

A Report on the impact on identified graves by construction of the water pipeline (SE2) between Spitskop Pump Station and Mototolo Mine, located near Steelpoort, Limpopo Province

Compiled for:

Alta van Dyk Environmental Consultants

Report Author: Mr JP Celliers

6 July, 2023

I, Jean-Pierre Celliers as authorized representative of Kudzala Antiquity CC, hereby confirm my independence as a specialist and declare that neither I or the Kudzala Antiquity CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which I was appointed as Heritage Consultant, other than fair remuneration for work performed on this project.

SIGNATURE: 

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Executive summary

Site name and location: A section of a water pipeline construction project known as: The water pipeline (SE2) between Spitskop Pump Station and Mototolo Mine, located near Steelpoort, Limpopo Province

Purpose of the study: To assess any impact which the construction activities may have had on graves which were identified during a Heritage Impact Assessment as part of an Environmental Authorization process before construction of the pipeline commenced.

Topographical Maps: 1:50 000 2430 CC (2002).

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Report date: 6 July 2023

Project overview, findings and recommendations:

A Heritage Impact Assessment was undertaken by Beyond Heritage Cultural Resource Consultants in respect of the proposed construction of a water pipeline between a pump station located at Spitskop and the Mototolo Mine located near Steelpoort in Limpopo Province (van der Walt, 2021). Three grave sites were identified during this survey and named LWUA1-3. A fourth site, LWUA 4, consisting of ephemeral stone terraced walls was also identified. The grave sites were all located more than 30 meters from the proposed water pipeline construction alignment (Van der Walt, 2021:6). As a result of concerns raised by the local community that the construction activities are currently negatively impacting on the graves located at site LWUA 1, Alta van Dyk Environmental Consultants requested an archaeologist to do an on-site inspection in an effort to assess if construction activities have negatively impacted on the grave site.

The results of the inspection indicated that currently there is no impact on any of the graves located near the pipeline.

Management recommendations regarding *all* the identified grave sites include fencing or demarcating them to include at least a 10 meter buffer zone in order to avoid any physical impact as a result of the construction activities. Continued monitoring by the ECO as stipulated in the original Heritage Report and the Environmental Management Programme as construction

commences, should be implemented. If impact due to construction is unavoidable, a process of social consultation should be followed with the families or relatives of the deceased to discuss further options. This is in accordance with section 36 of the National Heritage Resources Act (25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

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. Kudzala Antiquity CC will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The results of the project;
- The technology described in any report; and
- Recommendations delivered to the client.

Introduction

1.1. Terms of reference

Kudzala Antiquity CC was commissioned to conduct an on-site inspection in order to establish if current construction of the Spitskop – Mototolo water pipeline has any negative impact on graves located at site LWUA 1 which were identified during an archaeological and heritage resources survey in respect of the Environmental authorization process prior to construction.

1.1.1 Project overview

Lebalelo Water User Association (LWUA) is in the process of construction a water pipeline between the Spitskop Pump Station and Mototolo Mine, located near Steelpoort in the Limpopo Province. This project is also referred to as the Southern Extension 2 (SE2) pipeline (see more detail in section 2).

1.1.2. Constraints and limitations

The physical archaeological and heritage survey consisted of non-intrusive methods which exclusively rely on surface observations. Most of the inspection area was relatively easy of access but in certain areas dense vegetation growth resulted in archaeological surface visibility being low. Except for the trench which exposed sub-surface profiles no additional sub-surface observations could be inferred.

1.2. Legislative Framework

The National Heritage Resources Act (NHRA) (Act No. 25, 1999) and the National Environmental Management Act (NEMA) (Act 25 of 1998) require that individuals or institutions have specialist heritage impact assessment studies undertaken whenever development activities are planned and such activities trigger activities listed in the legislation.

Heritage resources considered to be part of the national estate include those that are of archaeological, cultural or historical significance or have other special value to the present community or future generations.

The national estate may include:

- places, buildings, structures and equipment of cultural significance;

- places to which oral traditions are attached or which are associated with living
- heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and paleontological sites;
- graves and burial grounds including:
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
 - (v) historical graves and cemeteries; and other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to slavery in South Africa;
- movable objects including:
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage
 - (iii) ethnographic art and objects;
 - (iv) military objects
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Cultural resources are unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities (Van Vollenhoven 1995:3). These would be any man-made structure, tool, object of art or waste that was left behind on or beneath the soil surface by historic or pre-historic communities. These remains, when studied in their original context by archaeologists, are interpreted in an attempt to understand, identify and reconstruct the activities and lifestyles of past communities. When these items are removed from their original context, any meaningful information they possess is lost, therefore it is important to locate and identify such remains before construction or development activities commence.

2. Description of the project area

The inspection took place at a section of the new raw water pipeline between the Spitskop Pump Station and Mototolo Mine where site LWUA 1 is located (more detail in section 3.1.3). This is near Steelpoort in the Limpopo Province. This project is also referred to as the Southern Extension 2 (SE2) pipeline.

Table 2.1. Project Description and extent (Derived from van der Walt, 2021).

