Phase 1 Heritage Impact Assessment for the proposed Kinetic Development Group Limited (KDG) ferroalloys/ferrochrome smelter plant (125Ktpa – 1Mtpa) on the farms Van Der Bijl 528 MS and Dreyer 526 MS (Zone/Stand 12 and 31) within the Musina-Makhado Local Municipalities in the Limpopo Province.

Background research indicated that there are a number of cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls, including some located in and close to the proposed development area footprints. Over and above the already recorded sites, the May 2025 field-based assessment did not identify any additional sites, features or material of cultural heritage (archaeological and/or historical) origin or significance in the study & proposed development area footprints. This report discusses the results of the assessment, and provides recommendations on the required mitigation measures at the end.

From a Heritage perspective it is recommended that the proposed KDG development be allowed to continue, once the recommended mitigation measures put forward at the end of the report have been implemented.

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1. INTRODUCTION

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The client indicated the location of the study & proposed development area footprints, and the field-based assessment focused on these land parcels.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;
6. To assess the known grave site on the property in order to determine the exact number of graves located here and to provide recommendations on the way forward to mitigate the negative impacts on the graves and site;

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two Acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1. The National Heritage Resources Act (Act 25 of 1999)

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of the Act deals with archaeology, palaeontology and meteorites. The Act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

3.2. The National Environmental Management Act (Act 107 of 1998)

This Act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

The specific requirements that specialist studies and reports must adhere to are contained in Appendix 6 of the EIA Regulations.

4. METHODOLOGY

4.1. Review of Literature

A review of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography. These include Bergh (1999), Huffman (2007) & Lombard et.al (2012).

4.2. Field survey

The field assessment component of the study was conducted between the 12th and 14th of May 2025 according to generally accepted HIA practices and aimed at locating all possible objects, sites, and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

An on-foot & vehicular survey of the demarcated areas was undertaken.

4.3. Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

4.4. Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

4.5. Limitations

Dense vegetation cover in sections limited visibility and mobility on the ground, although there were also some more open areas that could be focused on.

5. DESCRIPTION OF THE AREA & PROJECT

The proposed Kinetic Development Group Limited (KDG) ferroalloys/ferrochrome smelter plant is located on the farms Van Der Bijl 528 MS and Dreyer 526 MS (Zone/Stand 12 and 31) within the Musina-Makhado Local Municipalities of the Limpopo Province. The proposed ferroalloys/ferrochrome smelter plant will be within the existing and approved Musina-Makhado Special Economic Zone (MMSEZ).

Kinetic Development Group Limited (KDG) intends to develop and establish a ferrochrome and ferroalloys smelter plant within the approved MMSEZ area. The scale of the project is planned to the annual output of 125 000 to 1 000 000 tons, and 2 x 33,000 kVA electric furnaces and their supporting facilities are built. The design shall include general, electric furnace smelting system, raw material system, pellet and roasting process, general transportation, power supply and distribution and electrical facilities (including 132kV transformer station), water supply and drainage system (water, turbidity circulating water system), including ventilation, dust removal, thermal and gas facilities, computer, telecommunications, mechanical repair, inspection, construction, structure, energy analysis and evaluation, environmental protection, occupational safety and health and fire protection, labour and training, project investment estimates, technical economy and evaluation.

Main facilities within the Project scope include:

High-carbon ferrochrome production workshop; Chromium furnace baking workshop (reserved); Raw materials, batching and feeding system; Charcoal dry; Furnace gas purification and dust removal system; Dust removal system in the production area; Compressed air preparation; 132KV (power supply) substation and the capacitor compensation device; Power supply and distribution, electrical control, automation instruments, telecommunications facilities; Whole-plant control system; Industrial TV monitoring system; Machine repair shop; Electrode shell production workshop; Water source connected to the production plant purification water supply system; Net ring water system; Turbidity water system; Production and living water supply and drainage system; Whole-plant fire protection system; Ventilation and air-conditioning system; General map of transport and roads, walls, gates; Factory area office building; Laboratory room; Raw material storage yard, spare parts warehouse, finished product warehouse; Raw materials into the factory, finished products factory loadometer duty room; Fire protection, safety, environmental protection and other basic facilities and Slag disposal pit.

