



Transnet Limited

**New Multi Product Pipeline
(NMPP) Project**

Mitigated Heritage Sites
Damaged by the NMPP

2684358-UM-PL1- ENV-RP-001

Revision 00



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<Extended Document Title>

<December 2010>

Comment [A2]: If Any More Information About The Document Title Is Relevant, It Is To Be Placed Into This Field Otherwise Just The Title Again

Comment [A3]: Insert Mont & Year Only – Example: November 2008

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Job number 2684358



Job title	New Multi Product Pipeline (NMPP) Project	Job number
		2684358

Document title	Mitigated Heritage Sites Damaged by the NMPP	File reference
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Document ref	2684358-UM-PL1-ENV-RP-001
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Revision	Date	Filename	Umlando_NMPP_2684358-UM-PL1-ENV-RP-001		
		Revision Description	00		
			Prepared by	Checked by	Approved by
		Name	G Anderson	L Anderson	G Anderson
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
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		Name			
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		Description			
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Issue Document Verification with Document	<input checked="" type="checkbox"/>
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**New Multi Product Pipeline
(NMPP) Project**

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NMPP Alliance Approved			
Transnet Pipelines Approved			
Transnet Capital Projects Approved			

2684358-SI-PL3-EN-RP-302

Revision 00

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1 Introduction

1.1 Scope

Several heritage sites were impacted by the NMPP between Ladysmith and Estcourt. Umlando was contracted undertake further investigation of the impacted areas sites (this investigation excluded identifying who from the construction teams might have been responsible for the damages). The aim of the investigation by UMLANDO was to:

- Identify the specific impacts on various sites along the route between Ladysmith and Estcourt
- Establish when the sites were likely to have been impacted
- Assess the level of the impact
- Propose a possible mitigation plan
- Propose an additional heritage management plan
- Have a site meeting with Amafa KZN, NMPP, Umlando, and the independent Environmental company (IEM)

This work was undertaken between June and December

1.2 Background

The locations of the heritage features requiring protection from construction activities were provided to the construction team, prior to and during the initial right of way (RoW) clearing operations. The provided list was further used by the contractors fencing crews in conjunction with the on-site assistance of the heritage specialist to demarcate and fence all known heritage features identified. As another precautionary measure as required by the approved Environmental Management Plan, a preconstruction survey was undertaken by the project's independent Environmental Control Officers (ECOs) and the contractor's Environmental Officers (EOs) where further possible heritage features were identified. Thus the list of heritage features on the trunkline route was updated from time to time to reflect the changes and to include new features and sites where applicable.

The NMPP Project was approved by the Department of Environmental Affairs (DEA) in February 2009 (DEA Ref Nr 12/12/20/735). Subsequent to the DEA approval, and prior to construction, Transnet appointed an independent heritage specialist, UMLANDO: Archaeological Tourism & Resource Management, to undertake a detailed survey of the proposed route or Trunkline (PL1). UMLANDO identified and provided a list of all known heritage features and sites along the proposed route.

During the period of the incident, June and July 2010, it came to the attention of the project environmental team that some of these identified heritage features had been impacted on during construction activities in the areas between Ladysmith and Estcourt in KwaZulu Natal. KwaZulu Natal Heritage, or Amafa KZN, was duly notified of the impacts by the NMPP project

Environmental Team in July 2010 (document refer number NMPP-SG-ENV-INR-042_PL1_KP189 to KP273).

As soon as this was noted, appropriate mitigation measures were put in place. These included:-

- Closing off impacted areas/sites from further construction activities.
- Re-fencing off the impacted areas/sites.
- Conducting further awareness training.
- Initiating a detailed investigation to determine the root cause of the incident as well as try to establish a timeline when the impacts took place.
- Engaging UMLANDO to confirm on the impacted heritage sites.
- Engaging UMLANDO and to develop appropriate mitigation and management measures of the several impact sites.

1.3 Definitions, Symbols and Abbreviations

ECO: Environmental control officer – a range of people who undertake environmental monitoring and in some cases heritage monitoring

HIA: Heritage Impact Assessment/Assessor

HP: Historical Period – in Kwazulu-Natal the Historical Period post dates 1829, and consists of indigenous and colonial people.

KP: Kilometre Point – every kilometre along the line is given a KP number and used as a reference point. The KP is then subdivided by the meters within the KP, e.g. KP500+500 would be at 500km from the start, and then another 500m north (or positive) towards KP600.

KZN: KwaZulu Natal

JV: Joint Venture between Group 5 (South Africa) and Spiecapag (International). This is the construction company

LIA: Late Iron Age – Iron Age farmers dating from c AD1100 – AD 1820.

NMPP: New Multi Purpose Pipeline – the pipeline for the project

RoW: Right of Way - This is a 30m wide strip from start to finish where the impact zone of the pipeline will occur. The RoW is levelled by removing the upper 30cm of topsoil.

Significance of impact (in this instance all are negative impacts):

- High negative: site is destroyed and cannot be fixed.
- Medium negative: site is partially damaged or affected and may be mitigated and salvaged
- Low negative: the site has been minimally affected, and for this report, it refers to the fact that the heritage area has been affected, and not the site.

1.4 Legislature pertaining to heritage sites in KwaZulu-Natal

All heritage resources fall under the jurisdiction of Amafa KZN, in KZN. This is different to other provinces, which fall under SAHRA. The legislation pertaining to each organisation is very similar, and I will use the KZN Heritage Act No. 4 of 2008

- **“33. General protection: Structures.—**
 - ◆ No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
 - ◆ Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
 - ◆ The Council may, by notice in the *Gazette*, exempt—
 - a defined geographical area; or
 - ◆ defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
 - ◆ A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.
- **34. General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—**
 - ◆ the grave of a victim of conflict;
 - ◆ a cemetery made up of such graves; or
 - ◆ any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- **35. General protection: Traditional burial places.—**
 - ◆ No grave—
 - ◆ not otherwise protected by this Act; and
 - ◆ not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from its original position, or otherwise disturbed without the prior written approval of the Council having been obtained on written application to the Council.
 - The Council may only issue written approval once the Council is satisfied that—
 - the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and
 - the applicant and the relevant communities or individuals have reached agreement regarding the grave.
- **36. General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—**
 - ◆ No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
 - ◆ Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must

cease forthwith and a person who made the discovery must submit a written report to the Council without delay.

- ◆ The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.
- ◆ No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- ◆ No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.
- ◆ The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government." (KZN Heritage Act of 2008)

2 Methodologies

2.1 Stages of Heritage management for the project

The heritage management for this pipeline has various stages and these have been undertaken in mostly conjunction with the construction phases. The process is as follows:

- **Initial survey**
 - This survey was undertaken at a desktop level and a field survey from 2007 to 2008
 - Approximately 200 sites were observed within a 400m corridor of the proposed line
 - The line was rerouted at various stages for various factors, of which heritage was one factor.
 - Management plans for each site were submitted and formed part of the general EIA
- **Site mitigation**
 - Each site that was impacted, or had the potential to be impacted had some form of mitigation
 - The mitigation included, photography, mapping, collections and/or excavations

- Several sites were mapped by a surveyor and these were given XY co-ordinates and submitted to the NMPP. All of these sites have a double reference, e.g. GLK0122b_4 refers to the heritage site GLK0122b, while the suffix refers to the specific feature (number reference used by the surveyor and is on the CAD files). Each CAD file feature reference has a further sub-division that refers to specific points. These are the near precise locations of specific points of the features.

- **Excavations**

- Some sites were excavated. Excavations occurred along the direct impact zone of the pipeline within 5m of each side of the line.
- At this stage we were informed that the impact zone would be a 30m wide strip, where the upper 30cm of topsoil would be removed.
- All structures and features within this 30m zone, but not in the 10m centre line corridor, were demarcated and designated as 'no-impact' zones.
- These sites and features were submitted to Transnet and line reroutes were undertaken

- **Pre-RoW reconnaissance**

- The ECOs and someone from the construction company undertaking the RoW clearance surveyed ahead of the starting position to make notes of possible features etc. These included ones that were known and unknown.
- It is at this stage that the 30m RoW had been finalized.
- The ECOs and construction company reported any features or graves to Umlando and Transnet, and site management decisions were made via electronic media and site visits. At least 25 new sites were reported to Umlando, in this manner.¹
- All reported sites were demarcated as a matter of course until Umlando had made a final decision.
- The email correspondences between the various people are available if needed.

- **Monitoring and RoW clearance**

- All sensitive areas were noted and one or more heritage practitioners, or archaeologists, had to be on site during RoW clearance.
- Sensitive sites in the RoW had been demarcated with red-white metal poles, wooden poles that had been painted blue and marked "Heritage site"
- The fencing team was given instructions to fence off sensitive areas, and this happened either before, during, or after RoW monitoring. Instructions for RoW fencing came from the foreman or the ECO, who were instructed by Umlando.
- During RoW clearance, the HIA was on site to ensure that no unknown features or graves were uncovered beneath the topsoil, that any significant artefacts were collected, and that the demarcated areas were not damaged.

¹ The original survey was undertaken in February to April where the vegetation was very dense in places. The dense vegetation made it impossible to see small structures that were ~20-40cm above ground in some areas. In some areas the grass was over 2m tall.

- There are a few exceptions where the HIA was not on site, and this is because the mitigation had already been undertaken and instructions for fencing had been given. For example, on the Vaalkranz Battlefield we had surveyed the area with metal detectors before the ROW clearance team arrived, in order to get better artefact provenience. All graves in the Battlefield were demarcated by Umlando and instructions were given to have them fenced off.

- **Line reroutes**

- All graves that appeared to be less than 60 years in age, or those that may have living relatives, were not excavated, and were thus not given permission to be destroyed.

- After a meeting in February 2010, the positions of all known graves were submitted to the JV, after a site visit for every, then, known grave in the RoW. This was to ensure that there was agreement as to the locality of the graves in relation to the pipeline.

- The pipeline was rerouted accordingly away from the graves.

- An important point to note is that all 'possible graves' were given the status of being 'graves' for this project. This is especially the case for graves that are less than 60 years in age, as they would require a social impact assessment if they were to be disturbed. Given the time limitations to this project, we decided that a demarcation and reroute would be more feasible than a social impact assessment. Only archaeological graves in the direct line of the pipeline, i.e. 5m each side of centre point, were excavated. These excavations occurred in 2009 – 2010.

- **Post-RoW monitoring**

- After the above steps had been undertaken, Umlando and the JV, with Transnet, did not see the need to have further on-site monitoring, as all sensitive areas were in the system and had been demarcated.

- Umlando was satisfied that reroutes had been made and that the instructions had been given for sensitive areas to be fenced off.

- All areas that were demarcated with fencing and/or poles were considered heritage sites, and thus were not allowed to be damaged, regardless of its significance and/or content.

2.2 Site visits with NMPP

Umlando (Gavin Anderson) and Transnet (Tim Liversage) visited each site listed below to confirm whether it has been damaged. Each site was (re-)plotted onto the JV system to determine its exact location in relation to the pipeline. All affected areas were closed off from construction activity until further notice. A formal memorandum was sent out stating this, just after the July meeting.

2.3 Site visits with surveyors

Umlando and NMPP surveyors revisited all the affected sites to locate each affected feature. All of these features, with the exception of one grave, had been previously surveyed with XY co-ordinates. We could thus backtrack to the feature with the original co-ordinates. This was important when it came to relocating small engravings.

2.4 Desktop survey

The desktop study consisted of plotting the pipeline and various aerial and topographical maps onto Google Earth as image overlays. I used 1937 aerial photographs, and the oldest and most recent 1:50 000 topographical maps currently available. This is important when determining the potential age of a settlement and/or graves. That is if a settlement does not occur on any of the maps then it probably predates 1937. Conversely, if the settlement does not occur on the 1937 aerial photograph, but does occur on the 1950s topographical map we can assume that the settlement dates between 1937 and 1950s. The potential dates of settlements, and thus graves, are important as different legislation applies to different ages of graves and heritage sites.