Project area	<p><u>Pipeline:</u> Dwarsrivier 372 KT portions RE, Portion 1, 6 and 7 Thorncliffe 374 KT portions 1, 3 and 7 Helena 6 JT portion RE Spitskop 333 KT portion 20 Kennedy's Vale 361 KT portion 12 and 30 Tweefontein 360 KT portions 1, 2, 3, 4, 6, 7, 9 and 10 Steelpoort Ext 11 erven 1216, 1218 and 1221 Steelpoort Ext 10</p> <p><u>Reservoir:</u> Dwarsrivier 372 KT portion 7</p>
Magisterial District	Fetakgomo Tubatse Local Municipality Sekhukhune District Municipality
Central co-ordinate of the development	Start point 24°48'36.54"S & 30° 7'18.70"E End point 25° 0'32.67"S & 30° 6'45.19"E
Topographic Map Number	2430 CC

3. Methodology and results

3.1.1. Previous archaeological studies in the area

As part of the environmental authorization process for this project a Heritage Impact Assessment was conducted by Beyond Heritage Cultural Resources Consultants in August 2021. They documented three grave sites namely LWUA 1-3 and an ephemeral stone terraced site named LWUA 4. Their recommendations included:

- The recorded burial sites LWUA 1, LWUA 2, LWUA 3 are all located more than 30 meters from the proposed pipeline and will not be directly impacted on. It is recommended that these sites are indicated on development plans and avoided with a 30 m buffer zone. Care must be taken to ensure that access to these sites is not restricted for family members during the construction phase;
- The area around the possible ephemeral terrace walls (LWUA 4) must be monitored during construction;
- Implementation of a chance find procedure for the project.

3.1.2. Social consultation

On the day of the inspection, Mr Elvis Kgwete, Community Liason Officer, stated that the family of the graves located at LWUA 1 indicated that there is another grave located on the western side of the current pipeline. This was not indicated in the original heritage report. This grave does not have a headstone or grave dressing of any kind and no positional alignment is visible (see photos and description in section 4). It is characterised by a few stacked stones which Mr Kgwete indicated was put there by the family to mark it. It was mapped with a handheld GPS and marked as site SP 12. This grave is located 22 meters west of the new pipeline. It is currently not negatively affected by the pipeline construction.

3.1.3. Physical inspection

An inspection was carried out on 5 July by archaeologist, Mr JP Celliers, accompanied by Mr Etienne Clarke representing the Contractor, Mr Jeandré Barnard, Engineer, Mrs Abigail Banda, Social Specialist and Mr Elvis Kgwete the Community Liason Officer.

- The grave site LWUA 1 was recorded by using a handheld Garmin Etrex 22x GPS unit.
- The grave at site LP 12 was pointed out by Mr Elvis Kgwete and recorded with the GPS.

- A number of Survey Points (SP 2-11) was recorded in order to document the inspection process. The documented sites were numbered sequentially.
- A physical walk inside the pipeline trench starting south and progressing north for a distance of 224 meters (Survey Points SP 3 - SP 11) was done in order to inspect both the eastern and western profiles for human remains, bones, and soil color changes associated with grave deposit. The average depth of the trench was approximately 1,7 to 2 meters.
- A tape measure was used to measure the distance in meters from the graves to the trench of the water pipe. This was done in order to establish the range of possible impact and to verify recommendations of the original heritage report which recommended a buffer zone of 30 meters.
- Sites and survey information were plotted on 1:50 000 topographical maps which are geo-referenced (WGS 84) and also on Google Earth (see maps Appendix C).
- The survey tracks and survey points were also mapped in relation to the pipeline servitude, an old existing pipeline and the new pipeline (see maps Appendix C).

3.1.4. Results and recommendations

The inspection results indicate that the current construction activities do not negatively impact on the graves at LWUA 1 and SP 12 which is the location of the grave identified by the family on the western side of the new pipeline trench.

- The distance measured from the graves LWUA 1 to the pipeline exceeds 30 meters
- The distance from the newly identified grave is 22 meters
- There are no bones, human remains or grave-associated deposit visible in the profile of the trench of the water pipeline.
- There was no visible indication of human remains or bones on the surface in the immediate vicinity of the graves.

Management recommendations regarding all the identified grave sites include fencing or demarcating them to include at least a 10 meter buffer zone in order to avoid any physical impact as a result of the construction activities. Continued monitoring by the ECO as stipulated in the original Heritage Report and the Environmental Management Programme as construction commences should be implemented. If impact due to construction is unavoidable, a process of social consultation should be followed with the families or relatives of the deceased to discuss further options. This is in accordance with section 36 of the National Heritage Resources Act (25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

4. Site and Survey Point descriptions

Grave sites

4.1.1. Site LWUA 1

Location: See Appendix B and C

Description: The location of two graves and headstones as well as a third headstone some 5 meters north. There are no dates visible on the headstones, only inscriptions and partial inscriptions as indicated on the photos.

Impact of the development/ activity: Currently no impact.

Recommendation: Fencing or demarcating to avoid accidental impact. Adherence to the recommendations of the original heritage report and EMpr.



Photo east



Photos north & south

4.1.2. Site SP 12

Location: See Appendix B and C

Description: The informant Mr Elvis Kgwete pointed out the location of a grave west of the pipeline. There are no grave dressings or visible alignment thereof and it is marked with a few stacked stones. It is allegedly a single grave.

