

19/06/09

Heritage Impact Assessment

Heritage Impact Assessment for the Proposed Lake View Township Development on the farm Lisbon 288 KR, south-west of Mokopane, Limpopo Province.

Compiled for:

Tekplan Environmental

Survey conducted & Report compiled by:

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February 2009

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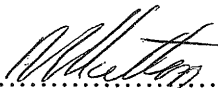
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Executive Summary

Site name and location: Proposed development of Lake View Township on the farm Lisbon 288 KR on the south-western fringes of Mokopane in the Limpopo Province.

Local Authority: Waterberg District Municipality.

Developer: Semogo Property Developments (Pty) Ltd.

Date of field work: 19 & 23 January 2009.

Date of report: 06 February 2009.

Findings: A potential archaeological site with Middle Stone Age artefacts was identified on the eastern side of the proposed development on the edge of the flood plain. The extent of the site and the frequency/density of the mostly subterranean artefacts could as yet not be determined accurately. It is therefore recommended that a second phase with mitigation measures is employed to determine the size and extent of the site, to identify and classify the artefacts and to place the site/artefacts in the Stone Age sequence of Southern Africa. More detailed recommendations are discussed in this report.

Two more sites/find spots with non-diagnostic potsherds were identified in areas which were exposed to extended periods of intensive agricultural activities. These agricultural activities disturbed and most probably destroyed all archaeological evidence/remains of any heritage value at these locations. No further site-specific actions or any further heritage mitigation measures are recommended for these sites/finds as they had little heritage value or significance.

The proposed development and establishment of the township in the indicated area can only continue from a heritage point of view if the recommendations in this report and other requirements from the SAHRA are adhered to.

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. Hutten Heritage Consultants and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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1. Introduction

Hutten Heritage Consultants was contracted by TEKPLAN ENVIRONMENTAL to conduct a Heritage Impact Assessment (HIA) for the proposed development of a township on the farm Lisbon 288 KR on the south-western fringes of Mokopane, Limpopo Province.

The aim of the study was to identify all heritage sites, to document and to assess their significance within Local, Provincial and National context. The report outlines the approach and methodology implemented before and during the survey, which includes in Phase 1: Information collection from various sources and social consultations; Phase 2: Physical surveying of the area on foot and by vehicle; and Phase 3: Reporting the outcome of the study.

This HIA forms part of the Environmental Impact Assessment (EIA) as required by the Environmental Conservation Act (ECA) 73 of 1989, the Minerals & Petroleum Resources Development Act, 28 of 2002 and the Development Facilitation Act (DFA), 67 of 1995. The HIA is performed in accordance with section 38 of the National Heritage Resources Act (NHRA), 25 of 1999 and is intended for submission to the provincial South African Heritage Resources Agency (SAHRA) for peer review.

Minimum standards for reports, site documentation and descriptions are set by the Association of Southern African Professional Archaeologists (ASAPA) in collaboration with SAHRA. ASAPA is a legal body representing professional archaeology in the Southern African Development Community (SADC) region. As a member of ASAPA, these standards are trying to be adhered to.

The extent of the proposed development sites were determined as well as the extent of the areas to be affected by secondary activities (access routes, construction camps, etc.) during the development.

2. Proposed Project

Semogo Property Developments (Pty) Ltd has proposed the development of the Lake View Township on Portions 14, 15, 16 and 18 of the farm Lisbon 288 KR. The farm Lisbon 288 KR was situated on the south-western fringes of Mokopane in the Limpopo Province. This development will include the layout of several residential erven, public open spaces and roads. The size of the development area is approximately 150ha with approximately 630 residential erven. The purpose of the study was to determine if the proposed area was suitable for the development of the residential town from a heritage point of view.

After researching the National Archive records as well as the SAHRA records it was determined that no other previous archaeological or historical studies have been performed in the demarcated study area.

The project was tabled during November 2008 and the developer intends to commence as soon as possible after receipt of the ROD from the Department of Environmental Affairs.