The following associated infrastructure is also envisaged:

- Access roads;
- Diesel storage tanks;
- Pipelines to Pollution Control Dams (PCDs);
- Berms to separate dirty/clean water;
- Temporary overburden stockpiles;
- Waste rock dumps;
- Topsoil storage dumps;
- Offices.

The study area is located in the Subtropical Plateau climatic region and consists of Savanna type vegetation. The elevation of the study area varies between 650 and 750m above sea level, and is therefore fairly flat and open with very few rocky outcrops or ridges present. Some fairly extensive Impact Assessments has been conducted previously in the larger MMSEZ area, including sections of the current study area, identifying and recording a

number of cultural heritage (archaeological and/or historical) sites and features here that need to be taken cognizance of.

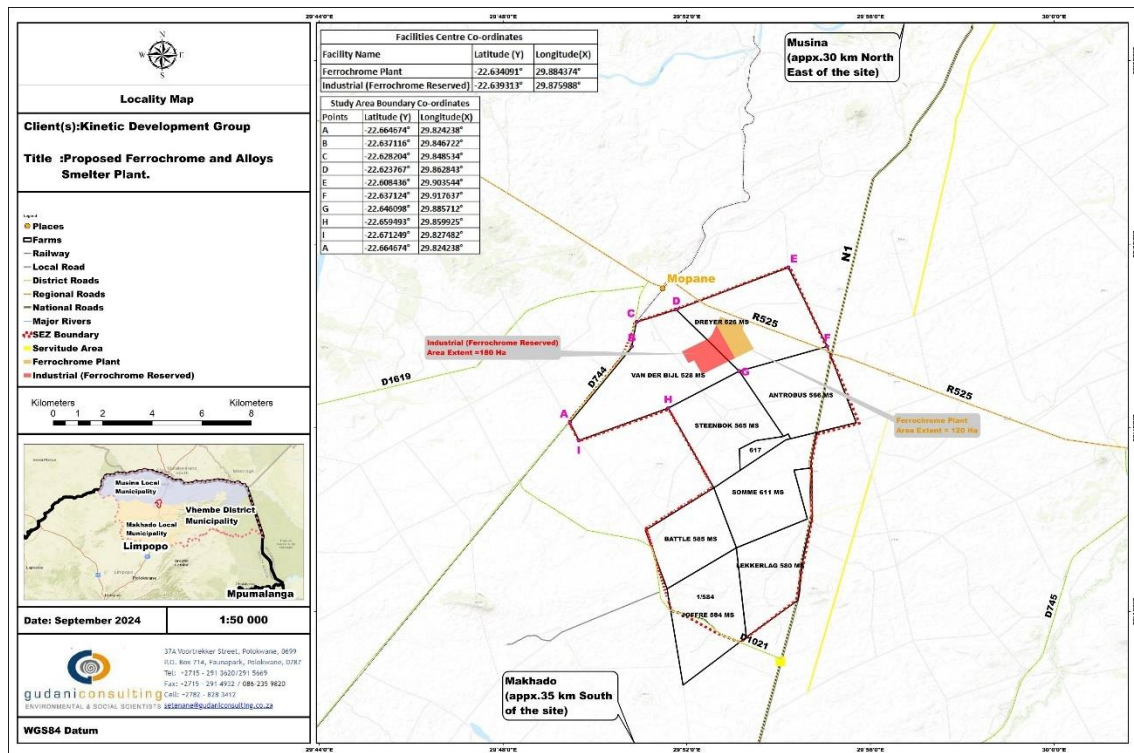


Figure 1: Locality Map (courtesy Gudani Consulting Environmental & Social Scientists).

