



Berg Water Project

**Supplement Scheme**

Phase 1 Archaeological  
Impact Assessment

**Agency for Cultural  
Resources Management**

**PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT  
BERG WATER PROJECT SUPPLEMENT SCHEME**

Prepared for

**ARUP ENVIRONMENTAL**

On behalf of

**Trans Caledon Tunnel Authority**

By

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## 1. INTRODUCTION

### 1.1 Background and brief

Arup Environmental requested that the Agency for Cultural Resource Management undertake a Phase 1 Archaeological Impact Assessment (AIA) of the proposed Berg Water Project Supplement Scheme, in Franschhoek, in the South Western Cape Province.

The proposed Scheme entails diverting water from the Berg River at a site between Franschhoek and Paarl, and pumping it back to a pumpstation in the vicinity of the proposed Skulifraam Dam.

The Scheme involves construction of a balancing dam and an adjacent pumpstation on the Berg River, a water delivery pipeline leading to the Skulifraam pumpstation, and associated infrastructure, including construction and upgrading of access roads, powerlines, borrow areas and a construction village.

The aim of the AIA is to locate, identify and map archaeological remains that may be negatively impacted by the proposed project, and to propose measures to mitigate against the impact.

## 2. TERMS OF REFERENCE

The terms of reference for the study were:

1. to determine whether there are likely to be any archaeological sites of significance within the proposed Berg Water Project Supplement Scheme;
2. to identify and map any sites of archaeological significance within the proposed Berg Water Project Supplement Scheme;
3. to indicate the sensitivity and conservation significance of archaeological sites potentially affected by the proposed development;
4. to assess the status and significance of any impacts resulting from the proposed development;
5. to identify mitigatory measures to protect and maintain any valuable archaeological sites that may exist within the site, and
6. to propose actions for inclusion in the Construction Environmental Management Plan for the proposed project.

### 3. APPROACH TO THE STUDY

#### 3.1 Method of survey

The approach followed in the AIA entailed a foot and vehicle survey of the proposed Berg Water Project Supplement Scheme, and associated infrastructure.

A desktop study was also undertaken.

Archaeological work undertaken in the Franschoek area has recorded relatively large numbers of Stone Age tools (Kaplan 1999, 2000, 2001, 2002a,b, 2003a,b,c). The most commonly-occurring tools in the area are assigned to a period known as the Early Stone Age<sup>1</sup> (ESA).

ESA tools were first discovered on terraces above the Eerste River in Stellenbosch (Peringuey 1902, 1911). Among these was an artefact type of great antiquity recognised as an early handaxe. For many years after this, the ESA of South Africa was referred to as the 'Stellenbosch Culture' until the term was re-defined in the 1960s (Goodwin & Van Riet Lowe 1929).

Today the ESA is divided into the 'Olduwan' period, which is up to 1.7 million years old. This industry is associated with the oldest and most simple human-made artefacts. This was followed by the 'Acheulean' Tradition, a more developed stone artefact industry, characterised by the presence of specific types of stone tools such as handaxes, choppers and cleavers.

Acheulean sites have been recorded throughout South Africa and are especially associated with pans, river terraces, streams, and certain types of rock outcrops. Acheulean tools are also commonly found on mountain slopes, in degraded areas such as slope washes, road and bridge cuttings, excavations, in gravels deposits, vineyards, and in ploughed fields.

Younger Middle Stone Age<sup>2</sup> (MSA) and Later Stone Age<sup>3</sup> (LSA) remains appear to be less common in the Franschoek area, but such sites are known to occur. LSA rock paintings occur in the Wemmershoek area and on the farm Morelig (Kaplan 2003).

#### 4. THE STUDY AREA

A locality map of the study area is illustrated in Figure 1.

