

Phase 1 Heritage Impact Assessment Report

HERITAGE IMPACT ASSESSMENT FOR THE MINING
RIGHT APPLICATION BY JAPIES RUS MINERALE (PTY)
LTD ON PORTION 1 OF THE FARM MAGOLORING
668 AND PORTION 6 (A PORTION OF PORTION 2) OF
THE FARM MAGOLORING 668, NEAR POSTMASBURG
IN THE NORTHERN CAPE PROVINCE.

PREPARED BY:



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***Disclaimer;** Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. G&A Heritage and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

Statement of Independence

As the duly appointed representative of G&A Heritage, I Stephan Gaigher, hereby confirm my independence as a specialist and declare that neither I nor G&A Heritage have any interests, be it business or otherwise, in any proposed activity, application or appeal in respect of which the Environmental Consultant was appointed as Environmental Assessment Practitioner, other than fair remuneration for work performed on this project.

SIGNED OFF BY: STEPHAN GAIGHER



MANAGEMENT SUMMARY

Site name and location: Portion 1 of the Farm Magoloring 668 and Portion 6 (a portion of Portion 2) of the Farm Magoloring 668, near Postmasburg in the Northern Cape Province.

Municipal Area: ZF Mgcawu District, Tsantsabane Municipality

Developer: Japies Rus Minerale (Pty) Ltd.

Consultant: G&A Heritage, PO Box 522, Louis Trichardt, 0920, South Africa.
38A Vorster St, Louis Trichardt, 0920

Date of Report: 9 February 2017

The purpose of the management summary is to distil the information contained in the report into a format that can be used to give specific results quickly and facilitate management decisions. It is not the purpose of the management summary to repeat in shortened format all the information contained in the report, but rather to give a statement of results for decision making purposes.

This study focuses on the Mining Right Application by Japies Rus Minerale (Pty) Ltd. to mine for iron ore and manganese ore on Portion 1 of the Farm Magoloring 668 and Portion 6 (a portion of Portion 2) of the Farm Magoloring 668 near Postmasburg in the Northern Cape Province.

This study encompasses the heritage impact investigation. A preliminary layout has been supplied to lead this phase of this study.

Scope of Work

A Heritage Impact Assessment (including Archaeological, Cultural heritage, Built Heritage and Palaeontological Assessment) to determine the impacts on heritage resources within the study area.

The following are the required to perform the assessment:

- A desk-top investigation of the area;
- A site visit to the proposed development site;
- Identify possible archaeological, cultural, historic, built and palaeontological sites within the proposed development area;
- Evaluate the potential impacts of construction and operation of the proposed development on archaeological, cultural, historical resources; built and palaeontological resources; and
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural, historical, built and palaeontological importance.

The purpose of this study is to determine the possible occurrence of sites with cultural heritage significance within the study area. The study is based on archival and document combined with fieldwork investigations.

Findings

The area was investigated during a field visit and previously through archival studies.

Two graveyard sites were identified. The first was on "Marthaspoort", a family cemetery, most of the graves had formal headstones. The second graveyard is still in use. During an interview with a farm worker, Mr. Andries Pyl (ID no. 690603 5834 087) showed the Principle Investigator and Field Worker to his family's cemetery. At least 14 graves were identified, the most recent burials were for Mr. Pyl's parents.

Evidence of previous mining activities were evident on the farm.

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Some stone tools were collected. These were scatters without provenance and was limited to LSA microliths and cores, mostly made of volcanic glass and banded iron stone.

The Japies Rust Farm House, outbuildings and laborer's houses are located on the south western corner of the property. Some of the outbuildings are older than others, however the development is not going to affect these structures.

Significance

Heritage parameter	Issues	Rating prior to mitigation	Average	Rating post mitigation	Average
Graveyard 1	Yes	54	34	8	
Graveyard 2	Yes	54	34	8	
Farm House	No	8	8	8	
Old mine and bridge	No	8	8	8	
Stone tools	Yes	8	8	8	
			- 34		-8
			Medium Negative Impact		Low Negative Impact

Comparison of summarised impacts on environmental parameters

Recommendations

It is recommended that the known burial sites be relocated.

Fatal Flaws

No fatal flaws were identified.