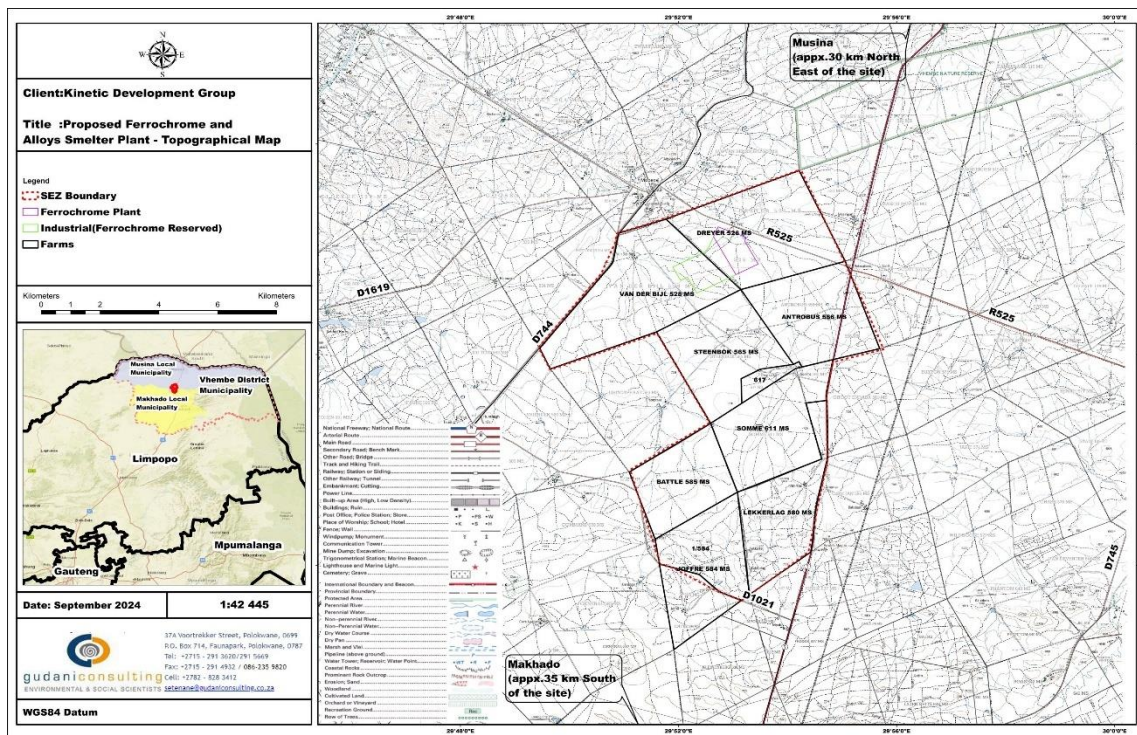


Figure 2: Topographical Location Map (courtesy Gudani Consulting Environmental & Social Scientists).