3. Project Area Description

The proposed development of the township will be situated adjacent and on the south-western fringes of Mokopane town in the Limpopo Province. The proposed development will be approximately 150ha in size and will be situated on Portions 14, 15, 16 and 18 of the farm Lisbon 288 KR - topographical map 2428 BB (See Appendix B: Location Map). The proposed area was situated adjacent and on the western bank of the Mogalakwena River just after the Nyl River joined the Mogalakwena River. The eastern section of the property comprised a floodplain which was flat with mostly grasses and small bushes as vegetation (photo 1). This flood plain is at the extreme northern end of the Nyl River and Nylsvlei flood plain system. The central section of the property sloped up to the foothills of the Waterberg and this section was previously exposed to intensive agricultural activities which have since stopped and pioneer plant growth with predominantly Sweet thorn (*Acacia karroo*), Sickie bush (*Dichrostachys cinerea*) and a variety of grasses made up most of the dense vegetation (photo 2). The Waterberg foothills occupied the western section of the property and the steep slopes and granite outcrops with its natural vegetation overlooked the property to the east (photo 3). Several small, seasonal streams crossed the property to be fed into the floodplain and the Mogalakwena River (photo 4). A disused dam was identified in one of these streams on the south-eastern part of the property (photo 5) and was probably used during the heydays of the agricultural activities.

4. Archaeological History of the Area

As heritage surveys deal with the locating of heritage resources in a prescribed cartographic landscape, the study of archival and historical data and cartographic information, can represent a very valuable supporting tool in finding and identifying such heritage resources. Published books and articles were also consulted.

The historical background and timeframe of the study area and other areas in Southern Africa can be divided into the Stone Age, Iron Age and Historical period. These can be divided as follows:

Stone Age

The Stone Age is divided into the Early; Middle and Late Stone Age and refers to the earliest people of Southern Africa who mainly relied on stone for their tools.

Early Stone Age: The period from ± 2.5 million years to $\pm 250\ 000$ years ago.

Middle Stone Age: Various lithic industries in SA dating from $\pm 250\ 000$ yrs – 25 000 yrs before present. This period is first associated with archaic *Homo sapiens* and later *Homo sapiens sapiens*.

Late Stone Age: The period from $\pm 25\ 000$ -yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with *Homo sapiens sapiens*.

Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic Periods. Similar to the Stone Age it can be divided into three periods:

The Early Iron Age: Most of the first millennium AD.

The Middle Iron Age: 10th to 13th centuries AD

The Late Iron Age: 14th century to colonial period.

Historic Period

The Historic Period intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available.

17th Century to present AD (1600 – 2000)

The History of the Mokopane Area

The history of the Mokopane area spans over an extended time period with several famous discoveries and infamous incidents. The following will serve as a short historical background to the relevant project and will help to explain where some of the finds might have originated.

Stone Age

Makapans Caves:

The Makapans Caves are situated approximately 20km to the north-east of Mokopane and comprise a series of caves with evidence of hominid occupation (*Australopithecus africanus*) from approximately 3.3 million years ago.

▪ The Makapansgat Lime works.

The oldest of the sites, spanning a time range of 3.32 million years ago to about 1.6 million years ago. The Lime works has yielded hundreds of thousands of fossil bones amongst which are the scant remains of the hominid *Australopithecus africanus* (Dart R, 1925).

▪ The Cave of Hearths.

In Africa, the ESA (Early Stone Age) spans the period of ± 2.5 million years to around 250,000 years ago, and the earliest bed at the Cave of Hearths preserved stone tools and associated debris from a date of around 400,000 years ago. The overlying beds preserved an intermittent but very long record of human occupation during the Middle Stone Age from $\pm 110,000$ - 50,000 years ago, and again in the Late Stone Age from 10,000 – 5,000 years ago, and from Iron Age times almost up to the present (McKee, J.K., 2000).

Iron Age

During the 1600's a group of iron working Nguni farmers moved from the Hlubi tribe in Kwa-Zulu Natal (Tugela River region) and settled in the former Transvaal as the Transvaal Ndebele. The Transvaal Ndebele was divided into two major groups of which the Northern Ndebele settled in the Mokopane/Polokwane region. It is not exactly known who they met and/or displaced in this region although several accounts of contact (friendly and unfriendly) with the Northern-Sotho and Ba-Pedi are reported in the ethnology of the relevant tribes. The Northern Ndebele can be divided into three groups i.e. the Langa (Laka), the Lidwaba (Letwaba) and the Muledlane (Moletlane).