2.5 Mitigation

All areas that were demarcated with fencing and/or poles were considered heritage sites, and thus were not allowed to be damaged, regardless of its significance and/or content. An important point to note is that all 'possible graves' were given the status of being 'graves' for this project. This is especially the case for graves that are less than 60 years in age, as they would require a social impact assessment if they were to be disturbed. Given the time limitations to this project, we decided that a demarcation and reroute would be more feasible than a social impact assessment. Only archaeological graves in the direct line of the pipeline, i.e. 5m each side of centre point, were excavated. These excavations occurred in 2009 – 2010.

Before (2008 - 2009) and after (2010) photographs exist for most of the sites. Those features that do not have before photos have been surveyed with XY co-ordinates. The scale in all photos is 1m or 2m that have been broken into 10cm black or white sections.

It was not my aim to excavate graves for human remains, rather to assess the damage to the cairns themselves. If no cairn remained then by assumption we should find human remains. If that were the scenario, then I would cease excavations immediately and cover up the remains with the associated soil, and build a new cairn. All graves that were not excavated are presumed to have living descendants or are younger than 60 years. Alternatively, there were not in the RoW, but were damaged nonetheless.

The grave was considered high negative impacts if no cairn nor human remains were recovered.

3 Results and Discussion

The following is a list of sites that have been impacted in some manner by the pipeline. I need to clearly state that all of these impacts occurred after the RoW clearance had occurred, with the possible exception of one site. The Transnet investigation will confirm this as all work activity is logged.

The sites and their damage is summarised in Table 1. The names for each site are listed as named in the spreadsheet submitted to the JV that included all sites within the RoW and their co-ordinates.

Table 1: List of affected sites

KP	Heritage Specialist No:	Type of Heritage Structure:	Type of Impact	Site Significance	Demarcation	Type of Mitigation:Undertaken	Assumed Intensity of impact
KP269	GLK066_75	Kraal	Bilobial kraal walling has been mostly removed by clearance of the topsoil.	Low	Features were demarcated with blue poles, but were out of the impact zone (RoW)	Most of Kraal cannot be located by excavation	High negative
KP269	GLK066_75	2 Graves	stone cairns missing due to clearing of topsoil	High	Features were demarcated with blue poles, but were out of the RoW	One grave partially damaged, one grave mostly damaged	Medium and high negative
KP268	GLK118_96	1 Grave	stone cairns missing, grave thought to be under the topsoil stockpile	High	Grave was demarcated with blue poles and danger tape. Fell out of the RoW	Are was cleaned and graves located	Low negative
KP268	GLK118a	2 Graves	Indications are that these graves have been excavated as the positions indicate that they fell in the middle of the pipe trench	High	Grave was demarcated with blue poles and danger tape	Are was cleaned and graves located	Low negative
KP 265+286	N3	1 (possible) Grave	Stone cairns missing due to trenching spoil material being placed on top of them. Blasting occurred	High	Grave was demarcated with blue poles and was fenced in to the RoW by the fencing crew	Excavations located some of the cairns	Low negative
KP264+500	GLK122b_4	1 Grave	stone cairns missing due to clearing of topsoil	High	Grave was demarcated with blue poles and was fenced in to the RoW by the fencing crew	Cairns, and thus grave, cannot be located	High negative
KP261	GLK122c grave 031a	1 Grave	stone cairns missing due to trenching spoil material for the auger bore being placed on top of them	High	Grave was demarcated with blue poles and was fenced in to the RoW by the fencing crew	Cairns, and thus grave, cannot be located	High negative
KP238+101	GLK 078 Engravings	N/A	Engravings are covered with blast material from blasting activity, and trenching spoil	Low-medium	Engravings were demarcated with blue poles and were fenced in to the RoW by the fencing crew	All 6 engravings located. 3 engravings damaged by blast material.	Low negative for undamaged; medium negative for damaged
KP239	GLK078	Kraal	Slightly damaged the outskirt of kraal by excavator driving over it	Low	Kraal was demarcated with blue poles and danger tape and or fencing	Left as is since damage is not severe. The rocks will resettle.	Low negative

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KP	Heritage Specialist No:	Type of Heritage Structure:	Type of Impact	Site Significance	Demarcation	Type of Mitigation:Undertaken	Assumed Intensity of impact
KP273.800	GLK063a grave 16a	Graves	Graves covered by trenching spoil	High	Grave was demarcated with blue poles and danger tape and fencing	Grave was located and cleaned	Low negative
KP273.850	GLK063a grave 17a	Graves?	Area was covered by trenching spoil	High	Areas was listed as a no-work area	Graves occur outside the RoW	No impact
KP189.130	KP189.130	1 grave	top cairns removed by RoW team	High	Area was demarcated with at least blue poles	Excavations could not locate the cairns or the grave	High negative

3.1 GLK066_75

This site is located on the top of a hill at KP269. The site extends over the entire hill, consists of many stone walled features, and graves. These features date from the LIA to the more recent past. The affected area consisted of one bilobial kraal with two possible graves: one within the kraal and the other to the west. Figures 1 – 3 indicate there are no settlements near this site from 1937 – 2000, although settlements do occur to the south and southwest. This suggests that part of the site appears to date to the LIA.

The site was originally outside of the RoW and was not fenced off, however it was demarcated with metal and wooden poles. After the original RoW was cleared (and monitored), it was extended again, without heritage approval. The second clearance caused the damage to the site. The cleared stone walling can be seen in the pile of sand and rocks near the *Acacia spp* tree.

A nearby similar site (feature 73), in the RoW, was excavated and mapped, and was a “sacrifice site”, since GLK066_75 was not going to be damaged.

Significance of site: The kraal is of low significance

Significance of impact: High negative

Previous mitigation: The kraal was photographed (fig. 4) and mapped (fig. 5) in 2009 and thus some record of the site exists.

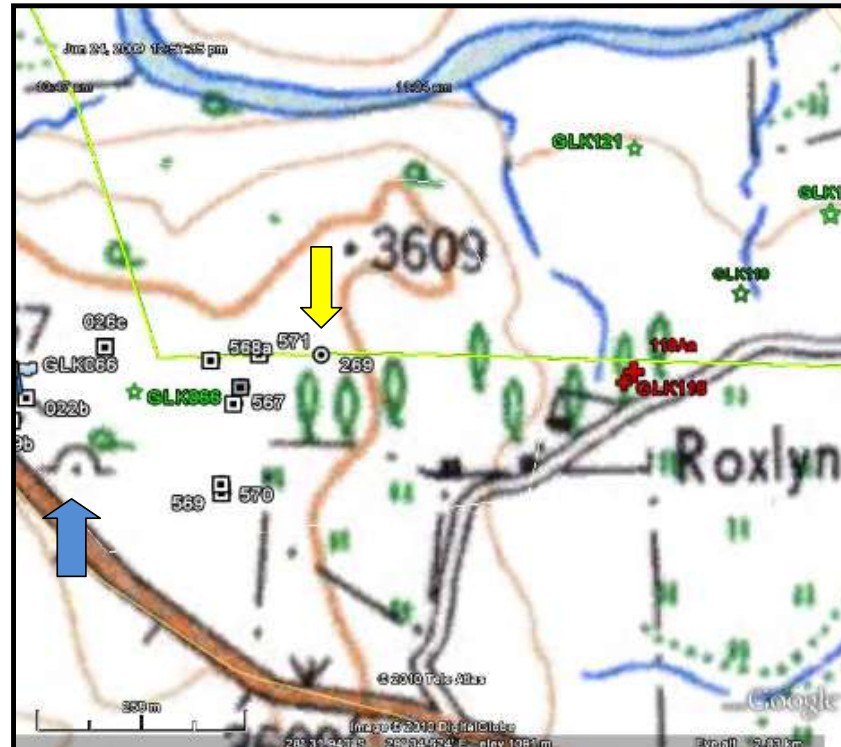
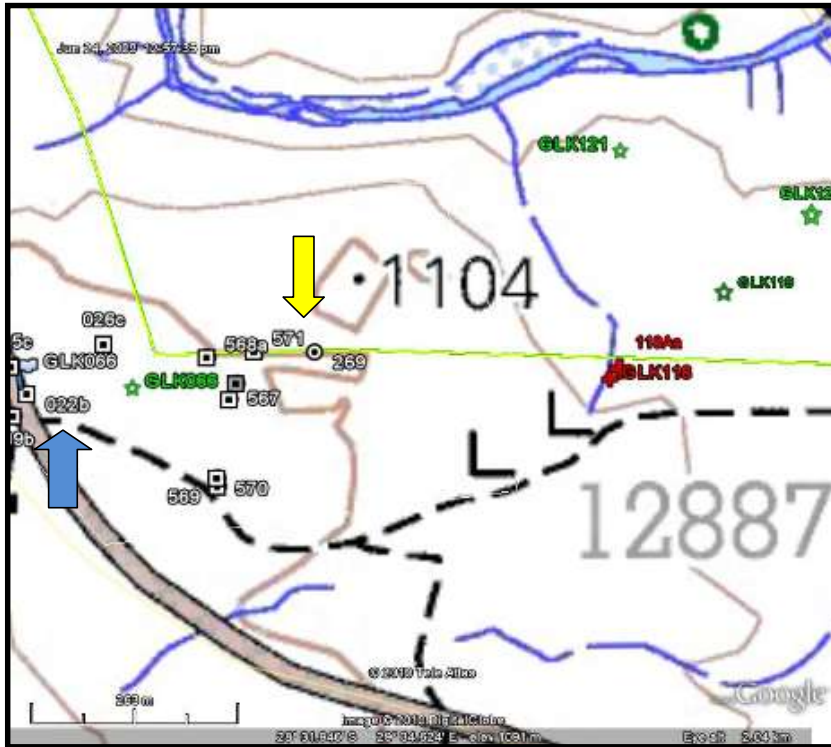
Occurrence of damage: The site was monitored during the RoW clearance. The RoW was extended after monitoring.

Assessment of Damage: The initial assessment suggested that the entire stone wall had been removed by RoW clearance and then topsoil was deposited on top of the site (fig. 6). The stone wall was originally ~10cm – 20cm above ground level and with a similar depth. The southern part of the kraal still exists and was used as a comparison.

I placed several excavation lines in a wheel spoke alignment from the middle of the kraal, for the assessment (fig. 7 - 8). The excavations used the site map (fig. 5) to determine where the walling would occur. The excavations went down to the original surface – visible by the layer of grass. If the stone wall existed, then the excavation lines would locate an *in situ* wall. If no walling was observed, then it implies that it has been removed by the RoW clearance.

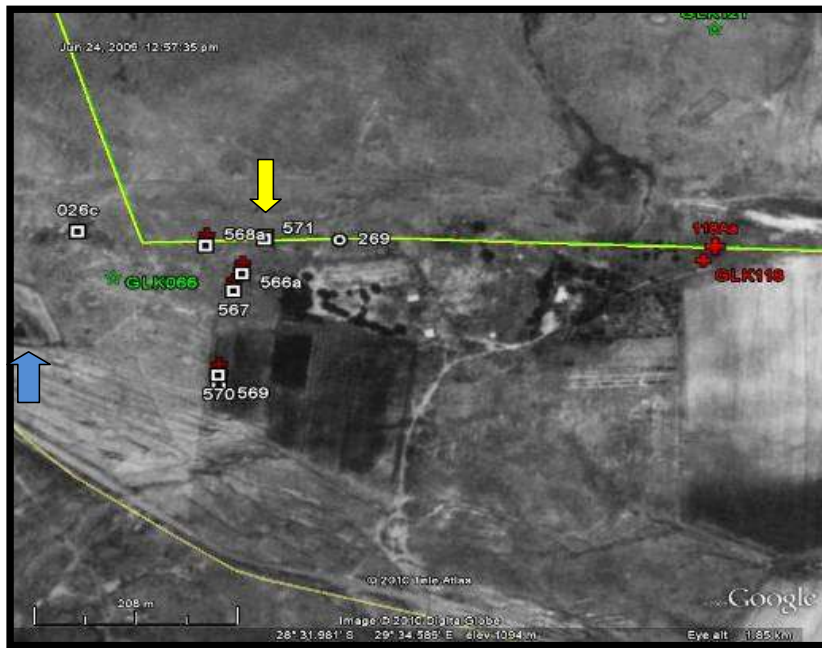
The excavations located parts of the primary wall. These remains were the basal stone layer. Most of the secondary wall has been cleared and I only located isolated stones. It appears that at least 75% of the kraal has been damaged in some manner. Figure 8b shows parts of the undamaged wall. It is not possible to repair the kraal wall.

