

# **LEEUWKOP ARCHAEOLOGICAL ASSESSMENT**

A combined Phase I Report Prepared for Knight Piésold Consulting

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# **LEUWKOP ARCHAEOLOGICAL ASSESSMENT**

## **EXECUTIVE SUMMARY**

Some stonewalled sites were damaged during the seismic survey. **Site 2, Site 10, and Site 11** need protection during mining operations. Damages to **Sites 11, 20 and 27** must be recorded.

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## **INTRODUCTION**

Southern African Resources intends to develop a new platinum mine near Brits in the North West Province. The project includes a Plant & Shaft area, Tailings Dam, Conveyor Belt and associated infrastructure, as well as a road system for a seismic survey.

In keeping with the National Heritage Resources Act (Act No. 25 of 1999), the environmental coordinators for the project, Knight Piésold, commissioned Archaeological Resources Management (ARM) to examine the area for the remains of previous human activity 100 years or older. At first, only the Plant & Shaft Area, Tailings Dam and immediate surroundings were under consideration. ARM identified a number of archaeological and historical sites in these two areas (Huffman 2005). It later became

necessary to examine other areas for the seismic survey awarded to CCG. This report combines all investigations.

## **METHOD**

One ARM staff visited the project area on 04 March 2005 in the company of Mr W. Lee from Knight Piésold. The team traversed on foot the two proposed impact areas as well as a few other areas with koppies. Later, on 27 April 2005, ARM staff visited the project area again. This time Mr M Gibson outlined the method and grid system established for the seismic survey. Red pegs, 25m apart, marked the east/west line, while green pegs, 25m apart, marked the north/south line. Numbering from 6138 to 6432, the north/south line comprised a cut line, but the east/west line, numbering from 1097 to 1377, involved bulldozed roads. Some roads make a detour around the base of steep granite koppies. Mr F Henning took the team to various sites noticed while the grid system was put into place. He accompanied the archaeologist throughout most of the day.

The team concentrated on the base of hills because the first Phase I report showed that these areas were archaeologically sensitive. We recorded sites with a hand-held GPS instrument and by the coordinates of the CCG grid system. Sites locations were than transferred to the 1 : 50 000 map 2527 DA Wolhuterskop 1976 Edition (Figure 1).

Later again, on 13 September and 1 October 2005, ARM staff returned to examine the roads made for the seismic survey west of the R556. Staff concentrated on the hilly area north of the proposed plant.

In all cases, five criteria determined site significance: integrity of deposit (primary versus secondary context), depth of deposit, number and variety of features, uniqueness and potential to answer present research questions. Following these criteria, sites with no significance do not require further consideration, low significance may require mitigation, sites with medium significance will require mitigation while sites with high significance should not be disturbed at all.