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LIST OF ABBREVIATIONS

Bp.....	Before Present
EIA.....	Early Iron Age
ESA.....	Early Stone Age
Fm.....	Femtometre (10^{-15} m)
GPS.....	Geographic Positioning System
HIA.....	Heritage Impact Assessment
LIA.....	Late Iron Age
LSA.....	Late Stone Age
MYA.....	Million Years Ago
MSA.....	Middle Stone Age
NHRA.....	National Heritage Resources Act no 22 of 1999
SAHRA.....	South African Heritage Resource Agency
S&EIR.....	Scoping & Environmental Impact Reporting
Um.....	Micrometre (10^{-6} m)
WGS 84.....	World Geodetic System for 1984

HERITAGE IMPACT REPORT

HERITAGE IMPACT ASSESSMENT REPORT FOR THE MINING RIGHT APPLICATION BY JAPIES RUS MINERALE (PTY) LTD. ON PORTION 1 OF THE FARM MAGOLORING 668 AND PORTION 6 (PORTION OF PORTION 2) OF THE FARM MAGOLORING 668, NEAR POSTMASBURG IN THE NORTHERN CAPE PROVINCE.

INTRODUCTION

Legislation and methodology

G&A Heritage was appointed by M&S Consulting to undertake a heritage impact assessment for the Mining Right Application by Japiés Rus Minerale (Pty) Ltd. to mine for iron ore and manganese ore on Portion 1 of the Farm Magoloring 668 and Portion 6 (a portion of Portion 2) of the Farm Magoloring 668, near Postmasburg in the Northern Cape Province.

Section 38(1) of the South African Heritage Resources Act (25 of 1999) requires that a heritage study is undertaken for:

- (a) Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) Construction of a bridge or similar structure exceeding 50 m in length; and
- (c) Any development, or other activity which will change the character of an area of land, or water –
 - (1) Exceeding 10 000 m² in extent;
 - (2) Involving three or more existing erven or subdivisions thereof; or
 - (3) Involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
 - (d) The costs of which will exceed a sum set in terms of regulations; or
 - (e) Any other category of development provided for in regulations.

While the above describes the parameters of developments that fall under this Act., Section 38 (8) of the NHRA is applicable to this development. This section states that;

- (8) *The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.*

In regards to a development such as this that falls under Section 38 (8) of the NHRA, the requirements of Section 38 (3) applies to the subsequent reporting, stating that;

- (3) *The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2) (a): Provided that the following must be included:*

- (a) *The identification and mapping of all heritage resources in the area affected;*
- (b) *An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7;*
- (c) *An assessment of the impact of the development on such heritage resources;*
- (d) *An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- (e) *The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (f) *If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (g) *Plans for mitigation of any adverse effects during and after the completion of the proposed development.*
 - (1) Ancestral graves,
 - (2) Royal graves and graves of traditional leaders,
 - (3) Graves of victims of conflict (iv) graves of important individuals,
 - (4) Historical graves and cemeteries older than 60 years, and
 - (5) Other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);
- (h) *Movable objects, including ;*
 - (1) Objects recovered from the soil or waters of South Africa including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (2) Ethnographic art and objects;
 - (3) Military objects;
 - (4) Objects of decorative art;
 - (5) Objects of fine art;
 - (6) Objects of scientific or technological interest;
 - (7) Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and
 - (8) Any other prescribed categories, but excluding any object made by a living person;
- (i) *Battlefields;*
- (j) *Traditional building techniques.*

A **'place'** is defined as:

- (a) A site, area or region;
- (b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- (c) A group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

'Archaeological' means:

- (a) Material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- (b) Rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
- (c) Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
- (d) Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Paleontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

The removal of graves is subject to the following procedures as outlined by the SAHRA:

- Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the SAHRA;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

The limitations and assumptions associated with this heritage impact assessment are as follows;

- Field investigations were performed on foot and by vehicle where access was readily available.
- Sites were evaluated by means of description of the cultural landscape, direct observations and analysis of written sources and available databases.
- It was assumed that the site layout as provided by M&S Consulting is accurate.
- We assumed that the public participation process performed as part of the Basic Assessment process was sufficiently encompassing not to be repeated in the Heritage Assessment Phase.