FIG. 1: FEATURES GLK066 ON THE 2000 TOPOGRAPHICAL MAP²



² Green star = site name; red = recent graves; white square = recent historical feature, yellow arrow= affected area; blue arrow = 20th century settlement

FIG. 3: FEATURES GLK066 ON THE 1937 AERIAL MAP

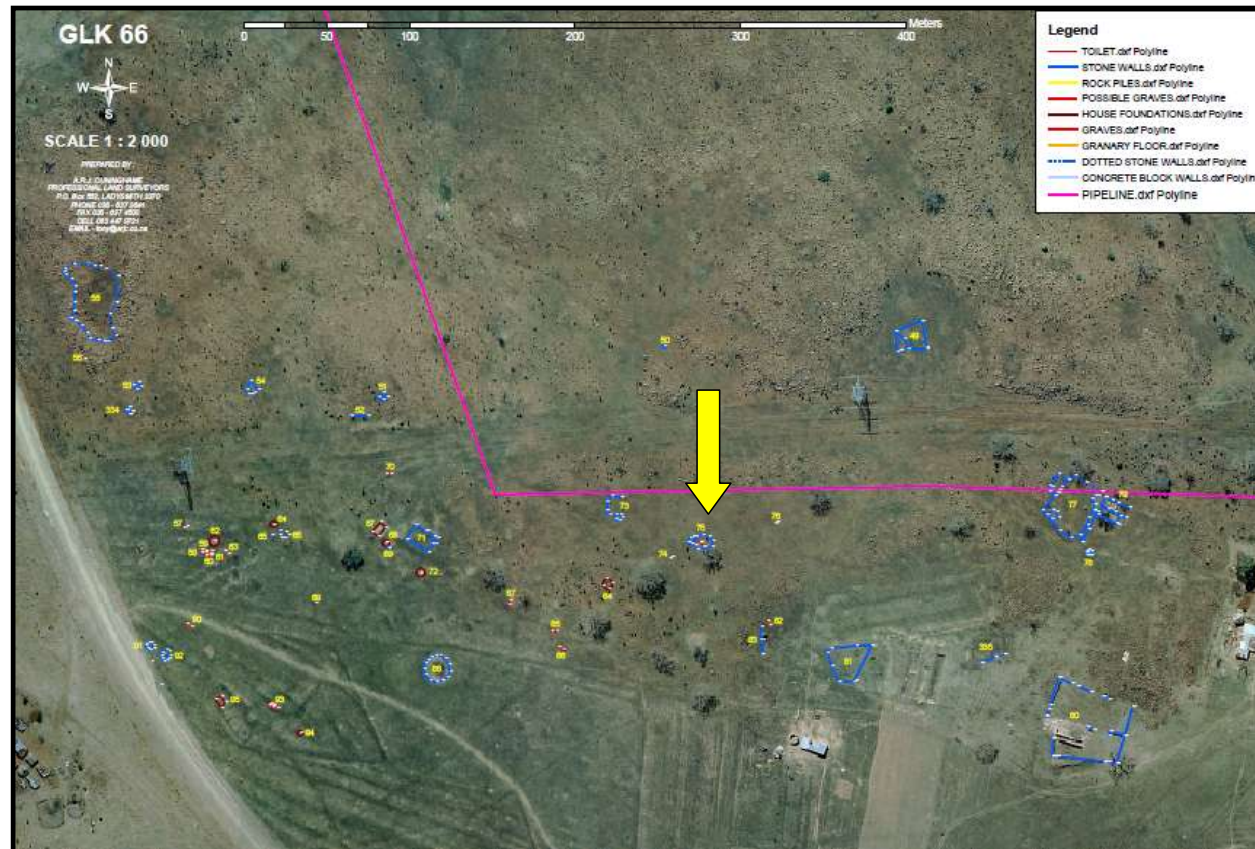


PHOTOGRAPH OF GLK066_75 IN 2009



FIG. 4:

FIG. 5: FEATURES GLK066³



³ Blue = stone wall; red = grave; pink = pipeline; yellow arrow = feature 75

3.2 GLK066_74 and 75 graves

GLK066_74 is located ~13m west of GLK066_75 (fig. 7), and it does not have any related stone walling. GLK066_75 is located inside the kraal discussed above. The graves consisted of stone cairns and date to the LIA. The graves were demarcated with metal and wooden poles, but were out of the original RoW so they were not fenced off. The topsoil has been removed and thus the upper part of the grave has been removed as well.

Significance of site: The features are of high significance

Significance of impact: Medium to high negative.

Previous mitigation: The graves were photographed (fig. 9 - 10) and mapped (fig. 5) in 2009 and thus some record of the site exists.

Occurrence of damage: The site was monitored during the RoW clearance. The RoW was extended after monitoring.

Assessment of Damage: The ends of both graves were surveyed in 2009. I used these XY coordinates to relocate both graves. I excavated between these two points and a width of ~1m to locate the stone cairns (fig. 9 - 10). \

The cairn at GLK066_74 has been mostly removed and only a few *in situ* rocks remain. The cairn at GLK066_75 has been partially affected, and minimally damaged.

Subsequent to mitigating this site, re-fencing the graves and RoW and a site visit, the one grave has been covered by sand, and all of the fencing has been removed. This was presumably undertaken by the local community.

FIGURE 6: FEATURE 75 AT GLK066_75 AFTER 2ND ROW CLEARANCE⁴

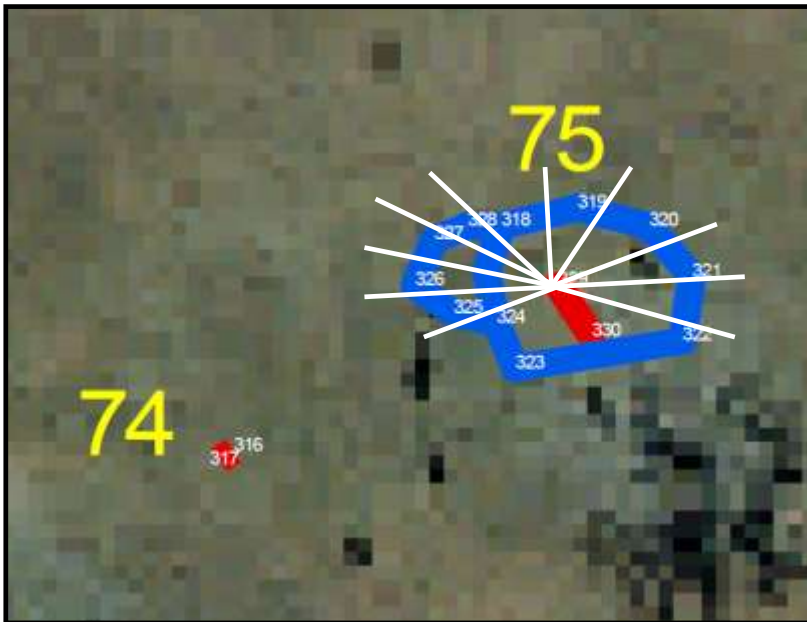
⁴ Yellow arrows indicate probably location of grave, blue arrow indicates location of the kraal.



EXCAVATION LINES AT GLK066_75

FIG.

7:



⁵ Yellow line = location of stone wall; yellow arrow = undamaged stone wall

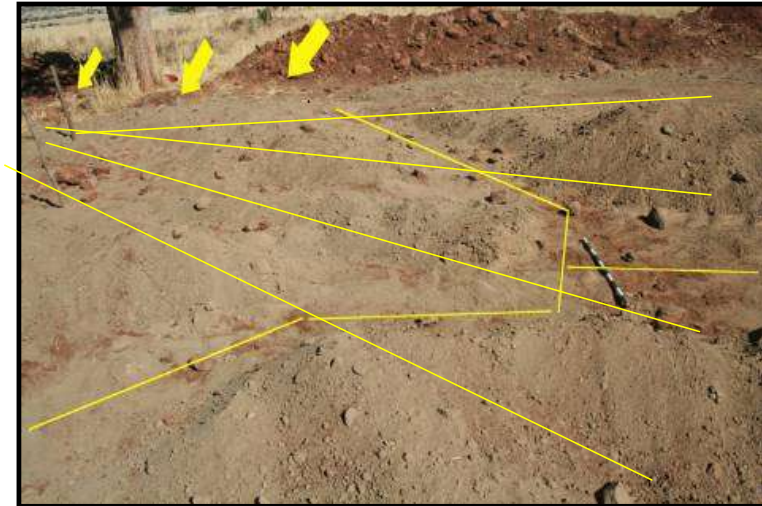


FIG. 8B:

EXCAVATIONS AND REMAINING PART OF STONE WALL AT GLK066_75



FIG. 9: BEFORE AND AFTER PHOTOGRAPHS OF GRAVE AT GLK066_74⁶

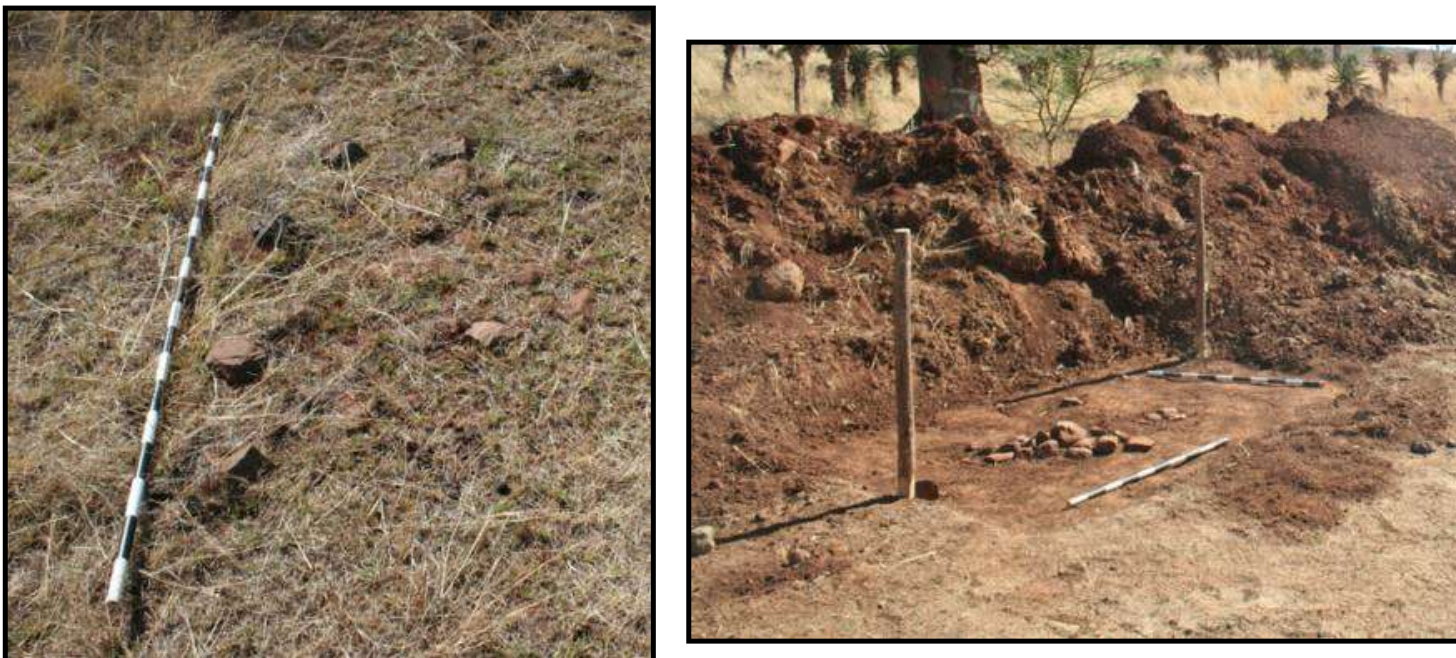


FIG. 10: BEFORE AND AFTER PHOTOGRAPHS OF GRAVE AT GLK066_75

⁶ Note the change in the size of the stone cairn



3.3 GLK118_96

This site is located near KP268 and consists of one (recent) historical grave (fig. 1 – 3). The local community does not acknowledge these graves as being theirs, as they have been recently relocated to the area. The grave is probably related to farm labourers who worked on this farm prior to the land settlement. The graves either predate 1937 or between 1955 and 2000, and I would choose the latter date as it is in association with square, or rectangular foundations.