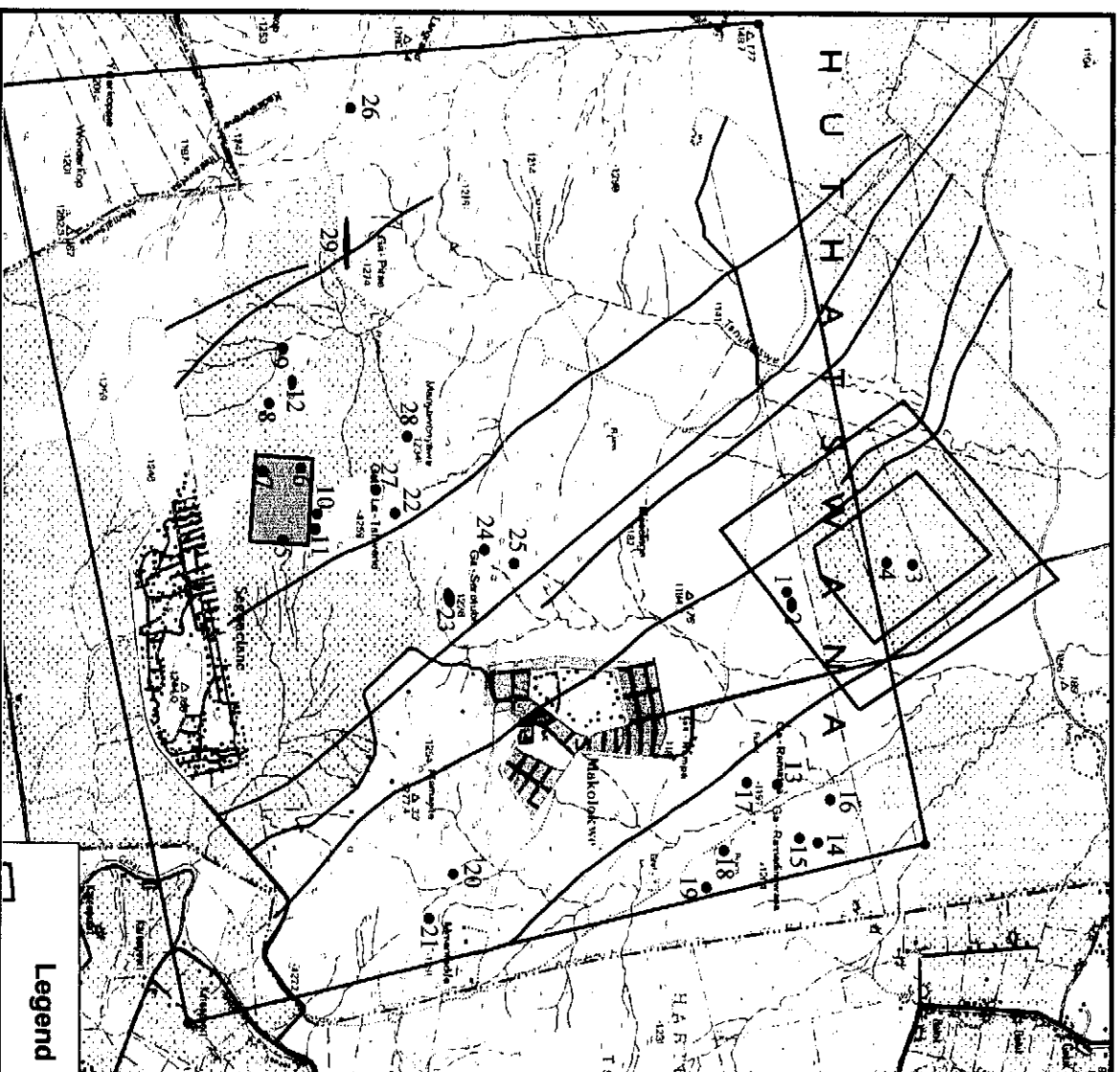


Figure 1. Archaeological sites recorded during the Leeuwkop assessment.

### **BASELINE ASSESSMENTS**

On the first visit, vegetation was lush and ground visibility therefore low. Later, conditions were greatly improved. In both situations, the teams were able to identify areas of archaeological interest. Generally, Middle Stone Age (dating from about 250 000 to 25 000 years ago) artefacts lay scattered throughout the hilly areas, but there were no obvious clusters. Rock piles cleared from agricultural lands, for example, were devoid of stone tools altogether.

Similarly, a few potsherds occurred in old agricultural lands, but there were no obvious clusters.

#### *Tailings Dam*

Only one pottery site is worth noting.

- **Site 1:** (25 36 34S 27 36 25E) lay at the foot of the hill with Beacon No. 176, north of Makolokwe Village. The hill has been a recent source of granite. On present evidence, Site 1 has *no significance*.

On the other hand, the low hills north of the granite quarry, on the edge of the Tailings Dam, contain a large area of stonewalling.

- **Site 2:** (25 36 33-35S 27 36 29-34E) includes several cattle kraals as well as low stone arcs built around bare rock surfaces. Associated pottery with rim nicking suggests the walling dates to the late 18<sup>th</sup> or early 19<sup>th</sup> century and was built by Western Sotho-Tswana, such as Bakwena. The west end of this complex also includes a man-made rock gong: a boulder has been placed on smaller blocks to create a ledge that produces vibrations when struck (Figure 2). The gong bears the signs of much use. This unusual feature plus the extensive walling gives Site 2 *medium significance*

Raised rock areas in the cultivated lands, avoided by the plough, yielded a few recent potsherds, glass and metal. These are probably the residential remains of farm labours.

- **Site 3:** (25 35 44.5S 27 36 25.2E);
- **Site 4:** (25 35 55.3S 27 36 25.2E).

Both sites have *no significance*.

### *Plant & Shaft Area*

Numerous sections of stonewalling dot the northern part of this area. Some are associated with porcelain and glass, and therefore represent the residences of traditional farmers.

Presumably, these sites date to the early 20<sup>th</sup> century. Examples include:

- **Site 5:** (25 39 09S 27 36 12.4E)
- **Site 6:** (25 39 07.7S 27 35 55.5E)
- **Site 7:** (25 39 18.6S 27 35 59E)
- **Site 8:** (25 39 16.8S 27 35 32.7E)
- **Site 9:** (25 39 08.6S 27 35 16E)

Sites 5 to 9 have *no significance*.

Three other areas contain stonewalled settlements that include cattle kraals, outer boundary walls and middens. Two stand at the base of the large hill, known as Gata La Tshwene, at the north end of the Plant Area.