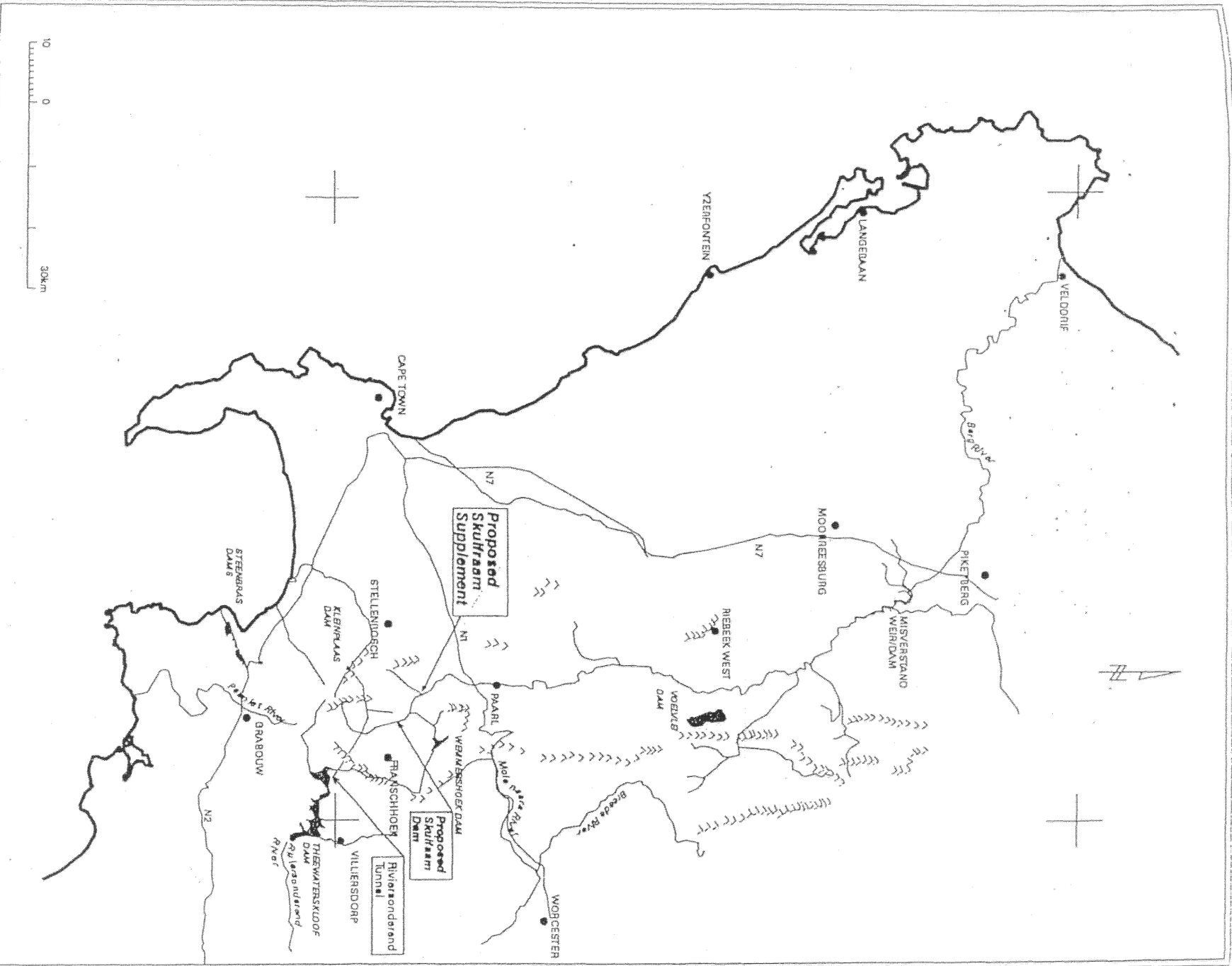
The proposed Supplement Scheme is illustrated in Figure 2.

An Environmental Impact Assessment (EIA) of the proposed Skuifraam Dam was completed in 1996 (Nlinham Shand 1996). The EIA included an archaeological study of the core dam site (Yates & Manhire 1997).

<sup>1</sup> A term referring to the period between 2 million and 200 000 years ago.