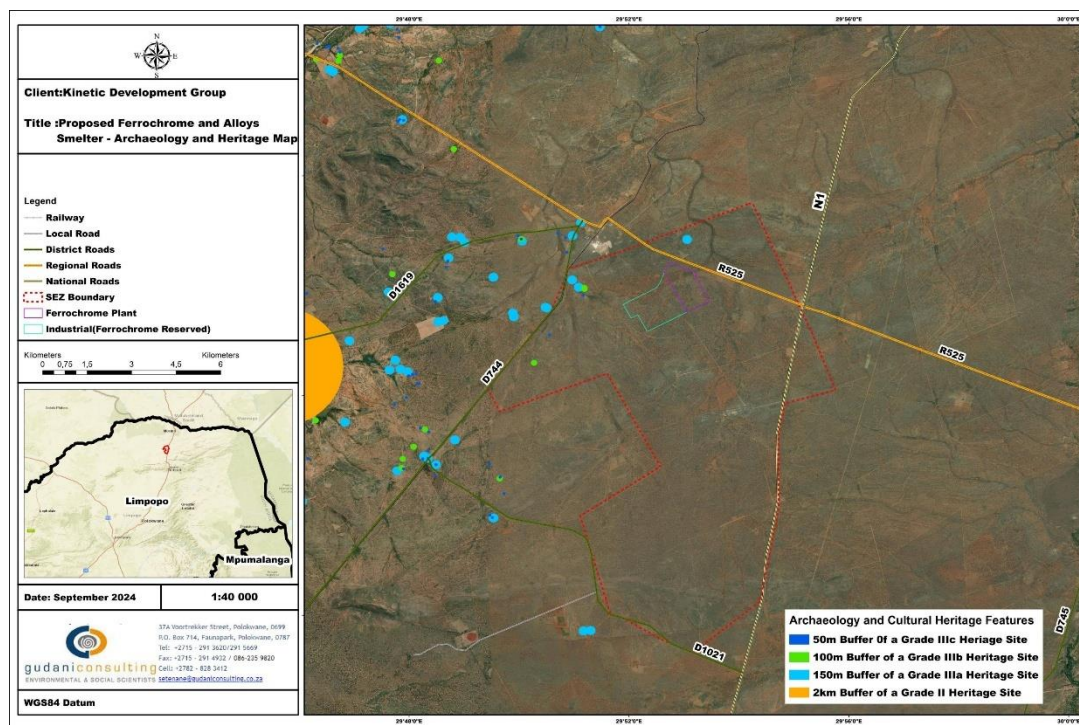
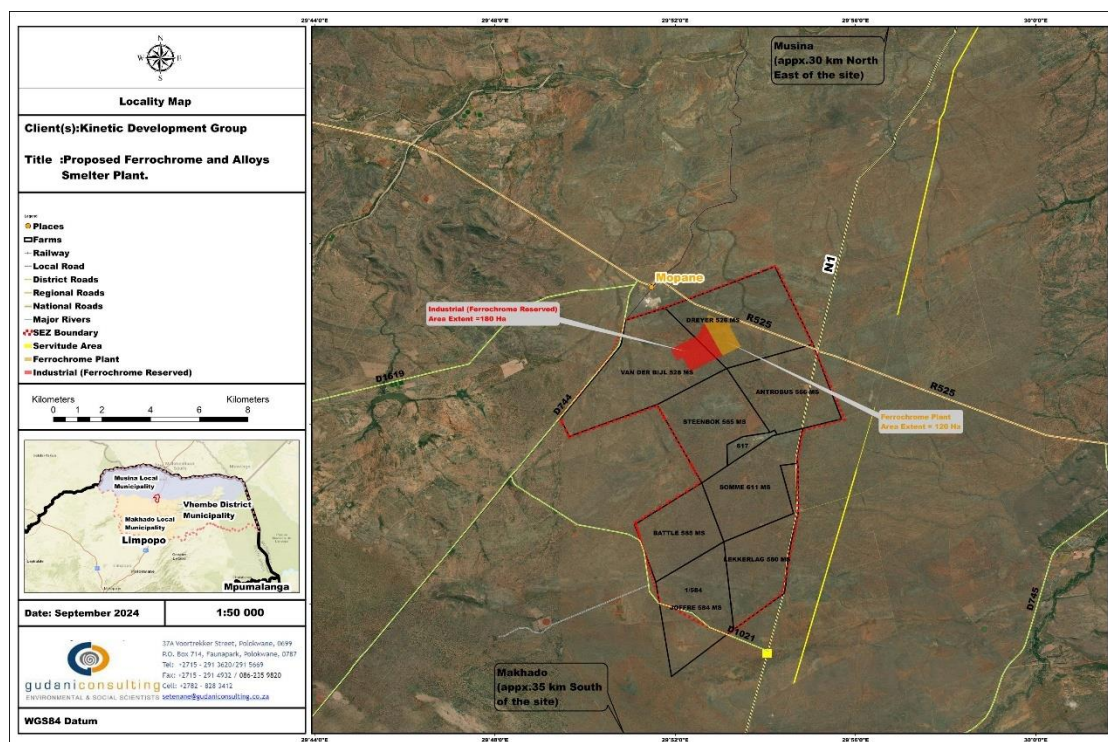




Figure 5: Closer view of the area assessed in May 2025 (@Google Earth: courtesy Hannes Visser May 2025).