The tribes of the Langa and the Lidwaba settled mostly north of Mokopane and around Polokwane. One of the ancestors of the Muledlane Ndebele, Musi, had 5 sons i.e. Manala, Masombuka (Mhwaduba), Ndzundza, Mathombeni (Kekana) and Sdhlomu (Dhlomu). After disputes and wars between two of the sons, Ndzundza and Mathombeni, the Kekana chieftaincy came into existence. Their descendants settled in the Zebediela, Makapans valley and Mokopane regions. From these areas they waged several military campaigns against their Ba-Pedi and Northern-Sotho neighbours to establish themselves as the dominant group in the region. Mokopane took over the chieftaincy in the 1830's.

Historic Period

■ Moorddrift:

The farm Moorddrift 289 KR is situated adjacent and to the south of the farm Lisbon 288 KR. It was the scene of one of three attacks on Boer parties in this region during September/October of 1854. 12 Boer Pioneers were murdered here and a monument was erected in 1937 to commemorate this unfortunate incident. More attacks took place at Mapela and at Pruizen.

The attack at Moorddrift was executed by subjects of Chief Mokopane under Headman Lekalekale who resided at Lekalekaleskop west of Mokopane. This spite of attacks forced the Z.A.R-government and its military forces to retaliate.

■ Makapansgat:

This cave is most famous as the scene of a clash between the Boer Commando of Piet Potgieter and the local Langa and Kekana Ndebele of the region. The Boer Commando was on a punitive expedition after the attacks on Boer Pioneers and Chief Makapan (Mokopane) then fled to these caves to escape from them. Chief Makapan (Mokopane), his tribes people and their livestock were besieged in the cave for nearly a month between 25th October and 21th November 1854. During this time, many hundreds died of hunger and thirst or were shot by Boers. Piet Potgieter was also killed by one of Mokopane's men during the siege. The cave was declared a National Monument in 1936 (Evers, T.M. 1983).

5. Methodology

Physical Survey

The extent of the proposed development sites were determined as well as the extent of the areas to be affected by secondary activities (access route, construction camp, etc.) during the development.

The physical survey was conducted on foot over the entire area proposed for development. Priority was placed on the undisturbed areas. A systematic inspection of the area on foot along linear transects resulted in the maximum coverage of the proposed area. The survey was conducted over two days on the 19th and 23rd January, 2009 and was performed by M. Hutten and field worker T. Mulaudzi.

Sampling/collection was done for documentation purposes. The collections of local residents were also examined and partially documented.

Restrictions

Vegetation proved the major restriction in accessibility to some of the areas and also contributed to poor surface visibility after the spate of recent good rains..

Documentation

All sites/findspots located during the foot surveys were briefly documented. The documentation included digital photographs and descriptions as to the nature and condition of the site and recovered materials. The sites/findspots were plotted using a Global Positioning System (GPS) (Garmin E-Trek Legend) and numbered accordingly.

6. Assessment Criteria

This chapter describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites were based on the following criteria:

- The unique nature of a site
- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc.)
- The wider historic, archaeological and geographic context of the site
- The preservation condition and integrity of the site
- The potential to answer present research questions.

Site Significance

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report.

<i>FIELD RATING</i>	<i>GRADE</i>	<i>SIGNIFICANCE</i>	<i>RECOMMENDED MITIGATION</i>
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction

Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a particular fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% sure of a particular fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a particular fact, or of the likelihood of an impact occurring.

Duration

<i>SHORT TERM:</i>	0 – 5 years
<i>MEDIUM:</i>	6 – 20 years
<i>LONG TERM:</i>	more than 20 years
<i>DEMOLISHED:</i>	site will be demolished or is already demolished

Mitigation

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- A – No further action necessary
- B – Mapping of the site and controlled sampling required
- C – Preserve site, or extensive data collection and mapping required; and
- D – Preserve site

7. Assessment of Sites and Finds

This section will contain the results of the heritage site/find assessment.