Impact of the development/ activity: Currently no impact.

Recommendation: Fencing or demarcating to avoid accidental impact. Adherence to the recommendations of the original heritage report and EMpr.



Grave measure 22m from trench (arrow in photo point to grave). Mr Kwete shows grave. Stone stack marker.

Survey Points

4.1.3. Site SP 2

Location: See Appendix B and C

Description: Survey point location next to the water pipeline trench with the tape measurement from gravesite LWUA 1 located east of here.

Impact of the development/ activity: N/A

Recommendation: N/A



Photo south



Photo east towards TWAU1

4.1.4. Site SP 3.

Location: See Appendix B and C

Description: Survey point location start of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo view north

4.1.5. Site SP 4.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photos north & south

4.1.6 Site SP 5.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photos north & south

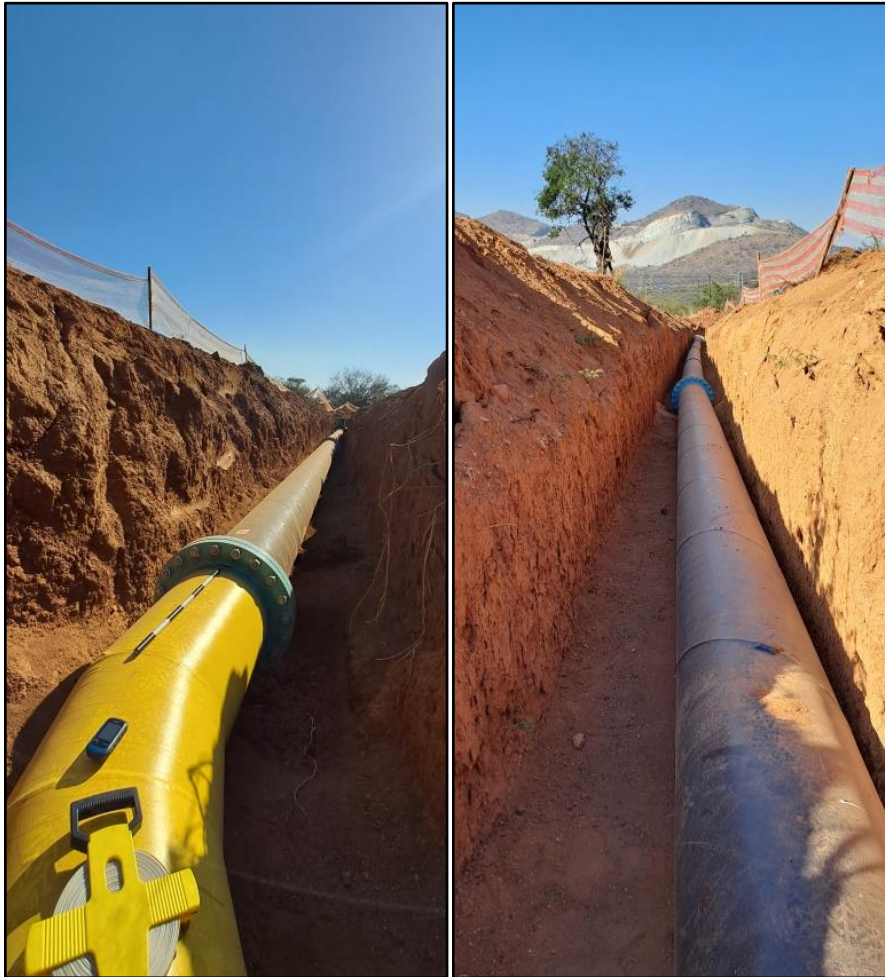
4.1.7. Site SP 6.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photos north & south

4.1.8. Site SP 7.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo north (scale 700mm)

4.1.9. Site SP 8.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photos north & south

4.1.10. Site SP 9.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photo north

4.1.11. Site SP 10.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photos N&S

4.1.12. Site SP 11.

Location: See Appendix B and C

Description: Survey point location of the trench survey from the south.

Impact of the proposed development/ activity: N/A

Recommendation: N/A



Photos N&S

5. References

1. Van der Walt, J. 2021. Heritage Impact Assessment for the proposed pipeline (se2) between Spitskop pump station and Mototolo mine, Steelpoort, Limpopo Province.
2. Van Vollenhoven, A.C. 1995. ***Die bydrae van Argeologie tot Kultuurhulpbronbestuur.*** Referaat gelewer voor die Suid-Afrikaanse Vereniging vir Kultuurgeskiedenis, Transvaal Streektak, Sunnyside.

ELECTRONIC SOURCES:

Google Earth. 2023. 24°50'22.98" S 30°07'19.30" E elev 894 m. [Online]. [Cited 6 July 2023].

MAPS

Topographical Map. 2002. *South Africa. 1:50 000 Sheet. 2430 CC Kennedy's Vale. Fourth Edition.* Pretoria: Government Printer.

Appendix A

Terminology

“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 other decoration or any other means.