The grave was originally demarcated with blue poles and danger tape and an instruction was given for it to be fenced off. The grave also occurred outside of the original RoW, but it was later changed to compensate for GLK118a. There was no HIA on site during this part of the RoW clearance.

The initial site inspection could not locate the graves, or their markers, however, the grave was later located with the surveyors using our previous survey data. The grave was covered with the topsoil (fig. 11). The graves were located and the topsoil was removed to expose the graves.

FIG. 11: LOCATION OF GLK118_96



Significance of site: The site is of high significance

Significance of impact: Medium negative if affected.

Previous mitigation: There was no previous mitigation. The graves were supposed to be fenced off if they were in the RoW,

Occurrence of damage: The graves were probably affected during the RoW clearance when the topsoil was moved.

Assessment of Damage: The graves were technically not damaged and have been cleaned. The associated walling was also cleaned. There was however, an infringement on the site and this forms part of the pattern of demarcated heritage sites being ignored by the contractor.

FIG. 12: LOCATION OF GLK118_96



FIG. 13: GLK118_96 GRAVE AFTER CLEANING



FIG. 13: GLK118_96 GENERAL AFTER CLEANING



3.4 GLK118a

This site is located at KP268 and consists of two graves that probably date to the recent past and GLK118 (fig. 1 – 3). The area was originally surveyed in as being possible remains of house foundations. We resurveyed the site at a later stage (after notification by the ECO) when the grass had been burnt, and reclassified the site to being graves beside house foundations. The ECO demarcated the site with blue wooden poles and instructions were given for the site to be fenced off. The co-ordinates for the graves were submitted to the JV in March 2010. The line originally went through the graves, but was then rerouted. No HIA was on site during the RoW clearance, as the graves were out of the RoW.

The local community does not acknowledge these graves as being theirs, as they have been recently relocated to the area. The grave is probably related to farm labourers who worked on this farm prior to the land settlement. The graves either predate 1937 or between 1955 and 2000, and I would choose the latter date as it is in association with square, or rectangular foundations.

The graves were located with our survey data. The graves were outside of the RoW, but rocks had covered one during the trenching phase (fig. 15). The rocks were removed and the grave was cleaned up (fig. 16).

Significance of site: The site is of high significance

Significance of impact: Low negative

Previous mitigation: Area was demarcated and the line was rerouted to avoid the graves.

Occurrence of damage: During the trenching phase.

Assessment of Damage: The graves were technically not damaged and have been cleaned. The associated walling was also cleaned. There was however, an infringement on the site and this forms part of the pattern of demarcated heritage sites being ignored by the contractor.

FIG. 15: STOCK PILE OF ROCKS OVER ONE GRAVE AT GLK118A⁷



FIG. 16: CLEANED GRAVES AT GLK118A

⁷ Top arrow indicates the covered grave
Document Location On J: Drive
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3.5 N3: KP265.300

This site is located at KP265+286 and consists of one possible grave. The possible grave probably dates to the HP or more recent past. Figures 17 – 19 indicate that there is no human occupation in this immediate area in 1937, 1954 or 2000. The site was located by the ECO during pre-RoW clearance and demarcated with blue wooden poles (fig. 20). I visited the site and confirmed that it is a possible grave, and the area was fenced off and marked off by the RoW supervisor. The landowner recently stated that these features are related to the construction of the N3. This statement has no bearing on the site, as the area was demarcated as a heritage site, regardless of its content, and should have been treated as such.

The grave has been damaged in several ways. The fenced off area has been ignored and damaged. The stone cairns are visibly missing due to trenching spoil material being placed on top of it (fig. 21). Site instructions were given for the grave to be covered with protective material during blasting activity; however, I am not sure if this was undertaken. All work activity in the area of the grave had to cease until further notice as from June and a site directive for this was given from Transnet. This meant that the pipe could not be placed into the trench, nor could any backfilling occur.

The site was visited in early July with the surveyors to demarcate its extent. At this stage, the pipe had not been placed into the trench. When I visited the site in mid-September, the pipe had been placed into the trench, and the trench had been backfilled (fig. 22). This was undertaken without my permission, as I had not yet mitigated the site. There was thus a disregard for Transnet's and my directives. One reason for closing the area off was that human remains may be scattered and construction work would further affect these remains.

The trenching team has removed the poles demarcating the outer edges of the grave. The demarcated area was cleaned of the stockpile and the some of the original cairns were exposed (fig. 23). Some of the rocks are missing. I placed some stones to indicate the position of the possible grave (fig. 24).

The area was also blasted without permission from me, as I was concerned the blasting debris would affect the grave. This email was dated 27/03/2010. NMPP then informed the various people (28/03/2010) to liaise with me regarding my concerns. This never occurred, and the blast went ahead without the possible grave being protected.

Significance of site: Unless proven otherwise, the site is a grave, and it is of high significance.

Significance of impact: Low negative

Previous mitigation: Site was fenced off

Occurrence of damage: During trenching and later when the trench was backfilled.

Assessment of Damage: The area was cleaned and the outline of the possible grave was demarcated. A few of the rocks from the cairn are missing.

FIG. 17: LOCATION OF POSSIBLE GRAVE IN 2000

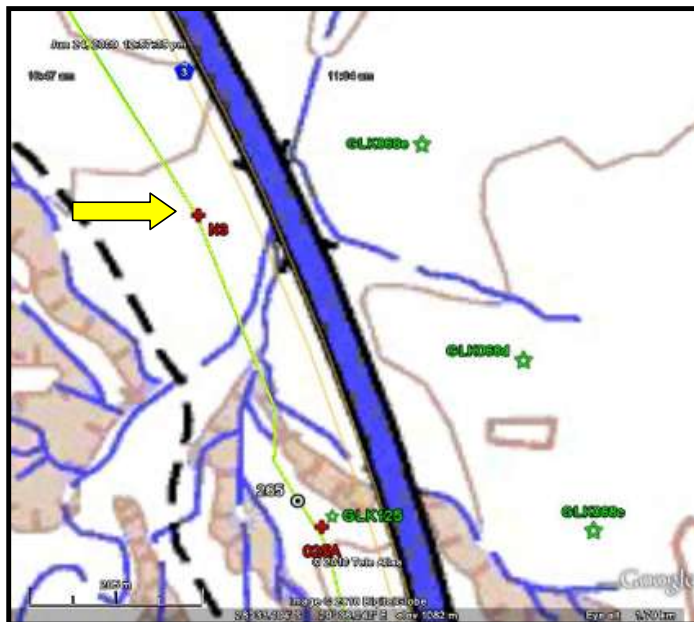




FIG. 21: STOCKPILE OVER DEMARCATED FENCING⁸



⁸ Yellow arrow indicate original fence poles
Document Location On J: Drive
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FIG. 22: BACKFILLING AFTER THE AREA HAD BEEN CLOSED⁹



POSSIBLE GRAVE WITH STONES DEMARACTING THE AREA

**FIG.
24:**

⁹ Red arrow indicates the location of the possible grave.

¹⁰ Yellow arrows indicate the original fencing poles



3.6 GLK122b_4

This site is located at KP264+500 and consists of one grave. The grave was in the RoW, and near the centre point, and the line was rerouted. There is a stone walled kraal ~5m of the grave and the two features are probably related. The site dates to the recent past. The site is noticeable as the blue gum tree is visible in the recent aerial photographs. I could not locate the tree in the 1937 aerial photographs, but then the tree would have been much smaller. Settlements are indicated in this area in the 1954 topographical map, but not on the 2000 map. Figures 24 – 26 indicate this. The grave probably dates between 1937 – 1954. There are several graves and settlements on the hill just above this grave, and some would be contemporary with this grave, while others are much older. For example some stone walling and settlements can be seen uphill of this grave in the 1937 aerial photograph.

The kraal and grave was demarcated with metal and wooden poles and danger tape, and was fenced off. Two HIAs were on site during the RoW clearance to ensure that the grave and walling was not damaged.

The stonewalling has had topsoil placed over the walls since RoW clearance. The cairn (fig. 27) does not exist anymore and we had to relocate the ends of the grave with our survey data. I placed several trenches in the area of the poles to determine if any form of stone cairn or burial could be seen (fig. 28). It appears that the entire cairn has been removed and we could not locate a burial pit. There was no change in soil colours to indicate a burial however; this is expected as the bedrock is near the surface. We could

not observe any soil colour changes for the archaeological graves that were excavated in this area in 2009. I did observe one bone fragment from the excavation, but could not determine if it was human or animal. The fragment was kept in case it needs to be analysed. The area was fenced off after the excavations.

Significance of site: The grave is of high significance.

Significance of impact: The impact is high negative.

Previous mitigation: The area was demarcated and fenced off.

Occurrence of damage: After RoW clearance

Assessment of Damage: The entire cairn has been removed and presumably the grave itself.

FIGURE 24: 2000 TOPOGRAPHICAL MAP INDICATING THE SITE¹¹

¹¹ Yellow Arrow indicates GLK122b_4; red arrow indicates GLK122c
Document Location On J: Drive
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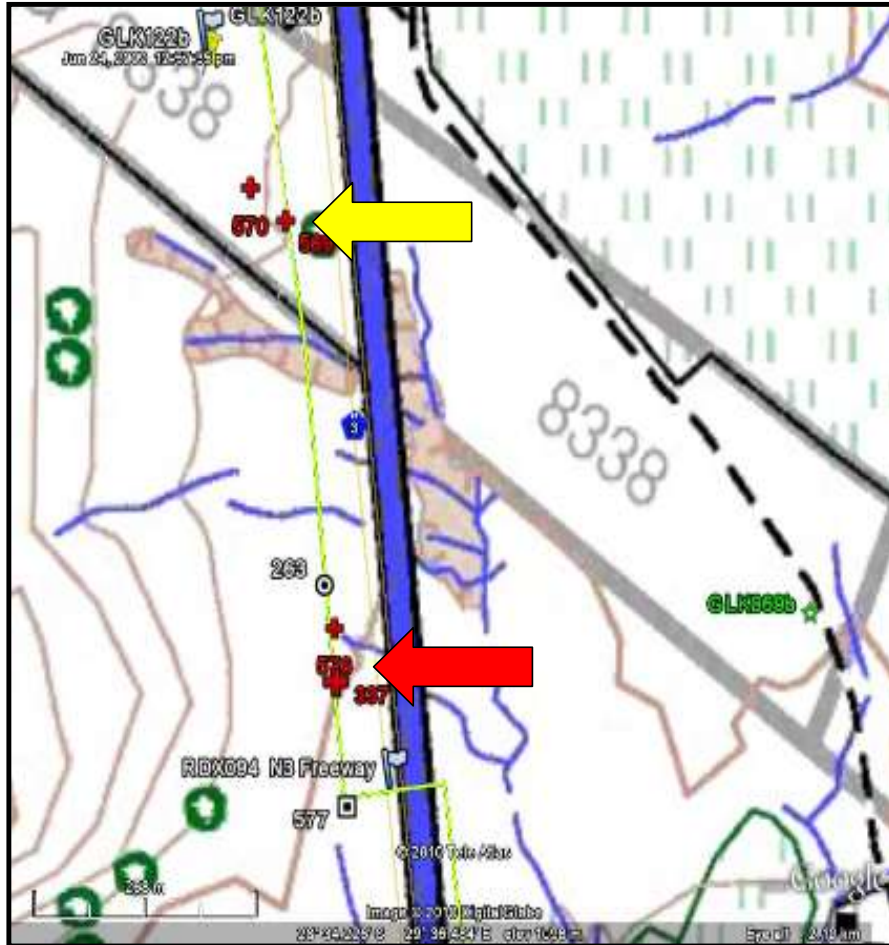