Lake View Township Development

LKV 001

GPS 24,19421° S
28,96147° E

A low density scatter of Middle Stone Age flakes, blades and cores (photo 6 & 7) were identified along an eroded road and other eroded tracks and areas (photo 8 & 9). They were produced from mixed raw material and a handful of these artefacts were identified over a rather extended area ($\pm 400\text{m} \times 100\text{m}$) during the assessment. However, more artefacts were collected by residents over an extended period from the same area. This area was right on the edge of the mentioned floodplain on the eastern section of the property. The area to the west of the road and where the artefacts were found was exposed to intensive agricultural activities which included ploughing, preparing of plough ridges and preparing of terraces. This area was largely and extensively disturbed and only a few finds were made here.

It is most possible that most of the identified flakes and blades belong to the Howiesons Poort or post-Howiesons Poort Phases of the Middle Stone Age. More examples and a more specialised identification technique will be required to see if these artefacts don't fit in with the older MSA1 or MSA 2a and 2b phases as was the case at the Cave of Hearths in the Makapans valley (these phases replaced the old Pietersburg Culture with its different industries). Generally the Howiesons Poort Phase is seen as the middle phase of the Middle Stone Age dated at approximately 70 000 years ago. The identified artefacts

could be approximately this age or even older (Deacon & Deacon 1999). Late Stone Age artefacts could also possibly be identified amongst these artefacts.

<i>Field Rating:</i>	Generally Protected B (GP.B)
<i>Heritage Significance:</i>	Medium Significance
<i>Impact:</i>	Negative
<i>Certainty:</i>	Probable
<i>Duration:</i>	Demolished
<i>Mitigation:</i>	B

LKV 002

GPS 24,19818° S
28,95668° E

A low density scatter of non-diagnostic potsherds of different sizes and thickness (photo 10) was identified in a section of an eroded road (photo 11). A total of 11 potsherds were identified from an area of approximately 30m x 10m in size. No other finds, structures or features could be identified.

The areas on either side of the road, where the potsherds were identified, were previously exposed to intensive agricultural activities. The topographical map (1:50 000 2428 BB Potgietersrus), drawn in the 1970's, indicates that most of the proposed area was cultivated. The intensive agricultural activities have stopped since then, but evidence such as the neglected orchards, pioneer plant growth (which occur on neglected fields), prepared plough ridges and prepared terraces were still visible (photo 12). These previous agricultural activities disturbed and most probably destroyed any further archaeological evidence which could have occurred with the identified potsherds.

As no diagnostic potsherds were identified it was very difficult to determine to whom these artefacts belonged, i.e. who occupied this area. Studies showed that the Northern Transvaal Ndebele occupied this region from the mid 1600's. In some areas the Ndebele encountered Sotho-Tswana people and in other areas Venda people. Excavated Ndebele archaeological sites showed that these Sotho-Tswana and Venda peoples influenced the Northern Ndebele as were evident from the ceramics (potsherds) of the Moloko Tradition (associated with the Sotho-Tswana) and the Letaba Tradition (associated with the Venda) found on these sites (Loubser 1994). The identified potsherds from this site most probably belonged to some group of these Late Iron Age communities, but they could not be assigned to any one of these two Traditions and could therefore not be identified accurately.

<i>Field Rating:</i>	Generally Protected C (GP.C)
<i>Heritage Significance:</i>	Low Significance
<i>Impact:</i>	Negative
<i>Certainty:</i>	Probable
<i>Duration:</i>	Demolished
<i>Mitigation:</i>	A

LKV 003

GPS 24,20117° S
28,95968° E

Two non-diagnostic potsherds of different sizes and thickness (photo 13) were identified in a section of an eroded road. They were found in an area of approximately 2m x 2m. No other finds, structures or features could be identified.

As was the case with site LKV 002, the areas on either side of the road where the potsherds were found, were previously exposed to intensive agricultural activities. These previous agricultural activities disturbed and most probably destroyed any further archaeological evidence which could have occurred with the identified potsherds. The identification and classification of these potsherds were also similar to those from site LKV 002.