Figure 6: View of the typical landscape & vegetation in the study & proposed development area (courtesy Hannes Visser May 2025).



Figure 7: Another general view of part of the area. Although vegetation cover was very dense in most sections, parts were more open and accessible. (courtesy Hannes Visser May 2025).



Figure 8: Another fairly open area with little grass cover (courtesy Hannes Visser May 2025).



Figure 9: Some dirt tracks and footpaths assisted with the assessment. The very dense vegetation cover can be seen in this image (courtesy Hannes Visser April 2025).

6. DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided in basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago

Middle Stone Age (MSA) less than 300 000 – 20 000 years ago

Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

No Stone Age sites (including rock art) are known to occur in the immediate study area. The closest known Stone Age sites are located at Kalkbank & Makgabeng south and south-west of the study area (Bergh 1999: 4), while known rock art (paintings) sites are located to the south of the study area and around Makhado & Schoemansdal (Bergh 1999: 5). Most of the

Stone Age research in the region is focused in the Sashi-Limpopo about 70km West of the study areas (Vhufahashu Consultants 2021).

No Stone Age sites or material were identified in the study areas during the May 2025 assessment. During the 2021 assessment in the area an isolated single Stone Age flake tool were recorded (Vhufahashu Consultants 2021: 28). If any Stone Age material are to be found in the area, then it would more than likely be single or small scatters of stone tools in an open-air surface context.

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D

Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.

Middle Iron Age (MIA) 900 – 1300 A.D.

Late Iron Age (LIA) 1300 – 1840 A.D.

There are no known Iron Age sites (EIA or LIA) in the immediate study area, although a large number of EIA to LIA sites are known to exist in the larger geographical landscape in which the study area falls. This includes the sites of Klein Afrika & Happy Rest (EIA) located north & west of Louis Trichardt respectively, and the sites of Verulam, Verdun & Machemma (LIA) north of the study area (Bergh 1999: 6-7). Known Early Iron Age sites are found in the Nzhelele valley East of the study area (Prinsloo 1974).

Tom Huffman's research work shows that Iron Age sites, features or material could possibly be found in the area. This could include the so-called Silver Leaves facies of the Urewe Tradition dating to between AD280 and AD450 (Huffman 2007: 123); Mzonjani facies of the same tradition dating to between AD450 and AD750 (p.127); Icon facies of Urewe dating to between AD1300 and AD1500 (p.183); the Happy Rest facies of the Kalundu Tradition dating to between AD500 & AD750 (p.219); the Malapati facies of Kalundu dating to between AD750 & AD1030 (p.239); the Tavhatshena facies of Kalundu dating to between AD1450 & AD1600 (p.263); the Letaba facies of Kalundu dating to between AD1600 & AD1800 (p.267) and finally the Mutamba facies of the same tradition dating to between AD1250 and AD1450 (Huffman 2007: 271).

Again, no Iron Age sites, features or cultural material was identified during the May 2025 fieldwork, similar to the results of the earlier assessment by Vhufahashu Consultants in 2021.

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. The first European group to pass close by the area were that of Coenraad de Buys in 1821 and 1825, followed by groups of Voortrekkers after 1844 (Bergh 1999: 12-14). Schoemansdal (originally Zoutpansbergdorp) was established in 1848, and finally abandoned as a result of conflict with local groups in July 1867 (Bergh 1999: 131; 187). The town of Louis Trichardt was formally established in February 1899 (Bergh 1999: 147). During the Anglo-Boer war (1899-1902) there was a skirmish between British and Boer forces at Fort Edward near Louis Trichardt between 20 and 28 March 1902 (Bergh 1999: 54). The historical heritage of the area consists mostly of farmsteads, other farming-related features and grave sites.