“Archaeological” means –

- Material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artifacts, human and hominid remains and artificial features or structures;
- Rock Art, being any 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 which is older than 100 years, including any area within 10m of such representation;
- Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found;

“Conservation”, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance;

“Cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance;

“Development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –

- construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- carrying out any works on or over or under a place;

- subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil;

“Expropriate” means the process as determined by the terms of and according to procedures described in the Expropriation Act, 1975 (Act No. 63 of 1975);

“Foreign cultural property”, in relation to a reciprocating state, means any object that is specifically designated by that state as being of importance for archaeology, history, literature, art or science;

“Grave” means a place of internment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

“Heritage resource” means any place or object of cultural significance;

“Heritage register” means a list of heritage resources in a province;

“Heritage resources authority” means the South African Heritage Resources Agency, established in terms of section 11, or, insofar as this Act (25 of 1999) is applicable in or in respect of a province, a provincial heritage resources authority (PHRA);

“Heritage site” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority;

“Improvement” in relation to heritage resources, includes the repair, restoration and rehabilitation of a place protected in terms of this Act (25 of 1999);

“Land” includes land covered by water and the air space above the land;

“Living heritage” means the intangible aspects of inherited culture, and may include –

- cultural tradition;
- oral history;
- performance;
- ritual;
- popular memory;
- skills and techniques;
- indigenous knowledge systems; and
- the holistic approach to nature, society and social relationships;

“Management” in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of the Act;

“Object” means any moveable property of cultural significance which may be protected in terms of any provisions of the Act, including –

- any archaeological artifact;
- palaeontological and rare geological specimens;
- meteorites;
- other objects referred to in section 3 of the Act;

“Owner” includes the owner’s authorized agent and any person with a real interest in the property and –

- in the case of a place owned by the State or State-aided institutions, the Minister or any other person or body of persons responsible for the care, management or control of that place;
- in the case of tribal trust land, the recognized traditional authority;

“Place” includes –

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- 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;
- 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;

“Site” means any area of land, including land covered by water, and including any structures or objects thereon;

“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.

Appendix B

List of sites

The grave sites and survey position sites as well as their spatial locations are tabled below.

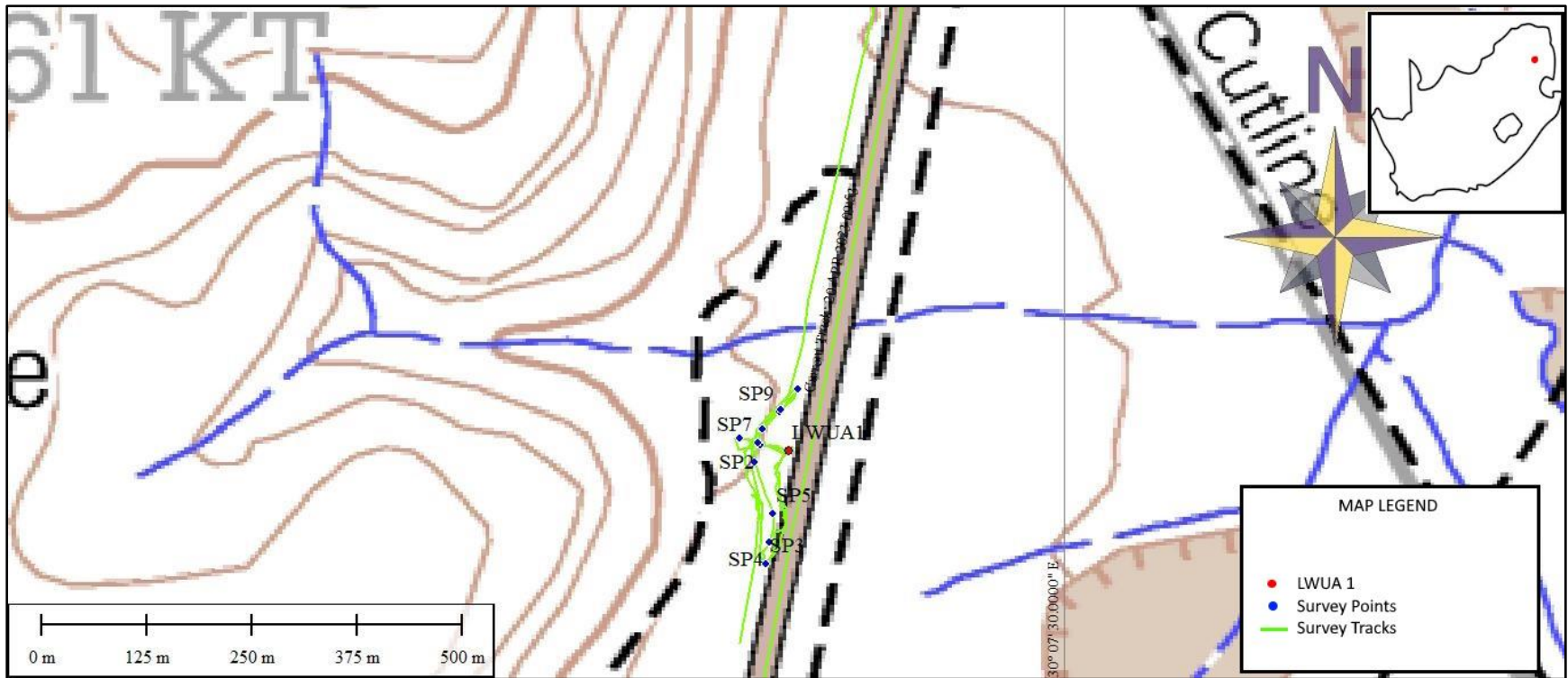
Table A. Grave sites

Site Name	Date of compilation	GPS Coordinates	
LWUA 1	05/07/2023	S24°50,3846'	E030°07,3234'
SP 12	05/07/2023	S24°50,3767'	E030°07,2916'