The two identified potsherds from this site/find spot most probably belonged to some group of the Late Iron Age communities, but could not be assigned to any one of the two discussed Traditions and could therefore not be identified accurately. The location where the potsherds were found can not be classified as a possible, but destroyed archaeological site, but only as a find spot due to the little number of artefacts recovered. These potsherds and the find spot were most probably associated with site LKV 002.

<i>Field Rating:</i>	Generally Protected C (GP.C)
<i>Heritage Significance:</i>	Low Significance
<i>Impact:</i>	Negative
<i>Certainty:</i>	Probable
<i>Duration:</i>	Demolished
<i>Mitigation:</i>	A

8. Recommendations

The following steps and measures are recommended regarding the identified sites and find spot:

Site LKV 001

The location of the identified artefacts falls within the eastern extremes of the area intended for development. Even if the identified area falls just outside of the footprint of the development, the inevitable increase of human traffic, construction and other activities will lead to more erosion and possible destruction of the potential site. The opportunity for the new residents in future to start unofficial plots of gardens/fields next to and on the fertile flood plain will be irresistible. Even a short term ban on any agricultural activities in this area will be lost in the long run. These possible agricultural

activities will destroy the potential site as was the case with the previous agricultural activities further to the west.

The proposed development will impact negatively and most probably destroy a potential site which has not been fully identified or understood. In light of the region's rich Stone Age history in the Makapans valley it should be imperative to see if the identified artefacts could be identified accurately and compared to existing assemblages from the Makapans valley and other associated known sites. As no specific site could be pinpointed as yet and artefacts were mostly recovered from eroded areas, the following mitigation steps and measures are recommended:

- The relevant area should be marked and the developer should be made aware of its location as to incorporate it and the recommendations in their planning.
- It is recommended that a comprehensive surface collection is performed in order to establish the frequency/density of artefacts in the identified area.
- A permit is required from the SAHRA to perform such a surface collection. The appointed Heritage Officer should apply for the permit in line with the requirements from the SAHRA.
- The surface collection will also establish the boundaries/size of the identified area for more effective and detailed mapping.
- The surface collection will produce a larger artefact assemblage which could assist in the more accurate identification and classification of the site and its relevance in the Stone Age sequence of the region and Southern Africa.
- The surface collection could be performed before and/or during the bush clearing phase of the project. Bush clearing could possibly churn up the soil and expose subterranean artefacts which were only exposed by erosion thus far. It is important to note that the surface collection should be performed before construction commence.
- It is therefore also recommended that the collected artefacts be identified and classified by a qualified and recognised Stone Age specialist. This will create the opportunity to compare this assemblage from a flood plain system (The Nyl River and Nylsvlei) to assemblages from the Makapans valley and other sites.
- Collected artefacts and all relevant documentation should be housed at an institution as prescribed by the SAHRA.
- The developer can apply for a permit of destruction after the SAHRA deem the recommended mitigation as sufficient.
- Only if the above mentioned recommendations are adhered to can the Lake View Township development continue in this area from a heritage point of view.

Sites LKV 002 & LKV 003

The identified potsherds were identified within the area intended to be developed. The areas where these finds were made were exposed to previous intensive agricultural activities and were disturbed to a large extent and most probably destroyed any further archaeological evidence. Similar and even larger, richer and unspoiled Late Iron Age sites have been identified and studied. The following steps and measures are recommended:

- The identified sites and finds were of low heritage value and significance.
- No further site-specific actions or any further heritage mitigation measures are recommended for these sites/finds as they had little heritage value or significance.
- The proposed Lake View Township development can continue in these areas from a heritage point of view.