FIGURE 25: 1954 TOPOGRAPHICAL MAP INDICATING THE SITE

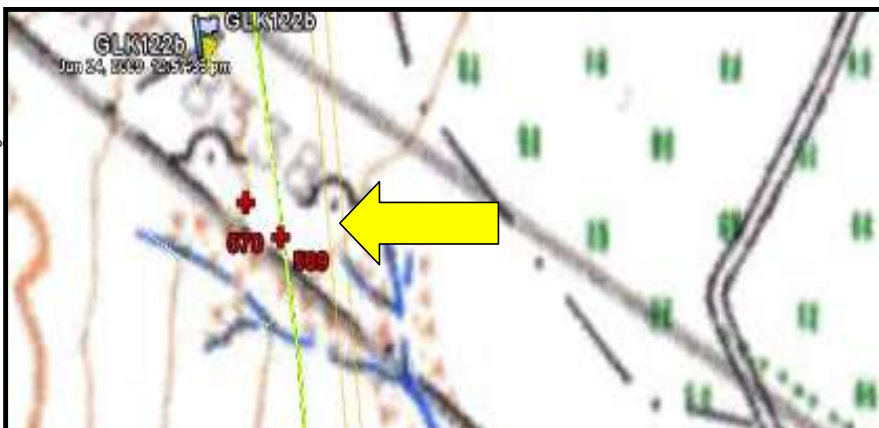


FIGURE 26: 1937 AERIAL PHOTOGRAPH INDICATING THE SITE

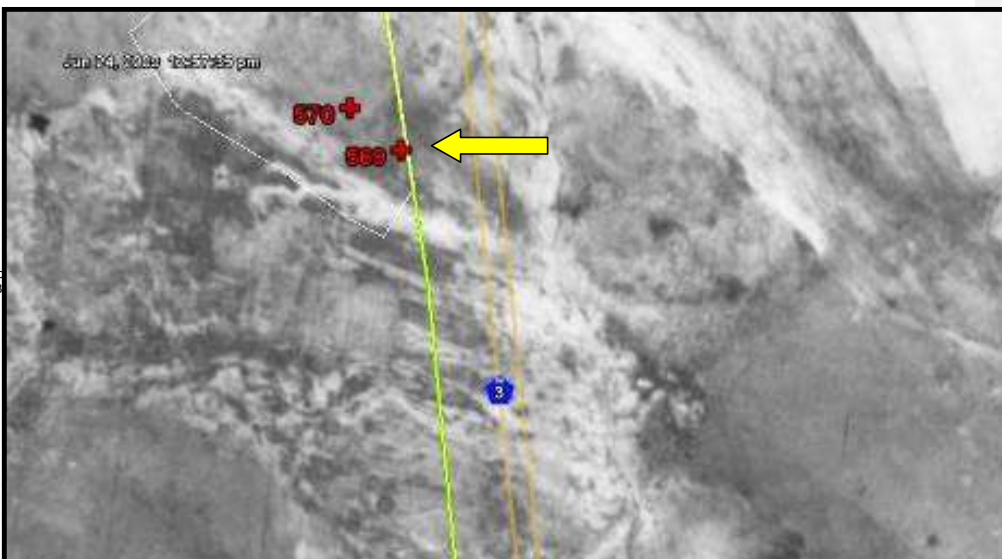
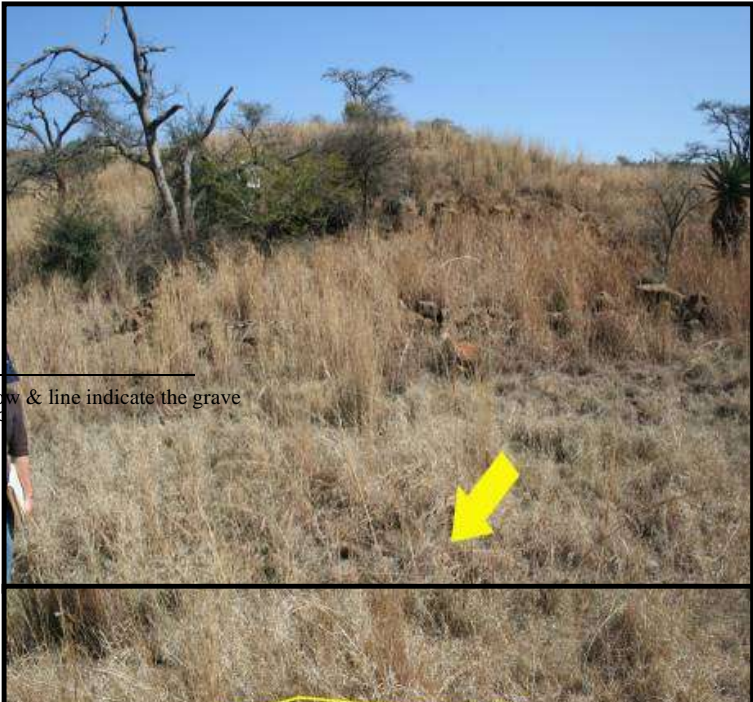


FIGURE 27: POSITION OF GRAVE IN JULY 2009¹²



¹² Yellow arrow & line indicate the grave
Document Location C
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FIGURE 28: POLES INDICATING THE EXTENT OF THE GRAVE AND THE EXCAVATION TRENCHES



3.1 GLK122c grave 031a

This site is located at KP261 and consisted of one grave (fig. 29 - 30). The site dates to the HP, if not the LIA. The grave was demarcated with metal and wooden poles, and fenced off at a later stage. Several JV members also saw the fenced grave during a site inspection. Two HIA were present on site during the RoW clearance. I originally thought the grave was under the trenching spoil, but I then rechecked the location and realised it was further north. I relocated the site with a GPS. I then placed a 4m x 4m excavation square around the centre point of the GPS (fig. 31). The soil was taken down to the next layer of yellowish gravel.

The stone cairns are missing due to additional construction activity. The excavations could not locate any concentration of stones, although two possible areas were noted (fig. 32). I believe that these two possible areas are the result of natural rock formations and not the graves. The area was fenced off after the excavations. The grave ~50m uphill was not damaged.

FIGURE 29: LOCATION OF GRAVE AT GLK122C



Significance of site: The site is of high significance

Significance of impact: High negative

Previous mitigation: Area was fenced off.

Occurrence of damage: After RoW clearance.

Assessment of Damage: The entire cairn has been removed and presumably the grave itself.

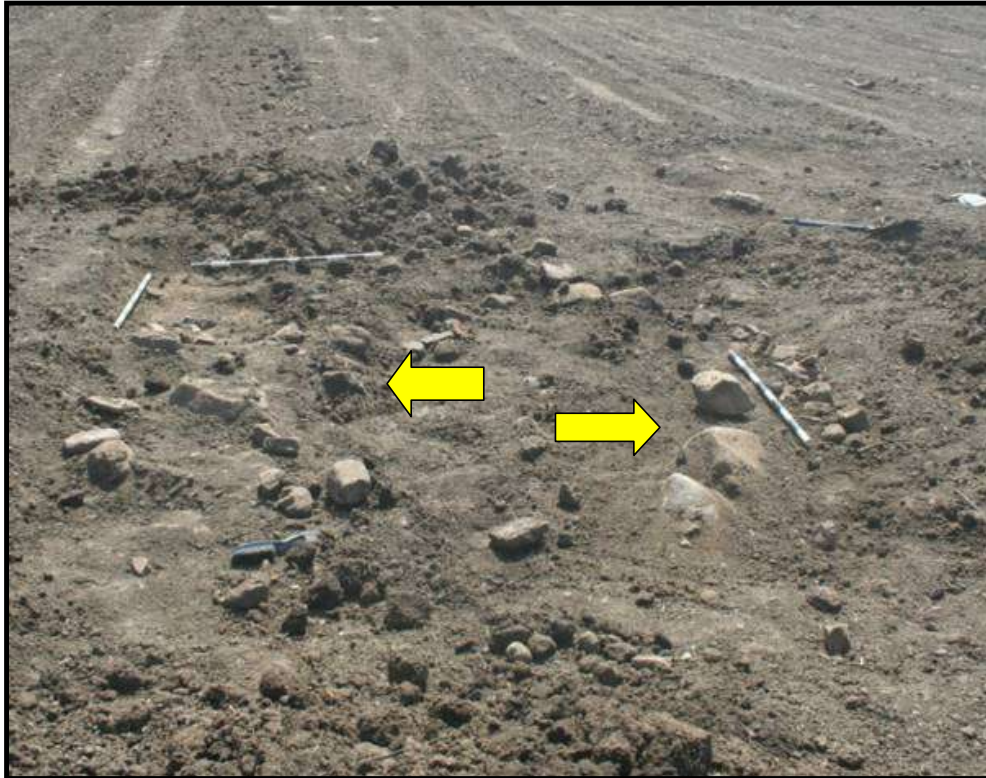
FIGURE 30: GRAVE AT GLK122C



FIGURE 31: CLEARED AREA WHERE THE GRAVE OCCURRED



FIGURE 32: EXCAVATED GRAVE AREA AT GLK122C



3.2 GLK063a grave 16b

This site is located at KP273.800 and consists of several graves. The grave, and the rest of the site, are younger than 60 years in age, and living relatives may claim this graves. An informant told me, in July 2009, that people still visit the graves just outside the RoW, and these are probably related to the damaged sites. The houses of the living ancestors are shown on the 1986 topographical map, but not the 1963 topographical map, nor on the 1937 aerial photograph (fig. 33 -35). The artefacts near the houses suggest a 1970 onwards occupation.