Table 1. Impacts on the NHRA Sections

Act	Section	Description	Possible Impact	Action
National Heritage Resources Act (NHRA)	34	Preservation of buildings older than 60 years	No impact	None
	35	Archaeological, paleontological and meteor sites	Yes	CRMP Recommendations
	36	Graves and burial sites	Yes	CRMP Recommendations
	37	Protection of public monuments	No impact	None
	38	Does activity trigger a HIA?	Yes	HIA

Table 2. NHRA Triggers

Action Trigger	Yes/No	Description
Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length.	No	N/A
Construction of a bridge or similar structure exceeding 50m in length.	No	N/A
Development exceeding 5000 m ²	Yes	Japies Rus Minerale (Pty) Ltd Mining Right Application
Development involving more than 3 erven or sub divisions	No	N/A
Development involving more than 3 erven or sub divisions that have been consolidated in the past 5 years	No	N/A
Re-zoning of site exceeding 10 000 m ²	Yes	Agricultural to mining
Any other development category, public open space,	No	N/A

squares, parks or recreational grounds		
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BACKGROUND INFORMATION

JAPIES RUS MINERALE (PTY) LTD. MINING RIGHT APPLICATION

PROJECT DESCRIPTION

Japies Rus Minerale (Pty) Ltd. has applied for Mining Right to mine iron ore and manganese ore over Portion 1 of the Farm Magoloring 668 and Portion 6 (a portion of Portion 2) of the Farm Magoloring 668 near Postmasburg in the Northern Cape Province.

Mining Method:

Mining is done by the conventional opencast mining method. It is designed based on the nature of the ore-bodies on the mine, which proposes that each resource be treated as a separate pit (selective mining).

Where present vegetated soil overlying the planned mining area is stripped prior to mining and stockpiled on a dedicated (temporary) dump to be used for rehabilitation purposes at a later stage.

A haul road network provides access to the opencast mining areas, to the dry (modular) crushing and screening plants (Fe & Mn) and to the wet (modular) scrubber / DMS plants (Fe).

The mining process is initiated by drilling, then blasting and is then followed by loading and hauling both ore and waste to their respective destination on the mine site. The mine will be operational 24 hours a day, 7 days a week to achieve the targeted production.

Processing Method:

- Iron Ore:

The Run of Mine (ROM) is hauled to the dry crushing and screening plant where it is stockpiled in "A-grade" and "B-grade" stockpiles. An excavator with a hydraulic hammer attachment is used to break down the +500mm ore.

- A-grade process:

A-grade ore (-500mm) is fed into the VGF which then feeds the JAW crusher. The JAW crushes the ore down to -180mm. The crushed ore is then fed into a double deck screen which screens the ore into three sizes:

- +32mm (oversize)

The +32mm oversize material is fed into the Cone crusher where the ore is re-crushed to -32mm before it is fed into the double deck screen again to repeat the screening process.

- -32mm (lumpy); and

The -32mm + 8mm lumpy ore is hauled to the shipping yard, ready for the market.

- -8mm +0mm (fines)

The -8mm +0mm fines ore is hauled to the scrubber plant. The ore is washed and any material -1.0mm is removed and discarded as waste material. The -8mm +1mm ore is then hauled to the shipping yard, ready for market.

All waste material is hauled to the temporary tailings / waste rock dumps to be used for rehabilitation at a later stage.

- B-grade process:

B-grade ore (-500mm) is fed into the VGF which then feeds the JAW crusher. The JAW crushes the ore down to -180mm. The crushed ore is then fed into a double deck screen which screens the ore into three sizes:

- +32mm (oversize)

The +32mm oversize material is fed into the Cone crusher where the ore is re-crushed to -32mm before it is fed into the double deck screen again to repeat the

- screening process.
- -32mm (lumpy); and
The -32mm + 8mm lumpy ore is hauled to the DMS Plant. Water for the plant is recycled continuously through the settling / recycling dam.
The -32mm + 8mm lumpy ore is hauled to the DMS Plant where the pre-screen discard all the +22mm material on a stockpile. This +22mm material is transported to the Cone crusher for secondary crushing to -22mm.
The -22mm +8mm ore is processed in the DMS Plant and impurities (floats) are removed and discarded as waste material.
The on-grade product (-22mm +8mm) ore is hauled to the shipping yard, ready for market.
- -8mm +0mm (fines)
The -8mm +0mm fines ore is hauled to the scrubber plant. The ore is washed and any material -1.0mm is removed and discarded as waste material. The -8mm +1mm ore is then fed to the DMS plant where it is processed. Impurities (floats) are being separated and discarded as waste, and the on-grade product is hauled to the shipping yard, ready for market.
- Manganese Ore:
The Run of Mines (ROM) will be crushed and screened using dry process technology. The resultant is accumulated into a product stockpile and waste is loaded, hauled and dumped at waste dumps / backfilling / road making. The final product is transported by road to the market.

Planned production:

Japies Rus Minerale (Pty) Ltd has applied for a period of 30 years, planning to reach full production of 100 000 tonnes iron ore per month. First production is expected in month 7 of the mining operation and production will continue throughout the life-of-mine until such time that the iron ore resource has been depleted.