Two sites (recorded previously in the area by Vhufashu Consultants) were re-recorded in May 2025, but other than these no additional historical period sites were identified and recorded here.

Results of the May 2025 Assessment

During the 2021 Phase 1 HIA in the larger MMSEZ area by Vhufashu Consultants a total of 30 sites were recorded. These sites range between the Stone Age to historical and contemporary built structures, as well as burial grounds. Burial grounds were predominant (13), and these comprised of 19 graves, followed by historical and contemporary built structures (16) which included hunting camps (7), farmhouses and labourer camps (5), boreholes (2), a windmill (1), and a livestock drinking trough. The Stone Age was represented by an isolated single flake tool (Vhufashu Consultants 2021: 28).

As mentioned earlier the May 2025 field-based assessment for the Kinetic Development Group Limited (KDG) ferroalloys/ferrochrome smelter plant did not identify any Stone Age or Iron Age sites, features or remains, and no additional recent historical sites over and above the ones recorded in 2021. Two of the sites recorded in 2021 is located in the study & proposed development area (BG1 & Site 24).

Site BG1 contains a cluster of three graves belonging to the De Bruin family. These are located inside a fenced area, indicated by granite tombstones as grave dressings. The site is situated in proximity of an *Adonsonia Digitata* (Baobab) tree (Vhufashu Consultants 2021: 29).

GPS Coordinates: S22°37'38.00 E29°53'00.07.

Graves & Grave Sites always carry a High Significance Rating from a Cultural Heritage perspective. As such, due care should be taken to not impact on them in any way through development actions. If possible, these sites should be avoided and protected in situ.

There are two Options (mitigation measures) available in mitigating the possible impacts on a Grave Site by any development. These are as follows:

Option 1

The 1st and preferred option, is always be to leave the site and graves on it intact. This will entail demarcating the site with a proper boundary fence and providing an entrance gate for potential visitors (descendants/family members of the deceased). The site would also have to be clearly sign-posted as a Grave Site and will have to be cleaned and each grave marked, numbered and included in a Graves Register. A Graves Management Plan will have to be drafted and implemented as part of the Development. A 30m buffer zone (from the outside boundary fence of the site) will also have to be adhered to, with no development allowed in this exclusion zone.

Option 2

The 2nd Option available is the exhumation and relocation of the graves from the site. This entails the following:

- a. Detailed social consultation/public participation in the form of Newspaper Advertisements and the erection of site notices. This is in order to try and trace any possible descendants of the deceased buried here and to obtain their consent for the exhumation and relocation work. These advertisements and notices need to be run for 60 days before permit applications to various government and local authorities can be undertaken. This includes SAHRA, Department of Health, COGTA, local Municipality/ies and the SAP.
- b. Only once the permits have been issued, and all permissions (e.g., family consent) have been obtained, can the physical work be undertaken. A registered undertaker also needs to be contracted to be part of the process.

It needs to be noted that the costs involved with Option 2 can be high and that the time-delays can be quite long. However, with Option 1 the commitment to preserving the sites and the graves on them is ongoing and could lead to conflict with family members in terms of site visits/access and possible security issues.

Site 24 is an existing/operating hunting-camp (Vhufahashu Consultants 2021:28). The site and structures associated with it is not of historical heritage origin or significance (not older than 60 years of age) and no mitigation would be required from a cultural heritage point of view.

GPS Coordinates: S22°37' 51.00 E29° 52' 56.06.



Figure 10: Site BG1 - (@Hannes Visser May 2025).



Figure 11: View of the Site 24 Hunting Camp (@Hannes Visser May 2025).



Figure 12: Tracklogs for the assessment & location of known sites in the study and proposed development area (@Google Earth: courtesy Hannes Visser May 2025).