- **Site 10:** (25 39 01.9S 27 36 04.2E) includes a large maize grindstone in one of the walls of a central cattle kraal (Figure 3), and dates the site to the late 18<sup>th</sup> or early 19<sup>th</sup> century.



Figure 3. Typical stone walling in Site 10.

- **Site 11:** (25 39 02.7S 27 36 08.7E to 25 39 00S 27 36 11.8E) is larger, extending over to borehole SNL 6. This borehole area also yielded older pottery, dating to the 16<sup>th</sup> century. The pottery belongs to the *Olifantspoort facies* of the Moloko cluster, and was made by early Southwestern Sotho-Tswana, such as BaRolong. Thus this site has at least two components. A subsequent visit, when vegetation was reduced, found vestiges of Type N walling, dating to about the 16<sup>th</sup> century.

Both Sites 10 and 11 have *medium significance*.

- A third site with good stonewalling, **Site 12** (25 39 07S 27 35 25E to 25 39 06S 27 35 28E), curves around the base of a small hill west of the plant area. There are several low but definite circles. Site 12 has *medium significance*.
- **Site 13** (25 36 31S 27 37 27E pegs 6398/1338) is located in the saddle of the hill Ga-Ramata. Presumably, the name refers to the stonewalled settlement. Besides walling, the complex includes a cattle kraal with vitrified dung. This component probably dates to about AD 1800. Historic porcelain and iron objects mark a second, more recent occupation. Recent quarrying has caused severe damage, and so the site has *low significance*.
- **Site 14** (25 36 20S 27 37 47E pegs 6426/1346) contains a rectangular house made with sun-dried bricks, glass and various metal items. The remains of other recent homesteads lie at 6414/1348 and 6414/1353. These recent sites have *low significance*.
- **Site 15** (25 36 23S 27 37 46E pegs 6414/1341-1346) is another early 19<sup>th</sup> century stonewalled settlement, in this case on the west side of Ga-Ramadingwana. It has also been severely damaged by quarrying, and therefore has *low significance*.
- **Site 16** (25 36 14S 27 37 35E pegs 6409/1363) is a large historic complex with porcelain, much stone walling and a rectangular brick house. The house may well

have belonged to a chief. The site has been partially damaged by the new road, but is otherwise in a good state of preservation. It has *medium significance*.

The remains of several 20<sup>th</sup> century settlements lie around the southern bases of Ga-Ramatua and Ga-Ramadingwana:

- **Site 17** (25 36 45S 27 37 25E pegs 6393/1321)
- **Site 18** (25 36 50S 27 37 54E pegs 6411/1321)
- **Site 19** (25 36 54S 27 38 05E pegs 6428/1321).

Many more appear on the 1 50 000 map. On the ground, they are all marked by glass, porcelain, ash heaps, straight stonewalls and the foundations of rectangular houses. Some have been partially disturbed, but in any case they have *low significance*.

A graveyard is recorded on the map at 25 37 14S 27 37 58E (pegs 6421/1284), but we did not examine it.

- **Site 20** (25 38 17S 27 37 58E pegs 6402/1203) consists of circular cattle kraals and other walling. It probably dates to the early 20<sup>th</sup> century. The new road system has gone through a kraal, but the site still has *medium significance*.
- An early 20<sup>th</sup> century site, **Site 21**, lies on the southwestern slope of Mmantadile (25 38 21S 27 38 12E pegs 6414/1193). It includes a brick house positioned above a large rectangular area that may have been a public court. The new road has damaged the upper portion of the settlement, but, because of the possible court, it still has *medium significance*.

The remains of several 20<sup>th</sup> century homesteads, marked by house foundations, metal and ash heaps, stand in the valley south of Mmantadile (pegs 6408/1177; 6402/1177;

6402/1170; 6420/1182; 6426/1176 & 6432/11740). Many appear on the 1: 50 000 map.

All have *low significance*.



- Another stonewalled site with a large open space, **Site 22**, stands in the saddle (25 38 30S 27 36 05E, near pegs 6276/1216) of the Gata-La-Tshwene hills west of the R556. A new road has disturbed some walling, and the site has *low significance*.
- A large stonewalled complex, **Site 23** (25 38 14S 27 36 33E pegs 6306/1226 to 6312/1229), extends around the eastern side of Ga-Serutube. The complex includes many cattle kraals, middens and other features. Small livestock enclosures attached to the outer wall places the walling within the Klipriviersberg type, associated with the BaFokeng, and date the settlement to about AD 1800. An old road runs through the southern edge, but the site still has *medium significance*.
- A 16<sup>th</sup> century, pre-stonewalled site, **Site 24** (25 38 05S 27 36 07E pegs 6282/1244), is located in a flat area between two hills. Cord impressions on the pottery are characteristic of the *Olifantspoort facies*, made by Southwestern Sotho-Tswana. Although of academic interest, the site has *low significance* to the project.
- A small, stonewalled site, **Site 25** (25 37 57S 27 36 14E pegs 6288/1257), with a few kraals and some burnt daga extend down the eastern slope of a raised plateau overlooking the R556. This site has *low significance*.
- **Site 26** (25 39 00S 27 34 00E pegs 6132/1228) stands in the saddle of the Kaditshwene range. Thick vegetation obscured its full extent, but it includes low terraces, some walling and burnt daga. On present evidence, this site has *low significance*.