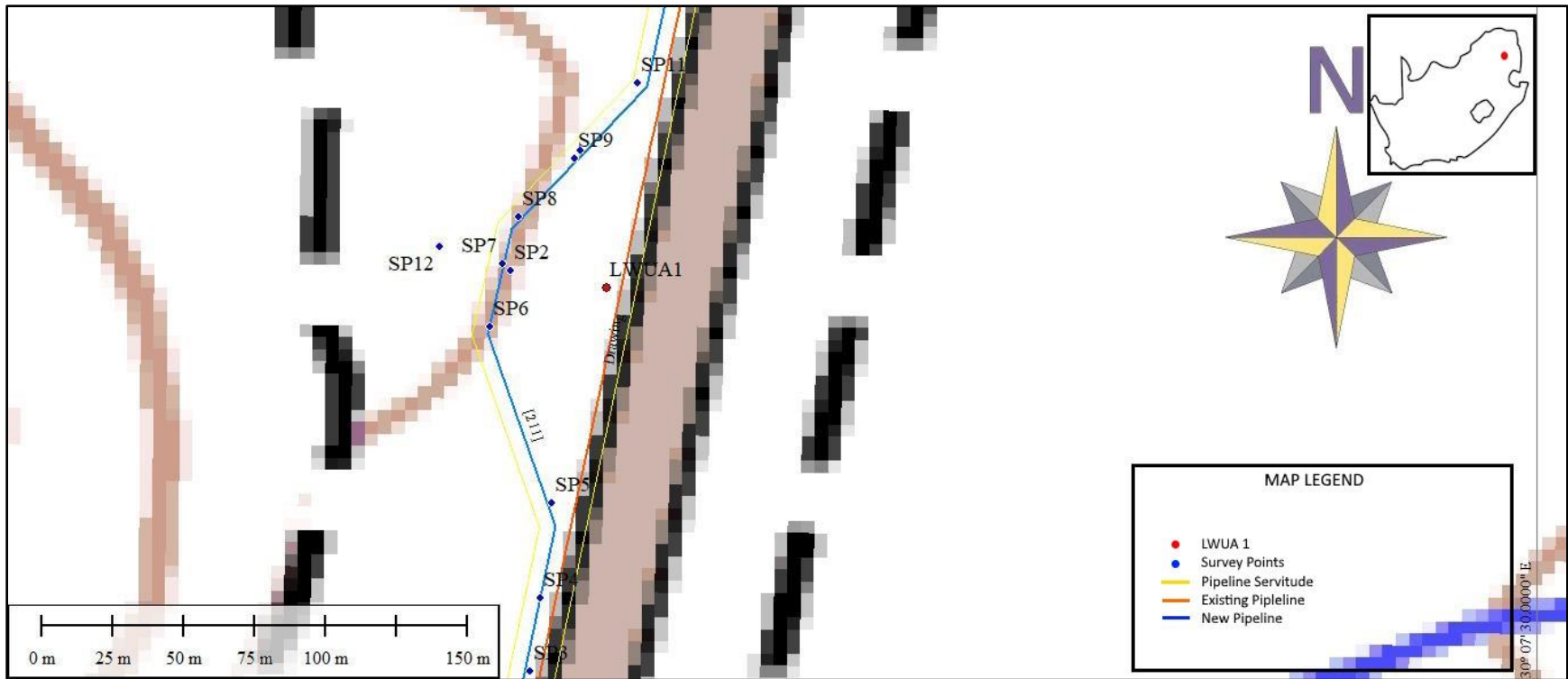
Table B. Survey Orientation Locations.

Site Name	Date of compilation	GPS Coordinates	
SP 2	05/07/2023	S24°50,3812'	E030°07,3052'
SP 3	05/07/2023	S24°50,4572'	E030°07,3089'
SP 4	05/07/2023	S24°50,4433'	E030°07,3108'
SP 5	05/07/2023	S24°50,4254'	E030°07,3130'
SP 6	05/07/2023	S24°50,3919'	E030°07,3011'
SP 7	05/07/2023	S24°50,3800'	E030°07,3037'
SP 8	05/07/2023	S24°50,3710'	E030°07,3066'
SP 9	05/07/2023	S24°50,3599'	E030°07,3172'
SP 10	05/07/2023	S24°50,3584'	E030°07,3184'
SP 11	05/07/2023	S24°50,3456'	E030°07,3291'