Japies Rus Minerale (Pty) Ltd plans to reach full production of 30 000 tonnes of manganese ore per month. First manganese ore production is expected in the first quarter of year 4 and production will continue throughout the life-of-mine until such time that the manganese ore resource is depleted.

SITE DESCRIPTION

Japies Rus Minerale (Pty) Ltd will use the first six months after granting and execution of their Mining Right for the construction phase of their mining operation.

Japies Rus Minerale (Pty) Ltd plans to establish the following, amongst other, infrastructure on their mine site during the initial construction phase:

- Ablution facilities (chemical toilets to be upgraded to brick buildings with septic tanks)
- Diesel tanks
- Explosive magazine
- Generators
- Laboratory (mobile container to be upgraded to brick building)
- Offices (mobile containers to be upgraded to brick buildings)
- Parking bay
- Processing plant FE, consisting of:
 - JAW crusher
 - Cone crusher
 - Screens
 - Scrubber
 - DMS
- Recycling dam
- Salvage yard
- Security access point

- Stockpile area
- Storage facilities (mobile containers)
- Washbay
- Waste disposal sites (concrete floor with bud walls)
- Water dams (clean water)
- Water tanks (drinking water)
- Weighbridge and control room (mobile container)
- Workshops (mobile containers to be upgraded to brick buildings)

SITE LOCATION

Japies Rus is situated approximately 50km north-west of the town of Daniëlskuil, approximately 40km south of the town of Kathu, approximately 30km south-east of the town of Olifantshoek and approximately 25km north-west of Postmasburg, in the Northern Cape Province.

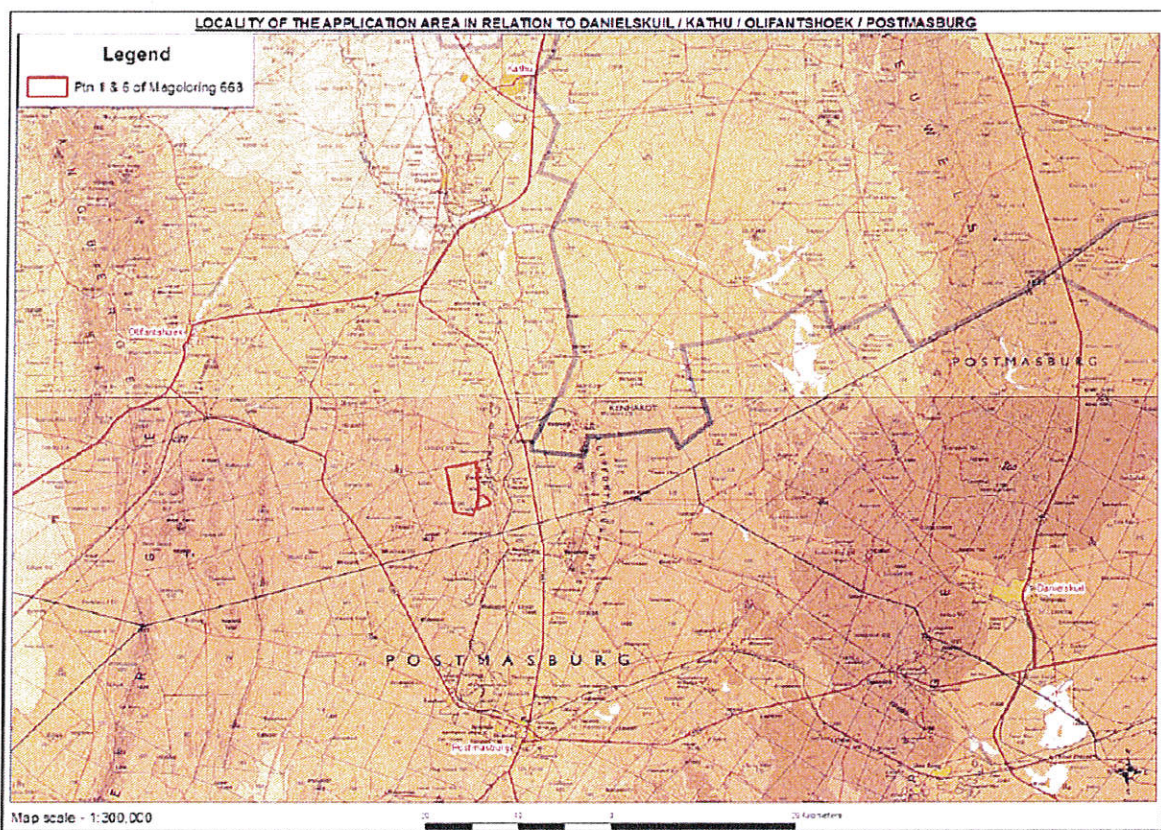


Figure 1. Locality of the Application Area in Relation to Daniëlskuil / Kathu / Olifantshoek / Postmasburg