9. References

1. Dart, R. 1925. '*Australopithecus africanus*': the man-ape of South Africa. *Nature* 115: 195-199.
2. Deacon, J. 1996. *Archaeology for Planners, Developers and Local Authorities*. National Monuments Council. Publication no. PO21E.
3. Deacon, J. 1997. Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology. In: Newsletter No. 49, Sept. 1998. South African Association of Archaeology.
4. Deacon, H.J. & Deacon, J. 1999. *Human Beginnings in South Africa. Uncovering the Secrets of the Stone Age*. Cape Town: David Philip.
5. Evers, T.M. 1983. Oori or Moloko? The origins of the Sotho/Tswana on the evidence of the Iron Age of the Transvaal. *S. Afr. J. Sci.* 79(7): 261-264.
6. Hall, M. 1987. *The changing past: Farmers, kings and traders in Southern Africa, 200-1860*. Cape Town: David Phillip.
7. Hall, S.L. 1981. Iron Age sequence and settlement in the Rooiberg, Thabazimbi area. Unpublished MA thesis, University of the Witwatersrand.
8. Huffman, T.N. 1989. "Zimbabwe ruins and Venda prehistory." *The Digging Stick*, 6(3), 11.
9. Jackson, A.O. *The Ndebele of Langa*. Ethnological Publications No. 54. Government Printer: Pretoria. (not dated)
10. Lightfoot, K.G. 1989. A Defense of Shovel Test Sampling: A Reply to Short. *American Antiquity* 54(2):413-416.
11. Maggs, T.M. O'C. 1976(a). *Iron Age communities of the southern Highveld*. Pietermaritzburg: Natal Museum.
12. McKee, J.K. 1993. Faunal dating of the Taung hominid fossil deposit. *Journal of Human Evolution* 25: 363-376.
13. McManamon, F.P. 1984. *Discovering Sites Unseen*. In *Advances in Archaeological Method and Theory* 8:223-292, edited by M.B. Schiffer, Academic Press, New York.
14. Loubser, J.H.N. 1994. *Ndebele Archaeology of the Pietersburg Area*. *Navors. Nas. Mus.*, Bloemfontein. Volume 10, Part 2: 62-147.
15. Pistorius, J.C.C. 1992. *Molokwane, an Iron Age Bakwena Village*. Johannesburg: Perskor Printers.
16. Schiffer, M. B., Sullivan A.P., and Klinger T.C. 1978. *The Design of Archaeological Surveys*. *World Archaeology* 10:1-28.
17. Smith, L.D. 1977. *Archeological Sampling Procedures For Large Land Areas: A Statistically Based Approach*. USDA Forest Service, Albuquerque.
18. Stayt, H. 1931. *The Bavenda*. London: Oxford University Press.
19. Tempelhoff, W.N. *Paths through the past. A discursive narrative of the history of the Mokopane region in the Northern Transvaal from the earliest time to 1995*.

APPENDIX A

Photographs



Photo 1: Flood plain.



Photo 2: Dense pioneer vegetation.



Photo 3: View from the granite foothills.



Photo 4: A seasonal stream.



Photo 5: Disused dam.



Photo 6: LKV 001. Example of artefacts identified.