Impact Assessment and Mitigation Measures

The significance of impacts is determined using the following criteria:

Probability: describes the likelihood of the impact actually occurring

- **Improbable:** the possibility of the impact occurring is very low, due to the circumstances, design or experience.
- **Probable:** there is a probability that the impact will occur to the extent that provision must be made therefore.
- **Highly probable:** it is most likely that the impact will occur at some stage of the development.
- **Definite:** the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures or contingency plans to contain the effect.

Duration: the lifetime of the impact

- **Short Term:** the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- **Medium Term:** the impact will last up to the end of the phases, where after it will be negated.

- **Long Term:** the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
- **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

- **Local:** the impacted area extends only as far as the activity, e.g. footprint
- **Site:** the impact could affect the whole or measurable portion of the abovementioned property.
- **Regional:** the impact could affect the area including the neighboring residential areas.

Magnitude/Severity: Does the impact destroy the environment, or alter its function

- **Low:** the impact alters the affected environment in such a way that natural processes are not affected.
- **Medium:** the affected environment is altered, but functions and processes continue in a modified way.
- **High:** function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.

- **Negligible:** the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- **Low:** the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- **Moderate:** the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
- **High:** The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

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

Sum (Duration, Scale, Magnitude) x Probability

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

Only one site (BG1) of archaeological & historical cultural heritage origin or significance was recorded in the area during the May 2025 assessment. This is a Grave Site of High Significance and care should be taken to avoid any negative impacts on the site and graves

located here as a result of the proposed development and associated activities. However, should the recommended mitigation measures be implemented the potential impacts of the proposed development and associated activities will be minimized.

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short Term	1
	Medium Term	3
	Long Term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude)	x Probability
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

Results: $5+2+8 \times 2 = 30$ i.e. $>20 \leq 40$

The impact of the proposed development on cultural heritage sites in the study & proposed development areas is therefore deemed as Low based on the Impact Assessment criteria used. However, there is always a possibility of sites, features and material being missed as a result of various factors such as vegetation cover hampering visibility on the ground, as well as the often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves). These factors need to be taken into consideration and it is therefore recommended that a Chance Finds Protocol (CFP) be drafted and implemented for the proposed Kinetic Development Group Limited (KDG) ferroalloys/ferrochrome smelter plant development. A generic CFP is provided below:

Chance Find Protocol

A CFP will ensure that should any previously unknown sites, features or significant cultural material deposits are uncovered that these are reported to and investigated by a Heritage Specialist who will then provide recommendations on the way forward in terms of mitigation.

This Protocol applies to permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this Protocol is to establish monitoring and reporting procedures to ensure compliance with this Protocol and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds relating to heritage resources.

The term 'heritage resource' includes structures, archaeology, paleontology, meteors, and public monuments as per the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37.

Procedures specific to burial grounds and graves as defined under NHRA Section 36 will be discussed separately as these require the implementation of separate criteria for Chance Find procedures.

The following procedural guidelines must be considered in the event that previously unknown heritage resources or burial grounds and graves are exposed or found during the life of the project.

Initial Identification and/or Exposure (Chance Find)

If during the construction, operations, or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, find any artefact of cultural significance, this person must cease work at the site of the find. They must report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.

The initial procedure when such sites are found aim to avoid any further damage. If during the construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance the following steps and reporting structure must be observed in both instances:

- The person or group (identifier) who identified or exposed the heritage resource or burial ground must cease all activity in the immediate vicinity of the site;
- The identifier must immediately inform the senior on-site Manager of the discovery;

- The senior on-site Manager must make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area and ensure that the site is secured and control access;
- The senior on-site Manager will inform the ECO and Health and Safety (HS) officer of the chance find and its immediate impact on operations. The ECO will then contact the project archaeologist.