Figure 2. Google Earth Image of Study Area in Relation to Postmasburg

GPS TRACK PATHS

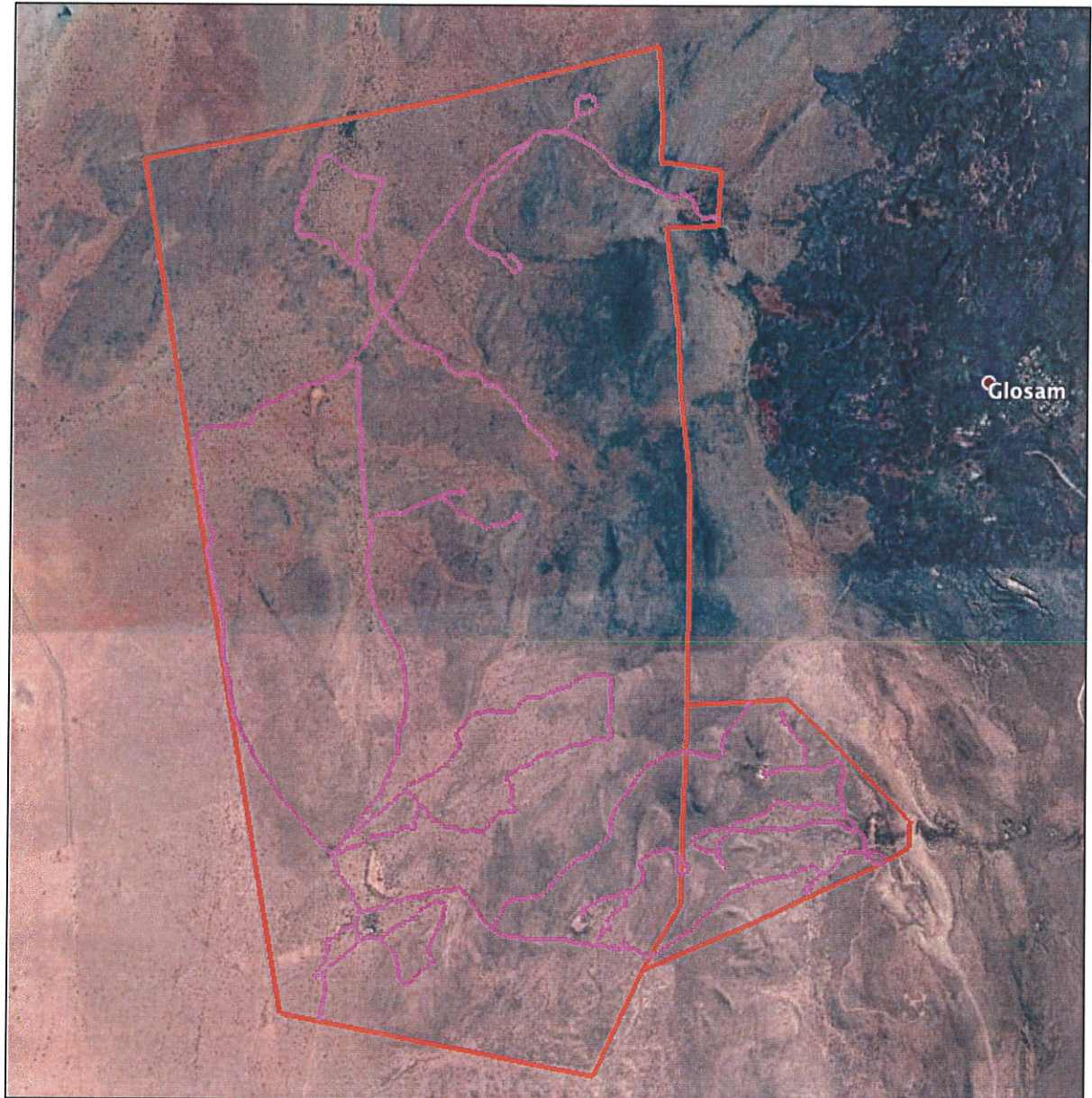


Figure 3. GPS Track Paths