Photo 7: LKV 001. Example of artefacts identified

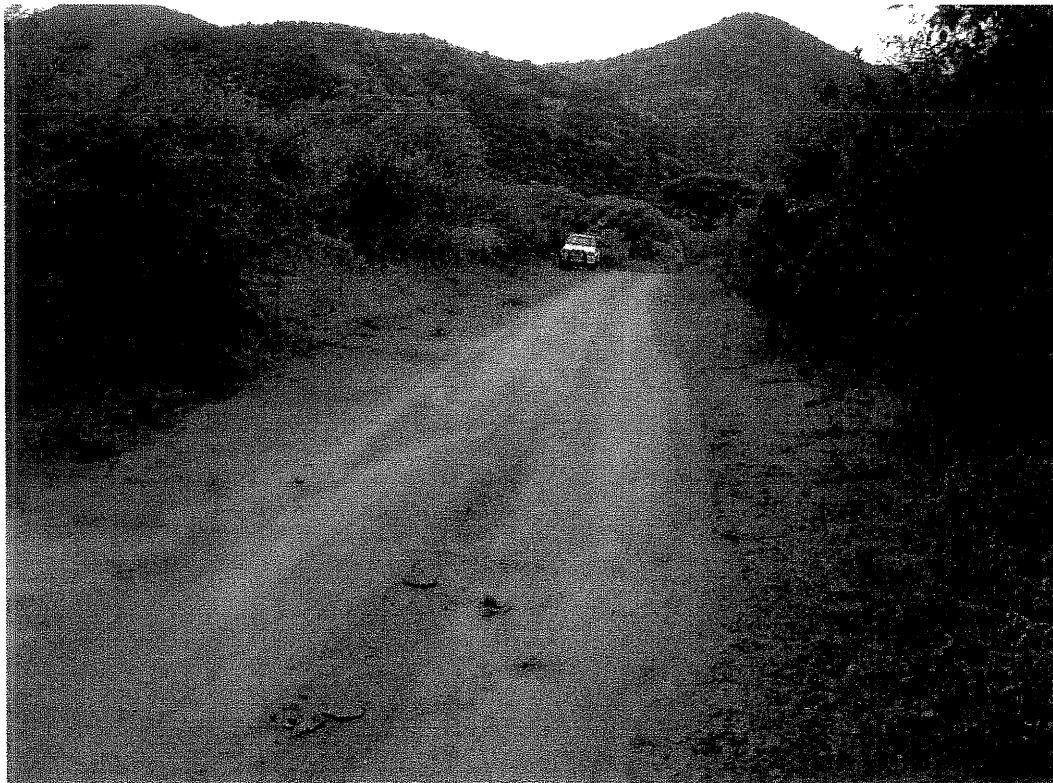


Photo 8: LKV 001. Location of the site.



Photo 9: LKV 001. Eroded pathway.

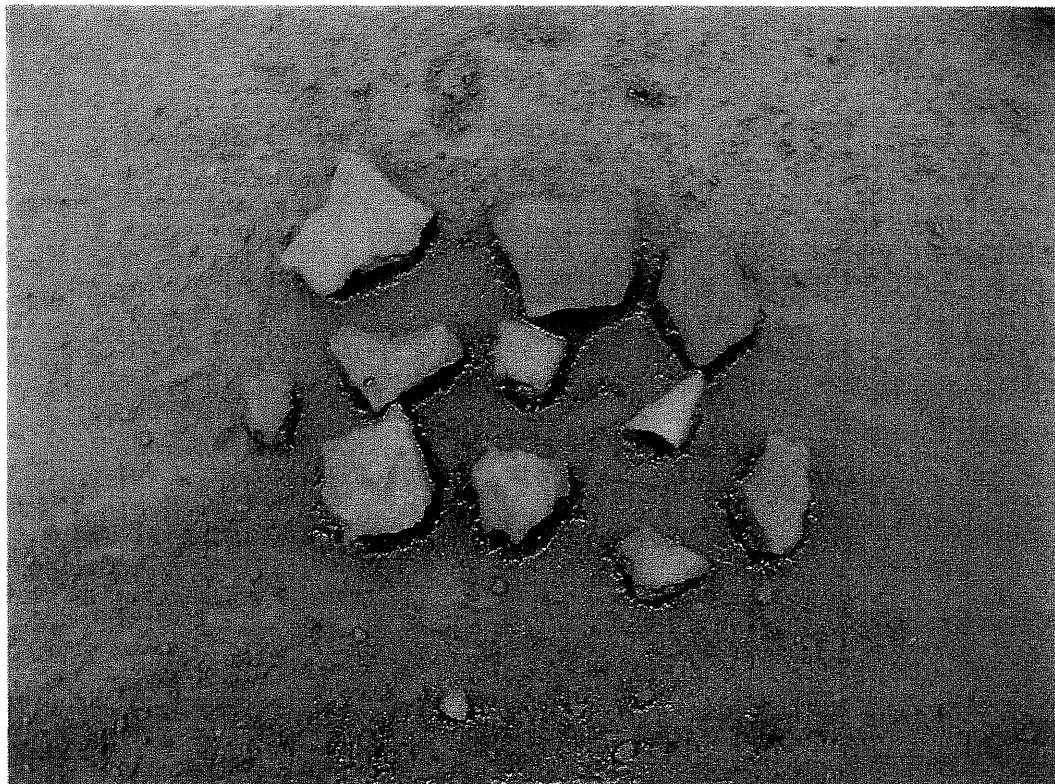


Photo 10: LKV 002. Potsherds identified.



Photo 11: LKV 002. Location of the site.



Photo 12: Previous cultivated fields



Photo 13: LKV 003. Potsherds identified.

APPENDIX B

Location Map

Location of Lake View Estate