FIGURE 33: 1986 TOPOGRAPHICAL MAP INDICATING THE GRAVES AT GLK063A¹³

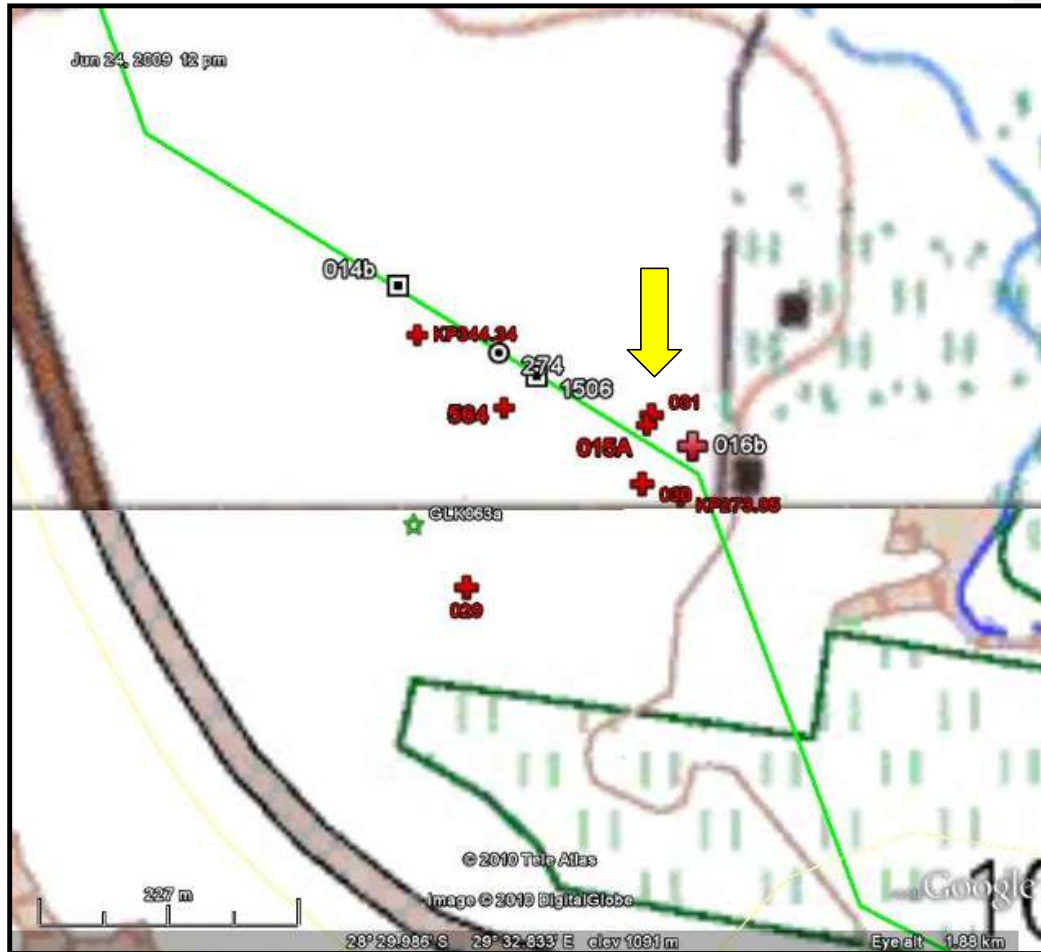


FIGURE 34: 1963/1954 TOPOGRAPHICAL MAP INDICATING THE GRAVES AT GLK063A¹⁴

¹³ The upper part of the map is 1986, while the lower part is 2000
Document Location On J: Drive
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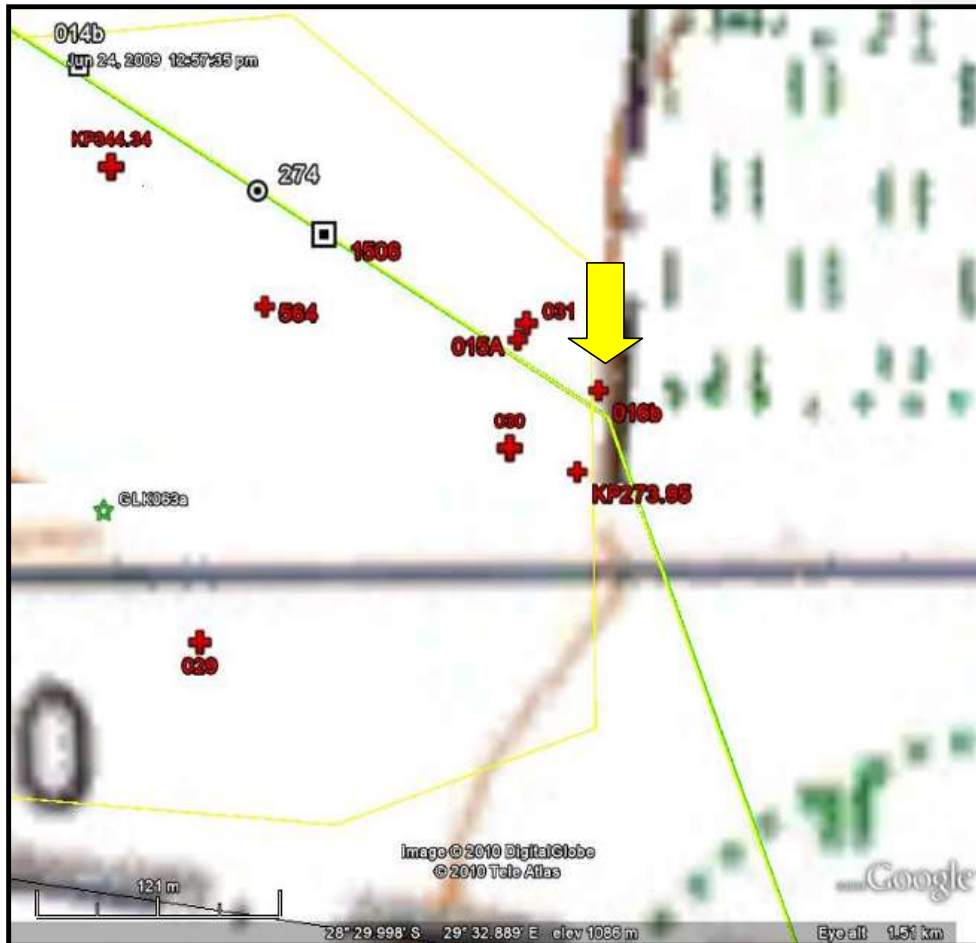
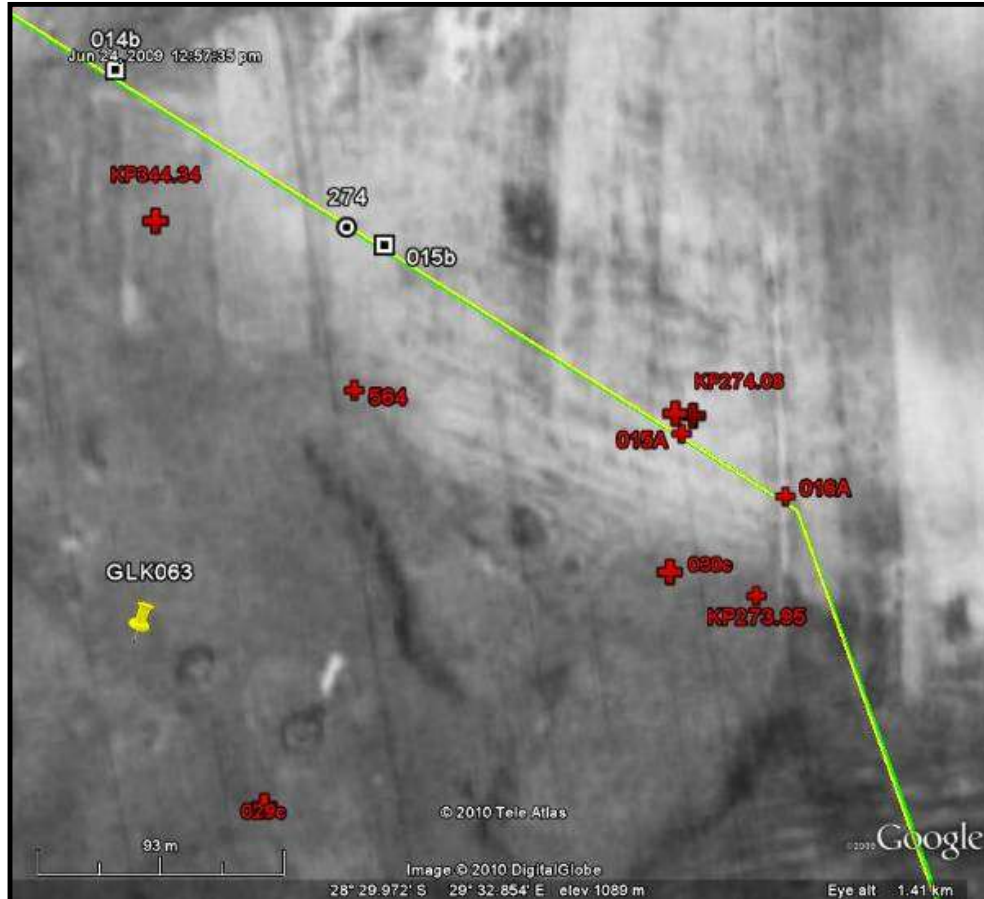


FIGURE 35: 1937 AERIAL PHOTOGRAPH INDICATING THE LOCATION OF THE GRAVES

¹⁴ The upper part of the map is 1963, while the lower part is 1954
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The grave was demarcated with metal and wooden poles and was fenced off before the RoW clearance (fig. 36 shows the grave in 2009). Two HIA were on site during RoW clearance. Subsequent to RoW clearance, the grave was covered by trenching spoil (fig. 37). This is the first grave of the damaged sites that has definite living descendants. Transnet may need to compensate the descendants.

Significance of site: The site is of high significance

Significance of impact: The impact on the grave is low

Previous mitigation: The graves were fenced off and clearly demarcated.

Occurrence of damage: After RoW clearance.

Assessment of Damage: The graves are technically not damaged and they have been cleaned. There was however, an infringement on the site and this forms part of

the pattern of demarcated heritage sites being ignored by the contractor. The living descendants may claim that the ancestral spirit needs to be appeased.

FIGURE 36: 2009 PHOTOGRAPH OF THE GRAVE



FIGURE 37: TRENCHING SPOIL OVER GRAVES AT GLK063A GRAVE 16A



FIGURE 38: CLEANED GRAVE AT GLK063A-GRAVE 16A



3.3 GLK063a grave 17a

This entire site is located at KP273 – KP274 and consists of several graves, stone walls, and house floors. The specific grave is younger than 60 years in age, and living relatives may claim this grave. I originally thought the grave was covered by trenching spoil, but it occurs outside of the RoW. It is thus not affected.

I note this grave for a specific reason. This area was demarcated as a 'no working area' in the Transnet directive. When I came back to the site in September, the pipe had been placed into the trench and the area had been rehabilitated. This should not have occurred and luckily there were no graves, else they would have been destroyed...

Significance of site: The site is of high significance

Significance of impact: There is no impact

Previous mitigation: None

Occurrence of damage: None

Assessment of Damage: No damage

3.4 KP189.130

This site is located at KP189.130 and consisted of two graves that date to the recent past (probably within the last 60 years). The site was first reported, via email, on 24 February 2010, and visited in early March 2010. The graves were confirmed and I requested them to be demarcated via email¹⁵. We are attempting to find out what happened thereafter. The graves were at least demarcated with blue poles as I had observed one in the surface spoil heap. Someone has removed the top cairns.

¹⁵ Email correspondences are available on request
Document Location On J: Drive
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The site is located near the top of the hill. The site consists of a grave (fig. 39) and two stone walled kraals. There are several other recorded sites in the general vicinity. The site does not show up on the 2000 topographical map (fig. 40), but there is a single house on the 1937 aerial photograph (fig. 41). This suggests that the grave could date to at least 1937, if not a bit younger. This implies that there will be a living descendant.

The grave cairn has been removed and there is no evidence of it. Both the surveyors and I relocated the grave with the GPS co-ordinate. I then placed an approximate 4m x 4m square around this marker. I initially opened several trenches length-wise and width-wise in this square. This was taken down to bedrock, which was 5cm – 10cm below the current surface. I looked for areas with concentrations of stones, however this became futile as the soil was very thin and then bedrock was reached: bedrock was the same raw material used for the cairn.

The excavations yielded three possible localities for the grave (fig. 42). These do not; however, appear to be the graves themselves.

Transnet may be required to undertake a social impact assessment to determine if any living relatives claim this grave.

Significance of site: The site is of high significance.