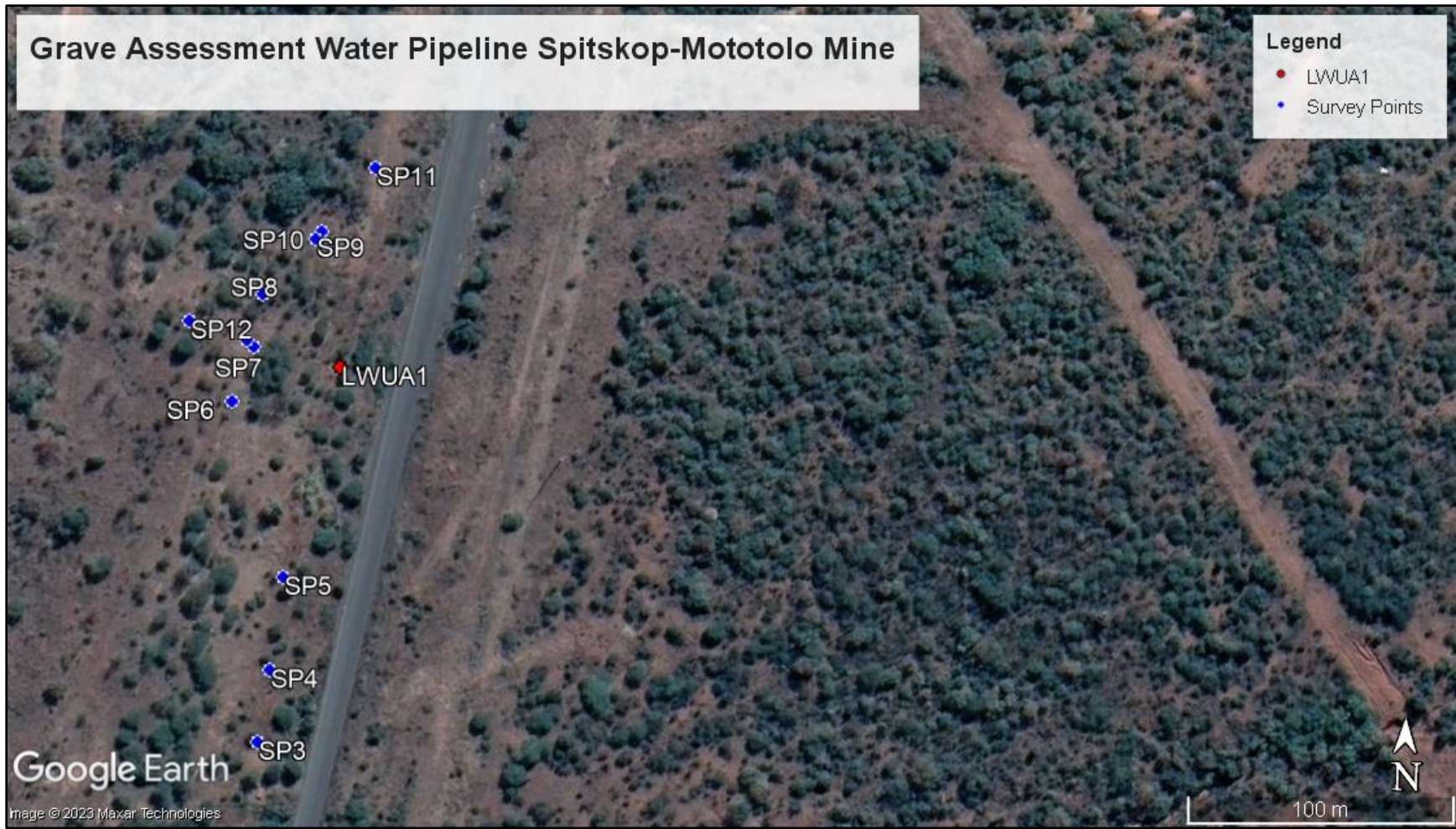
Appendix C



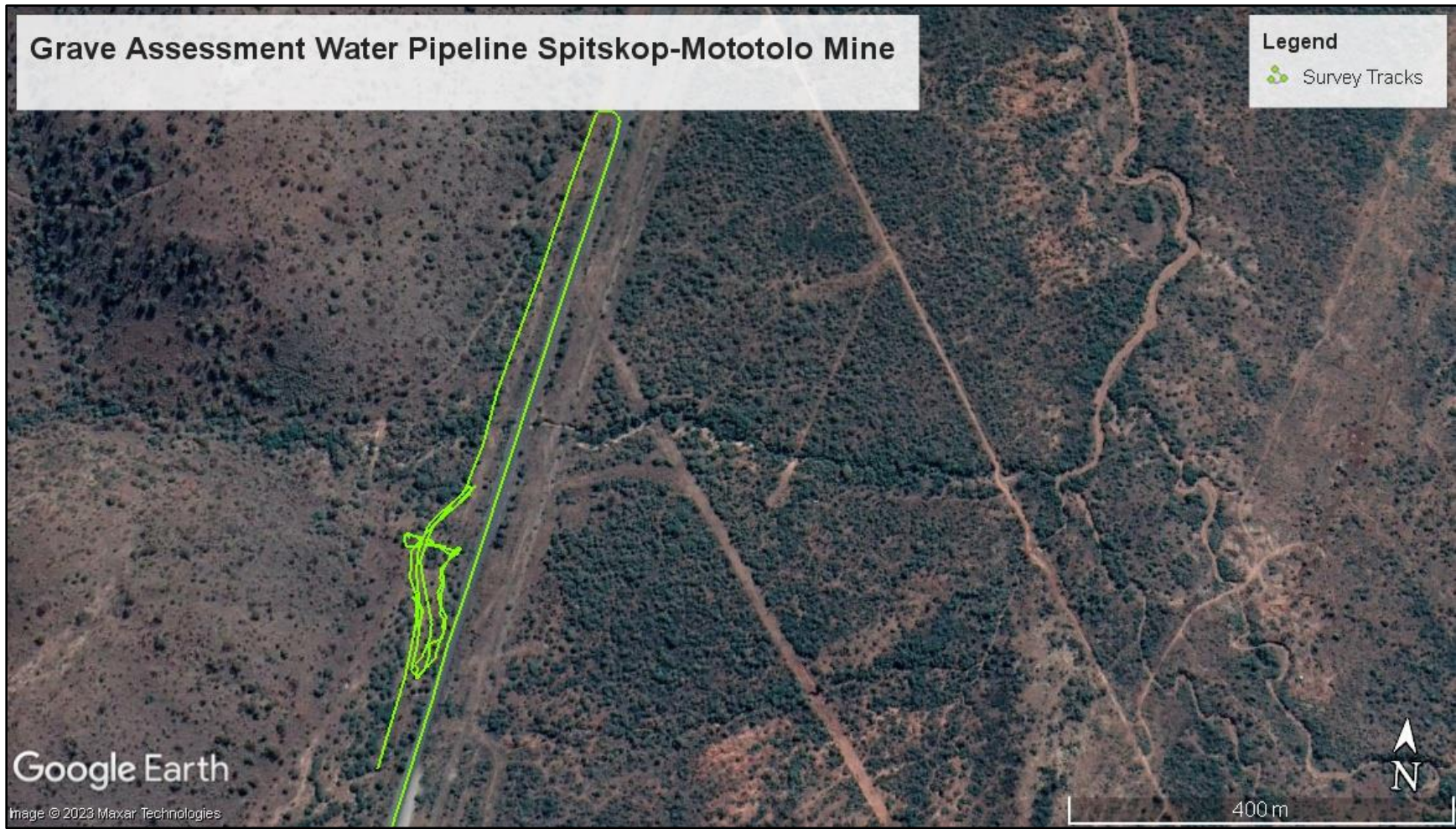
Regional Map 1:50 000 