The new road system made for the seismic survey lead past, or through, three more sites west of the R556.

- **Site 27** (25 38 40.5S 27 35 52.5E) belongs to the Klipriviersberg type. Pottery from a midden exposed by the new road belongs to the *Uitkomst facies*. Both the pottery and walling type were made by 19<sup>th</sup> century BaFokeng. The road caused some minor damage, and the site has *medium significance*.
- Stonewalling at **Site 28** (25 38 29S 27 35 22E) probably dates to the 19<sup>th</sup> century. It was not damaged and is well preserved. It has *medium significance*.
- A large stand of sisal at (25 38 49.5S 27 34 50.5E) marks **Site 29**, a large Historic complex. This complex includes rectangular house mounds, walled cattle kraals and middens with porcelain, glass and metal. The complex extends west to 25 38 51.5S 27 34 42.5E where the remains of a brick house still stand. African pottery in this northern section belongs to the *Buispoort facies*, and shows that Western Sotho-Tswana, such as Bakwena, lived here. The road damaged several houses and other features, but much remains undisturbed. **Site 29** appears on the 1 : 50 000 map, and it may have high social significance to the local community. However, its archaeological *significance is low*.

#### POTENTIAL IMPACTS

The seismic survey posed the first threat to the archaeological sites. The roads for the grid system had already damaged **Site 20** before ARM staff examined the area in April. As a result, ARM recommended then that the roads should avoid **Sites 2, 10-12**; any other damage would be recorded later. Subsequent visits showed that the roads west of the R556 generally avoided all stonewalling. Only **Site 11** had been negatively impacted.

Other potential impacts relate to the Plant & Shaft Area and Tailings Dam. Generally, these areas lack sites of archaeological importance. Most stonewalling with medium significance, such as **Sites 12, 27** and **28**, lie outside the proposed impact zones and thus do not require further consideration. On the other hand, **Sites 2, 10** and **11** are located on the edges of these two impact zones, and are threatened by perimeter fencing.

## RECOMMENDATIONS

Only three archaeological sites require specific protection during the construction phase of the mine: **Site 2, Site 10 and Site 11**. They are all stonewalled settlements at the base of hills. To protect them, they should be fenced off from mining operations, or the perimeter fencing should be shifted so that they lie well outside the impact zones. Other mitigation would take time and be costly.

Archaeologists need to record the damage to **Sites 11, 20 and 27**. The graveyard should be completely avoided.

## SIGNIFICANCE OF IMPACTS

Because of the seismic survey, the impact has been moderate, irreversible and permanent, but limited to the individual sites. If the recommendations were followed for the construction phase, then future impacts would be negligible (Table 1). If the previous damages were recorded, then the impacts would have little negative significance and some positive contribution to the archaeological record.

Table 1. Significance Assessment.

Potential impact on Sites	Project activity	Significance before mitigation	Significance after mitigation
		M R D S P Total SP	M R D S P Total SP
		Pre-construction	
2. damage	Seismic survey	5 5 5 1 2 32 low	none
10. damage	Seismic survey	5 5 5 1 5 80 high	none
11. damage	Seismic survey	5 5 5 1 5 80 high	3 2 5 1 5 55 M
20. damage	Seismic survey	5 5 5 1 5 80 high	none
23. damage	Seismic survey	5 5 5 1 5 80 high	none
27. damage	Seismic survey	5 5 5 1 5 80 high	2 2 5 1 5 50 M
		Construction	
2. damage	Tailings Dam fencing	3 5 5 1 4 56 M	none
10. damage	Plant fencing	3 5 5 1 4 56 M	none
11. damage	Plant fencing	3 5 5 1 4 56 M	none
		Operational	
none			none
		Closure	
none			none

\* irreversible = 5

## **CONCLUSION**

If the mitigation recommendations are accepted, there are no archaeological reasons why the Leeuwkop Platinum Project should not continue.

## **REFERENCES**

- Huffman, T.N. 2005. *Leeuwkop Archaeological Assessment*. Johannesburg: Archaeological Resources Management, March.
- Huffman, T.N. 2005. *Leeuwkop Archaeological Assessment, Part II*. Johannesburg: Archaeological Resources Management, May.