Chance Find Protocol: Heritage Resources

In the event that previously unidentified heritage resources are identified and/or exposed during construction or operation of the project, the following steps must be implemented subsequent to those outlined above:

- The project archaeologist must be notified of the discovery;
- The project archaeologist will visit the site for a field-based assessment of the finds and appropriate mitigation measures will then be presented to the developer;
- Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Sections 34, 35, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), the project archaeologist will notify the South African Heritage Resources Agency (SAHRA) and/or the Provincial Heritage Resources Agency Gauteng (PHRA-G) on behalf of the developer; and
- Based on the comments received from SAHRA and/or PHRA-G, the project archaeologist will provide the developer with a Terms of References Report and relevant associated costs if necessary.

Chance Find Protocol: Burials and Graves

In the event that previously unidentified burial grounds and graves are identified and/or exposed during construction or operation of the project, the following steps must be implemented subsequent to those outlined above:

- The project archaeologist must immediately be notified of the discovery in order to take the required further steps:
- The local South African Police Service (SAPS) will be notified on behalf of the developer;
- The project archaeologist will inspect the exposed burial and determine in consultation with the SAPS if any additional graves may exist in the vicinity as well as the temporal context of the remains, i.e.:

- Forensic

- Authentic burial/grave (informal or older than 60 years, NHRA (1999) Section 36); or
- Archaeological (older than 100 years, NHRA (1999) Section 38);
- Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Section 36 and NHRA (1999) Regulations (Regulation 38, 39, 40), the project archaeologist will notify SAHRA and/or LIHRA on behalf of the developer;
- SAHRA's Burial Grounds & Graves Unit (BBG Unit) may require that an identification of interested parties, consultation and /or grave relocation take place;

Consultation must take place in terms of NHRA (1999) Regulations 39, 40, 42; and 5. Grave relocation must take place in terms of NHRA (1999) Regulations 34.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by Gudani Consulting Environmental & Social Scientists to conduct a Phase 1 Heritage Impact Assessment for the proposed Kinetic Development Group Limited (KDG) ferroalloys/ferrochrome smelter plant (125Ktpa – 1Mtpa) on the farms Van Der Bijl 528 MS and Dreyer 526 MS (Zone/Stand 12 and 31) within the Musina-Makhado Local Municipalities in the Limpopo Province.

Background research indicated that there are a number of cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls, including some located in and close to the proposed development area footprints. The May 2025 field-based assessment for the Kinetic Development Group Limited ferroalloys/ferrochrome smelter plant did not identify any Stone Age or Iron Age sites, features or remains, and no additional recent historical sites over and above the ones recorded in 2021. Two of the sites recorded in 2021 is located in the study & proposed development area. Site BG1 contains a cluster of three graves belonging to the De Bruin family. These are located inside a fenced area, indicated by granite tombstones as grave dressings. Site 24 is an existing/operating hunting-camp. The site and structures associated with it is not of historical heritage origin or significance and no mitigation measures need to be implemented.

Graves & Grave Sites always carry a High Significance Rating from a Cultural Heritage perspective. As such, due care should be taken to not impact on them in any way through development actions. If possible, these sites should be avoided and protected in situ.

The impact of the proposed development on cultural heritage sites in the area is deemed as Low based on the Impact Assessment criteria used. As there is always a possibility of sites, features and material being missed as a result of various factors, including the often-subterranean nature of cultural heritage resources, it is also recommended that a Chance Finds Protocol (CFP) be drafted and implemented for the proposed Kinetic Development Group Limited ferroalloys/ferrochrome smelter plant development. A generic CFP has been included in the report.

Finally, from a Cultural Heritage point of view, the proposed Kinetic Development Group Limited ferroalloys/ferrochrome smelter plant development should be allowed to continue once the recommended mitigation measures provided above has been implemented.

The often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves) should always be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

8. REFERENCES

Locality Maps: courtesy Gudani Consulting Environmental & Social Scientists

Field Report/Photographs: courtesy Hannes Visser May 2025.

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APPENDIX A: DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C: SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D: PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.