Topographical Map 2430 CC (2002).



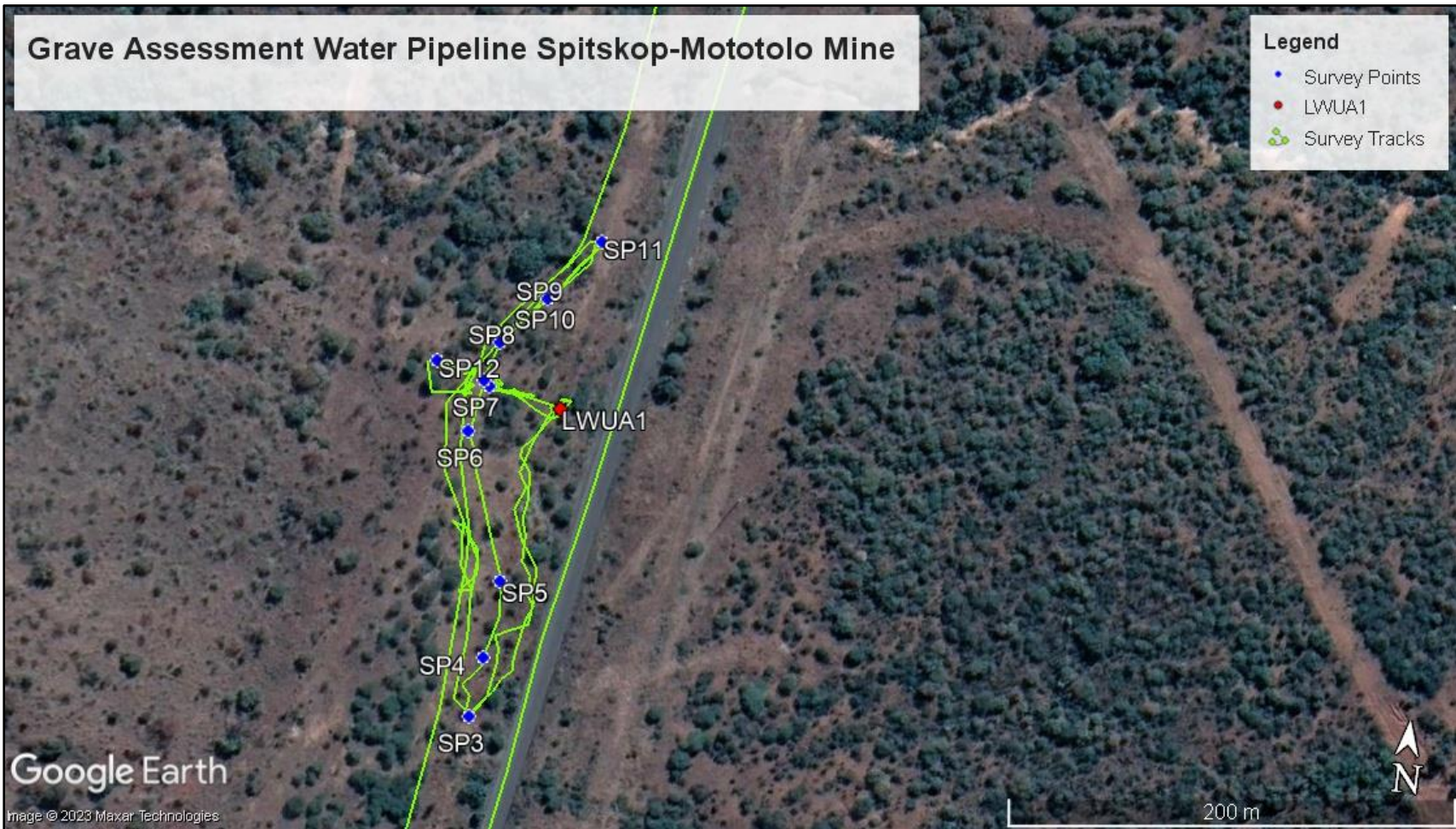
Topographical Map 1:50 000 2430 CC (2002)