Significance of impact: High Negative

Previous mitigation: Area was demarcated at least with blue poles

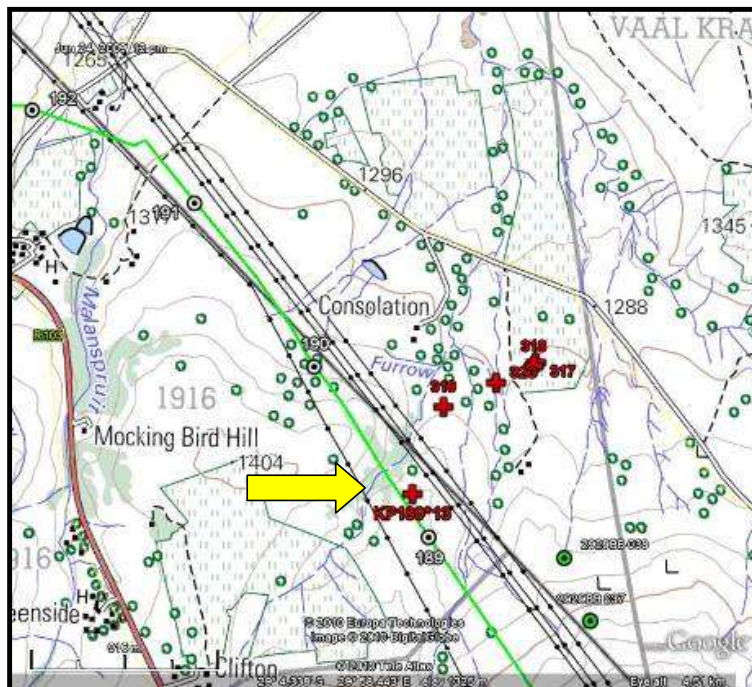
Occurrence of damage: Unsure

Assessment of Damage: The grave does not exist anymore

FIGURE 39: GRAVE AT KP189.300



FIGURE 40: LOCATION OF GRAVE AT KP198.300



¹⁶ Red Cross = grave; Green circle = previously recorded archaeological site, yellow arrow indicates house
Document Location On J: Drive
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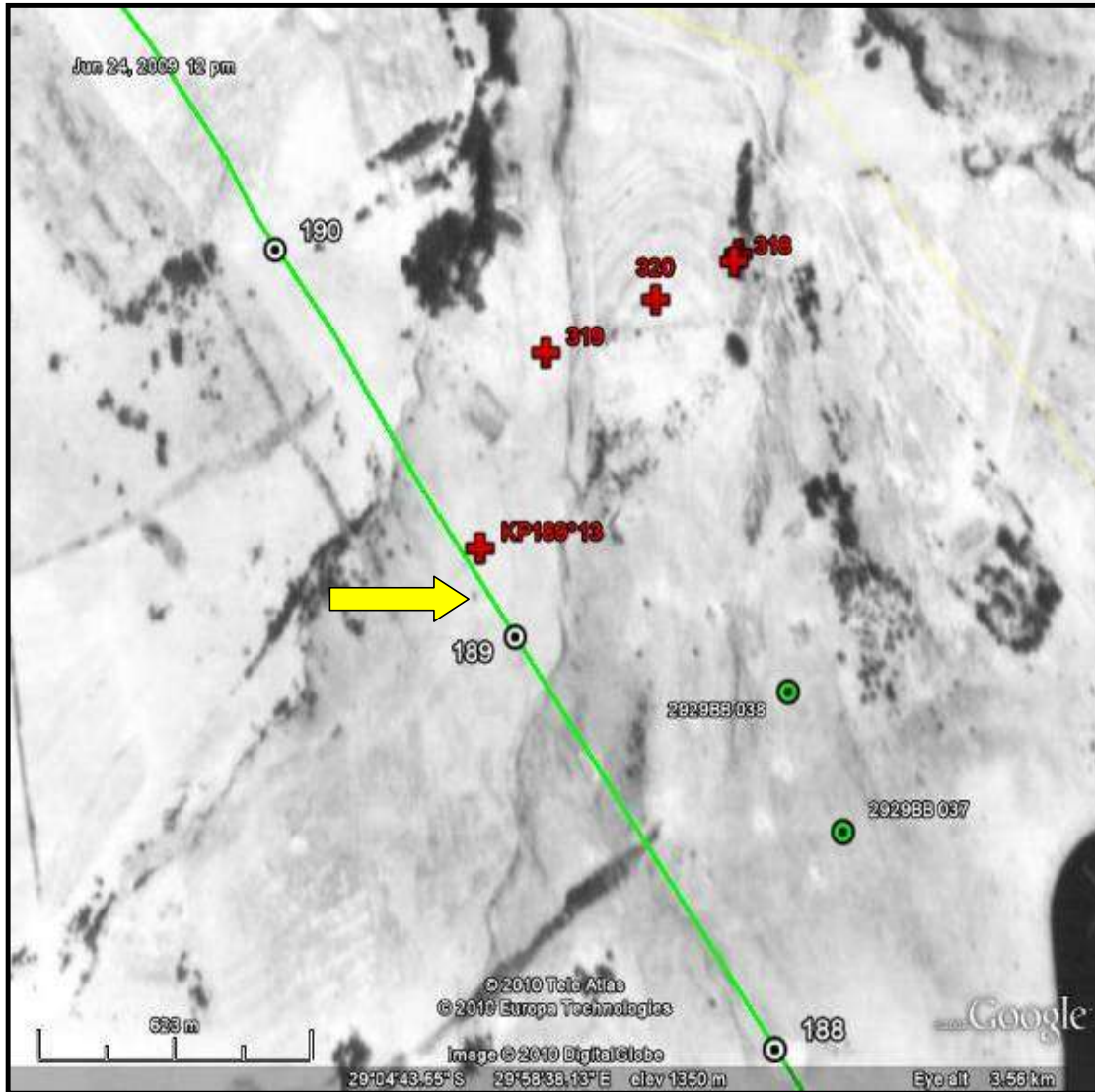


FIGURE 42: POSSIBLE LOCATIONS OF THE GRAVE KP189.300



3.5 GLK 078 Engravings

This site is located at KP238+101. The site consists of LIA and HP engravings and is a part of a larger engraving area. There are also several kraals and graves at the site – that extends for ~1,5km. A total of 56 2m x 2m squares were excavated at this site in October 2009. The excavations occurred along the area to be affected by the trench. Kraals and graves further away, but within the RoW, were noted, and were fenced and demarcated. The engraving sites that were in the ROW were demarcated with metal and wooden poles and were fenced off before the RoW clearance began. Two HIA were on site during the RoW clearance. The entire area was considered sensitive.

The general area has ~100 engravings. The engravings date to the Late Iron Age and Historical Period. The location of each engraving on a site is important, as it has been placed in a specific context. The sense of place is highly symbolic, as is the shape of the rock. Any damage to the location, or the face, of the engraving, is thus damage to the engraving itself.

An email was sent to various people within the NMPP, in early March 2010, to inform them of blasting that will be undertaken in this area. I specifically denied blasting activity at this area, as it would be affect the engraving sites. I had several concerns and requested further information. NMPP then informed the various people (28/03/2010) to liaise with me regarding my concerns. This never occurred, and the blast went ahead without the engravings being protected.

The engravings were covered with blast material from blasting activity, and with material from the trenching spoil. That is, the blasting occurred at the site without an HIA on site, nor with permission, and the trenching team has deposited spoil material over parts of the fenced off engraving area.

The site instruction from June was that no work was to occur in this area until the engravings had been mitigated. I returned with the surveyors in July and pegged out the six affected engravings. No pipeline work had occurred on the site. I returned in September to find that the pipeline had been placed into the trench and that more spoil material had been placed over the engravings. So much that in one case that the pole we used to demarcate one engraving was no longer visible – this was later found under the spoil material. This area was part of the no –work directive from NMPP. The NMPP environmental officer had informed that work was being undertaken and I again reiterated that the area was closed off for work. The trenching team had clearly disregarded the no-work directive.

A total of six engravings have been affected. Five of the engravings were recorded with the surveyor in 2009 and are numbered as GLK078_290_2116- 2118, and GLK078_291_2119- 2120. Umlando recorded the sixth engraving in October 2009.

High-resolution photographs exist for all engravings, and these may be viewed on request, as the photographs in the report do not do justice to the engravings. The red point on the scale in the photographs points to north.

GLK078_290

These four can be seen in figure 43. Fig. 43 also indicates the impact of blasting has had by covering most of the engravings with sand and broken rocks. Note all the broken (grey-blue) rocks around the engravings. The broken rocks are probably the cause of the scratching and impact points on the engravings.

Engraving 2116 (fig. 44) consists of several circles that have been pecked into the boulder. There is another smaller pecked circle on the outside. There are three impact points on this rock of which two are directly on the engraving.

Engraving 2117 (fig. 45) consists of a pecked rectangular image and some indeterminate pecking. This engraving has not been damaged.

Engraving 2118 (fig. 45) consists of a two rectangular-oval-type of pecking that are joined on one side. There are four impact points that have left the rock slightly scratched. The engraving itself has not been damaged. This specific engraving was spray painted by the surveyor's assistant while we were locating the engravings (I was discussing the excavation method with the TLB operator while the surveyor located the next batch of engravings). He had sprayed the rock to indicate where the pole should be as it could not be placed firmly into the ground. Afterwards I asked him if he could see the engravings, and then I showed him other engravings. I then pointed out where he had sprayed, whereupon he immediately saw the engravings. The spray paint did not interfere with the engraving and it can be removed with the correct equipment. I believe this was purely accidental.

GLK078_291

Engraving 2119 (fig. 47) consists of a semi-rectangular pecking. It has not been damaged even though it was at the bottom of the spoil heap.

Engraving 2120 (fig. 48) consists of two oval circles that have been pecked. The engravings have not been damaged despite being underneath the spoil heap. The 'after' photograph in fig. 48 does not show the engravings clearly. This is because it had rained and the soil was muddy and had slightly stained the engraving. I tried to wash off the mud but it did not work. The engravings are however visible on site.

Other engravings and scratching occur on boulders in the area. These were not affected by blasting activity. All engraving areas discussed above have been fenced off.

Engraving WP20, (fig. 46) consists of indeterminate pecking and several lines that have been scratched into a checkerboard-like pattern. These scratching are very faint. There are five impact points on this engraving, of which some occur over the faint scratching.