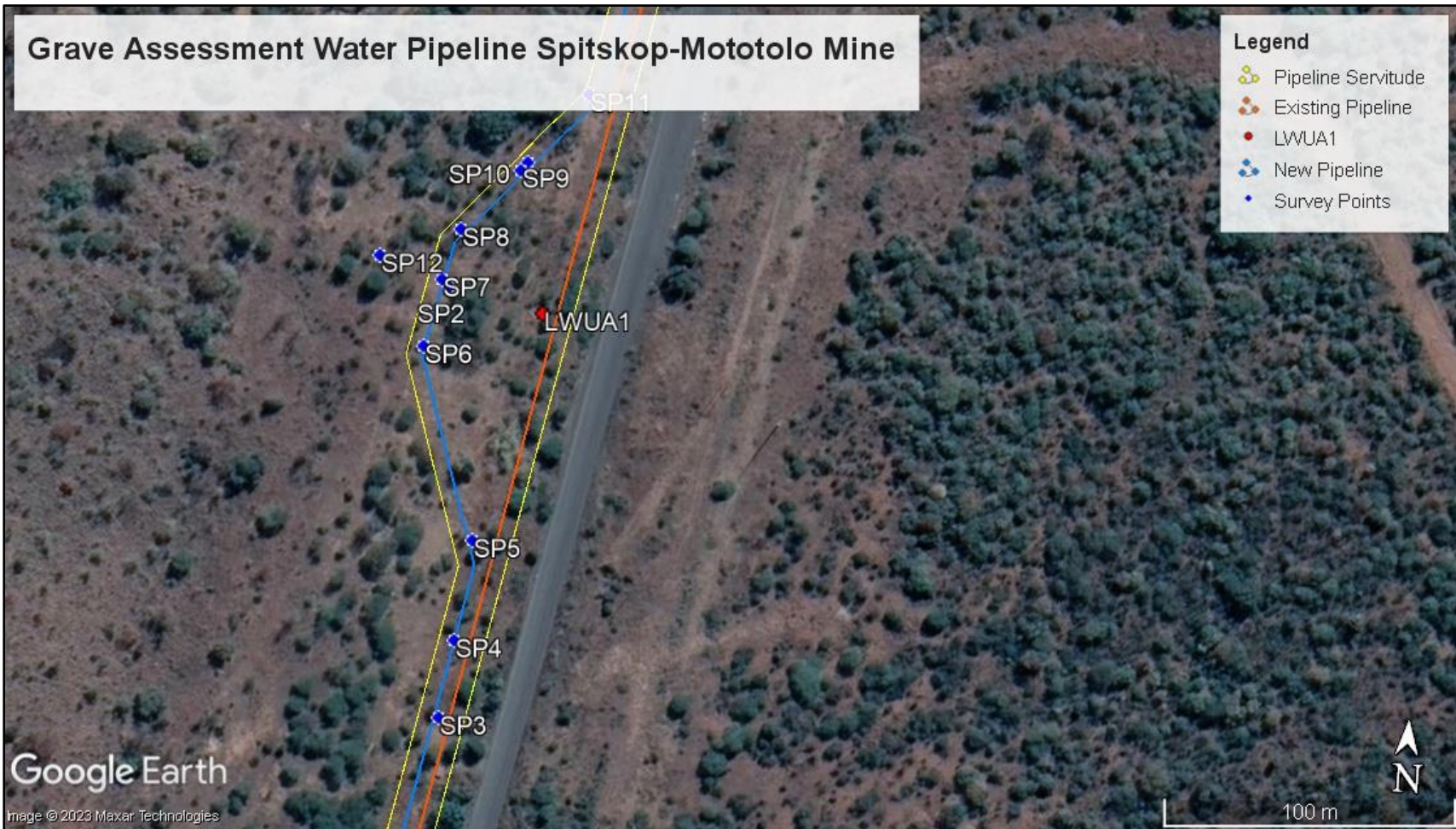
Aerial view: Google Earth 2023.



Aerial view: Google Earth 2023.



Aerial view: Google Earth 2023



Aerial view: Google Earth 2023