FIGURE 43: LOCATION OF FOUR ENGRAVINGSAT GLK078_290 BEFORE/AFTER DAMAGE

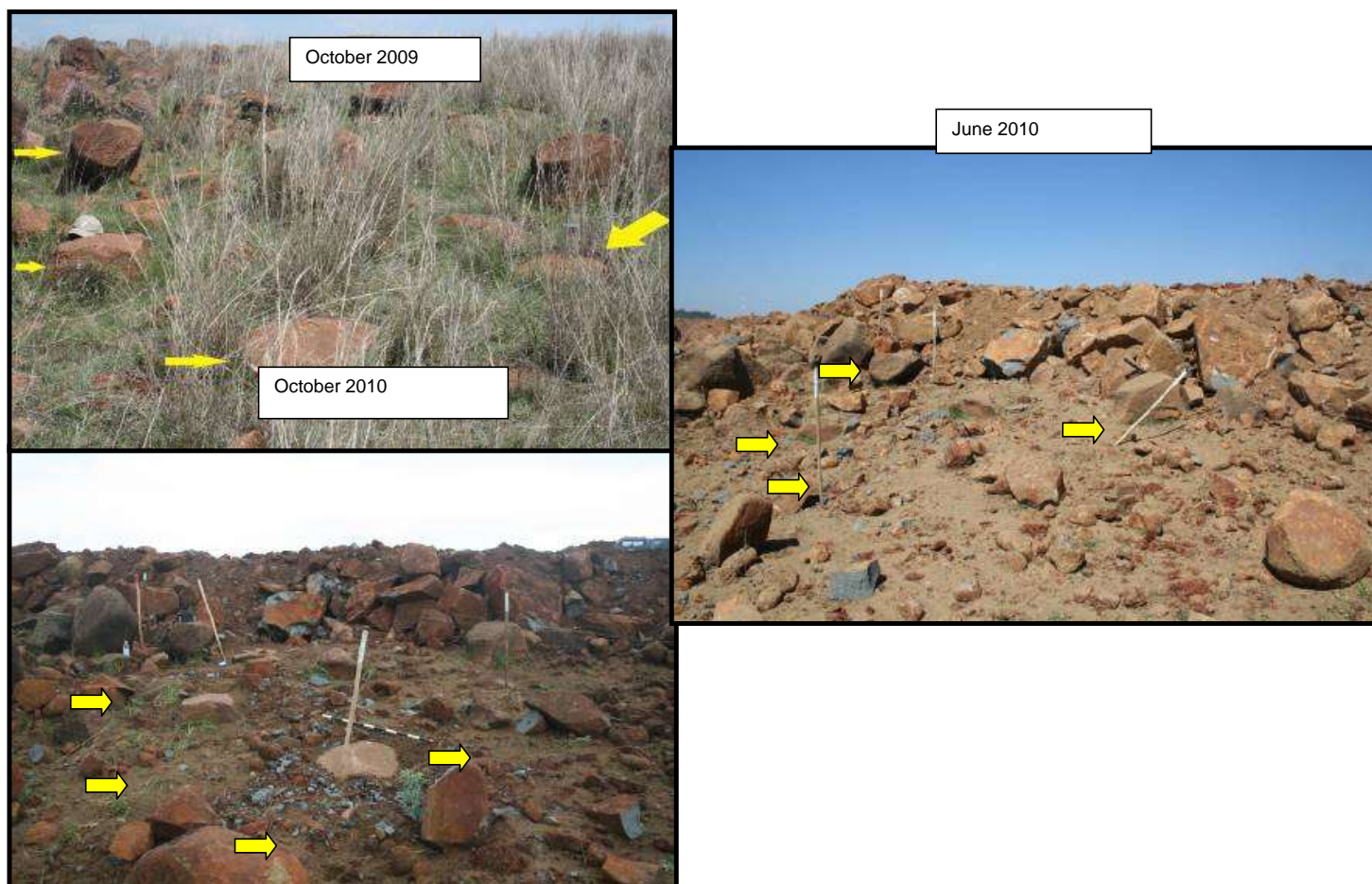
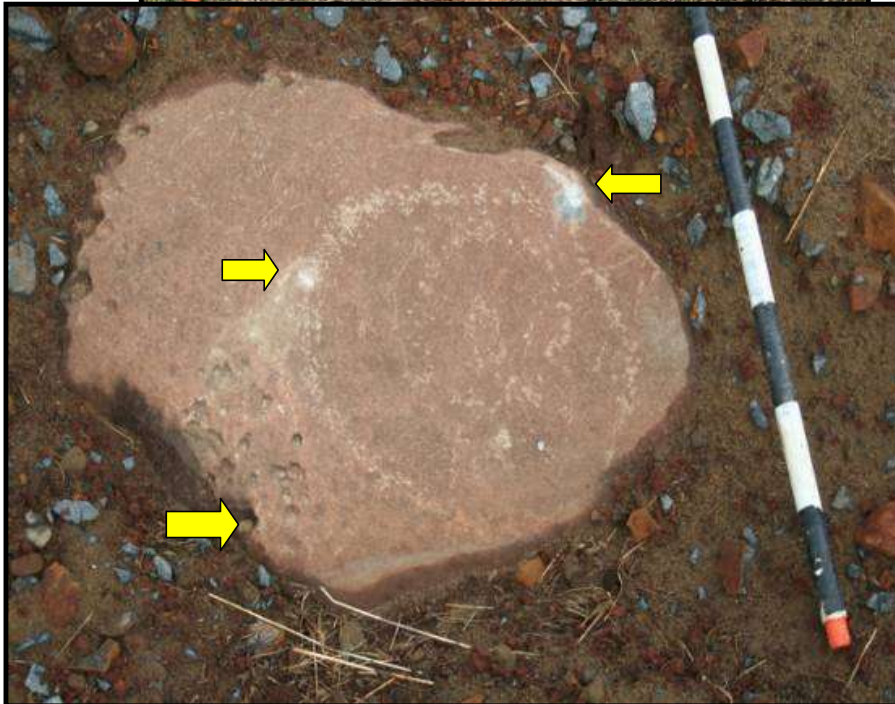


FIGURE 44: BEFORE/AFTER IMAGES OF GLK078_290_2116



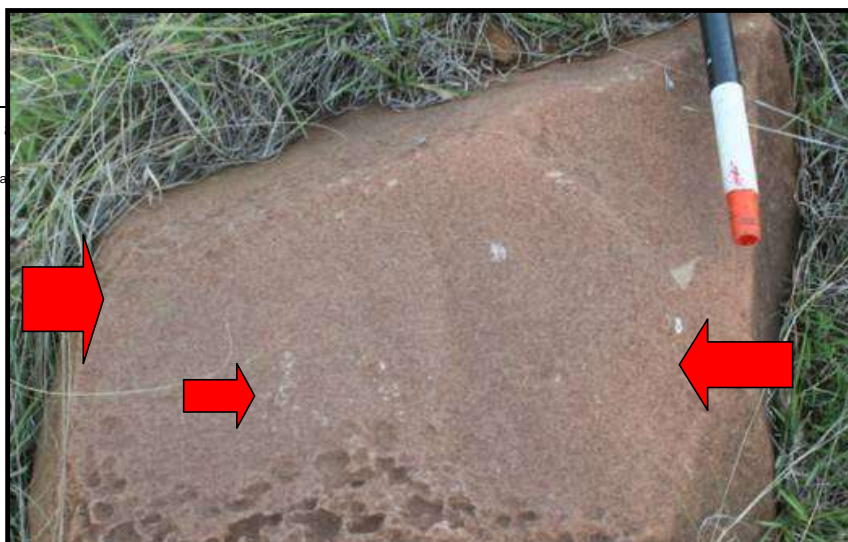
**FIGURE 45:
BEFORE/AFTER
IMAGES
OF
GLK078_290_2117**



FIGURE 45: BEFORE/AFTER IMAGES OF GLK078_290_2118



FIGURE 46: BEFORE/AFTER IMAGES OF GLK078_290_WP20¹⁷



¹⁷ Yellow

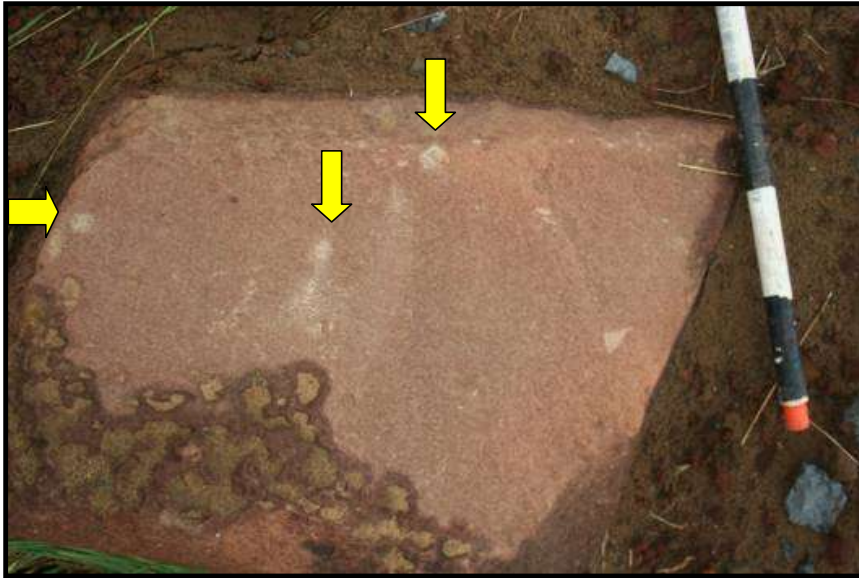


FIGURE 47: BEFORE/AFTER IMAGES OF GLK078_291_2119



FIGURE 48: BEFORE/AFTER IMAGES OF GLK078_291_2120



Significance of site: medium significance

Significance of impact: low-medium negative

Previous mitigation: Area was fenced off; blasting was not to occur near engravings

Occurrence of damage: After RoW clearance, during blasting, and during trenching

Assessment of Damage: Several engravings have been damaged

3.6 GLK078 kraal

This site is located at KP239 and consists of a stone walled kraal. The site dates to the LIA. The site was demarcated with wooden poles and danger tape during the RoW clearance, and was supposed to be fenced off. There were two HIA on site during RoW clearance.

The kraal wall has been slightly damaged by heavy machinery driving over it (fig. 49). The kraal has been fenced off.

Significance of site: The site varies from medium to high significance.

Significance of impact: low negative

Previous mitigation: Area had been demarcated

Occurrence of damage: After RoW clearance

Assessment of Damage: Kraal was slightly damaged as rocks were displaced.

FIGURE 49: DAMAGED KRAAL AT GLK078¹⁸

¹⁸ Yellow arrows indicate the damaged area of the kraal.



3.7 General sites with low negative impacts

Several gravesites have had low negative impacts. These consist of the pipeline being placed above the grave, or its fencing. The impact is thus not on the grave itself but on the heritage zone (fig. 50). All of these sites have been noted and no work was to occur at these sites unless an ECO or an HIA was on site. This was to ensure that the graves were not damaged. I was never called out to supervise these sites, and neither were the independent ECOs. I did resurvey the graves along this section, and none had been damaged. The 1953 topographical map indicates that there are houses associated with all of these graves, although there are fewer houses in 1937. There would thus be living descendants who could claim these graves, especially if any get damaged.

FIGURE 11: EXAMPLE OF LOW NEGATIVE IMPACT



4 Conclusions and Recommendations

Several sites have been negatively affected by the NMPP. These sites include human graves, engravings, and kraals. In all of the cases, with the possible exception of one, these sites were clearly demarcated and most had been fenced off. Furthermore, the sensitive areas had an HIA on site during the RoW clearance on most of the sites. Some sites did not have an HIA present as most of the mitigation had occurred and the sites had been fenced off.

Umlando, Transnet and the independent ECOs have gone to great lengths to ensure that the sensitive sites were not damaged during NMPP construction. The construction activities that were thought to have the greatest impact were monitored, and sites were demarcated. In general, there has been good communication between Transnet, JV, ECOs and Umlando

regarding the heritage management, and the various emails between parties can attest to this. The emphasis for this part of the project was that heritage sites should not be damaged.

Transnet is currently investigating who damaged the sites. There is however, a consistent pattern when it comes to the damage to the sites. All sites that are on the trenching team's side have been negatively affected in some manner. The trenching teams (and related activities) appear to have disregarded all heritage sites, and have merely gone through and/or covered sites. The trenching team has also worked in three areas where they were specifically told that they could not work. I am left with the impression that the building of the pipeline and placing it into the ground was more important than the heritage sites they had damaged. I have personally spoken to the trenching team and showed the relevant people where they may not work – several people witnessed this.

The current management plan has been to stop all activity in the areas where sites have had any negative impact until further notice. Those sites with a low negative impact will be fenced off again and no activity may be allowed near the site unless an HIA or ECO is on site.

All the sites have been mitigated and assessed in some manner. All sites have been fenced off and someone has been trained to monitor work at all of these sites during construction activity. These sites, with all of the other sites along the NMPP, will be audited after reclamation has occurred.

The impacts are as follows:

- There are five graves that cannot be located: 2-3 of these may have living descendants.
- One possible grave has been partially damaged
- Four graves have been located and cleaned.
- Most of one stone walled kraal has been irreversibly damaged
- Three engravings have been damaged by blasting activity
- Three engravings were not damaged
- Those graves that were slightly affected by the pipeline have been fenced off

The next step is to submit this report to Amafa KZN Council, and wait for their decision. The NMPP report on who is responsible for damages should accompany this report.

I need to reaffirm that the NMPP project has done all it could to comply with the heritage legislation and the heritage practitioners for the duration of this project. Compromises from all sides have been made to ensure that the pipeline project and heritage issues are dealt with in an effective manner. It is a great pity that these sites have been damaged near the end stage of the project, due to failure by a few to abide by directives and avoid clearly demarcated sites.

5 References