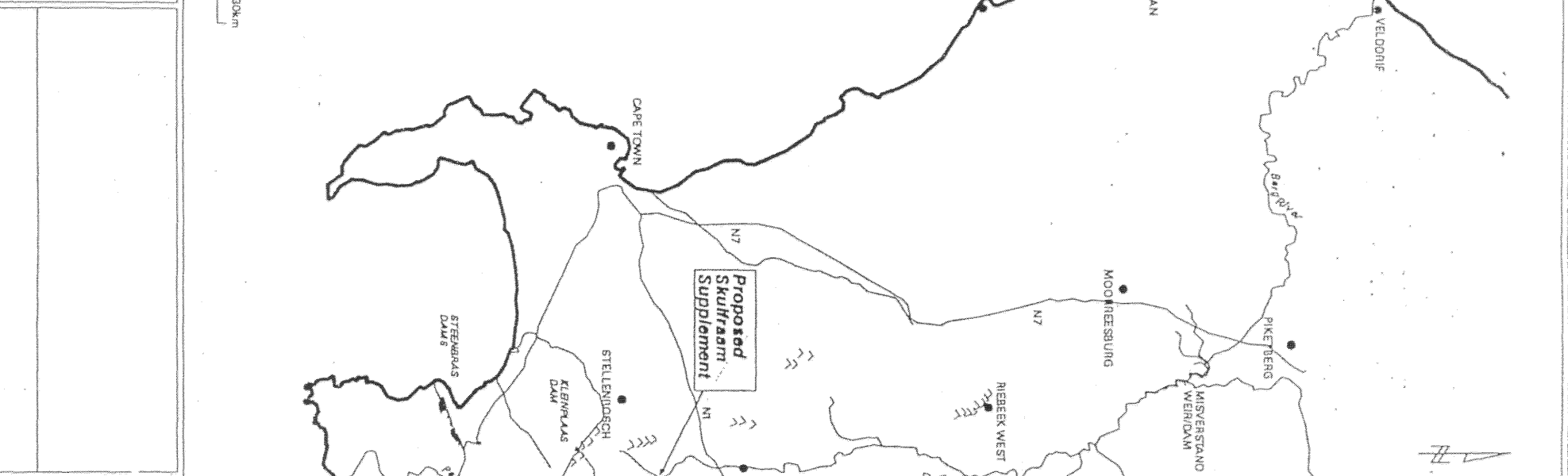
<sup>2</sup> A term referring to the period between 200 000 and 20 000 years ago.

<sup>3</sup> A term referring to the last 20 000 years of precolonial history in southern Africa.



**LEGEND**

	RIVERS
	DAMS
	TOWNS
	RSE TUNNEL
	ROADS





  
 DEPARTMENT OF WATER AFFAIRS AND FORESTRY  
 DIRECTORATE OF PROJECT PLANNING

Figure 1. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Locality map of the study area.



Most of the dam site that would be affected by the Berg Water Project has been subject to intensive forestry activities. However, some Early and Middle Stone Age tools were located, but these occurred at a very low density and were not considered to be important or significant (Yates & Manhire 1997).

The Skuifraam ruins, consisting of the remains of a substantial building and the Driefontein ruins consisting of the remains of a building and associated graveyard, was also identified during the specialist archaeological survey (Yates & Manhire 1997).

This report is primarily concerned with an archaeological study of the Berg Water Project Supplement Scheme. Cape Archaeological Survey cc has undertaken detailed archival/historical research to establish the chronology of the Skuifraam and Driefontein ruins, including the graveyard (Patrick 2003).

## **5. LEGISLATIVE REQUIREMENTS**

### **5.1 The National Heritage Resources Act (Act No. 25 of 1999)**

#### **5.1.1 Structures (Section 34 (1))**

No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the South African Heritage Resources Agency (SAHRA), or Western Cape Heritage, the responsible provincial heritage resources authority.

#### **5.1.2 Archaeology (Section 35 (4))**

No person may, without a permit issued by the SAHRA or the responsible heritage resources authority, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object.

#### **5.1.3 Burial grounds and graves (Section 36 (3))**

No person may, without a permit issued by SAHRA or a provincial heritage authority, destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority.

## **5.2 Application requirements and procedure**

Permit applications must be made on the official form:

- *Application to destroy, damage, deface, excavate, alter, remove from its original position, subdivide or change the planning status of a Provincial Heritage Site or demolish a structure 60 years old or more, as protected in terms of the National Heritage Resources Act (Act No. 25 of 1999):*
- *Application for permit to destroy: Archaeological and palaeontological sites and meteorites;*



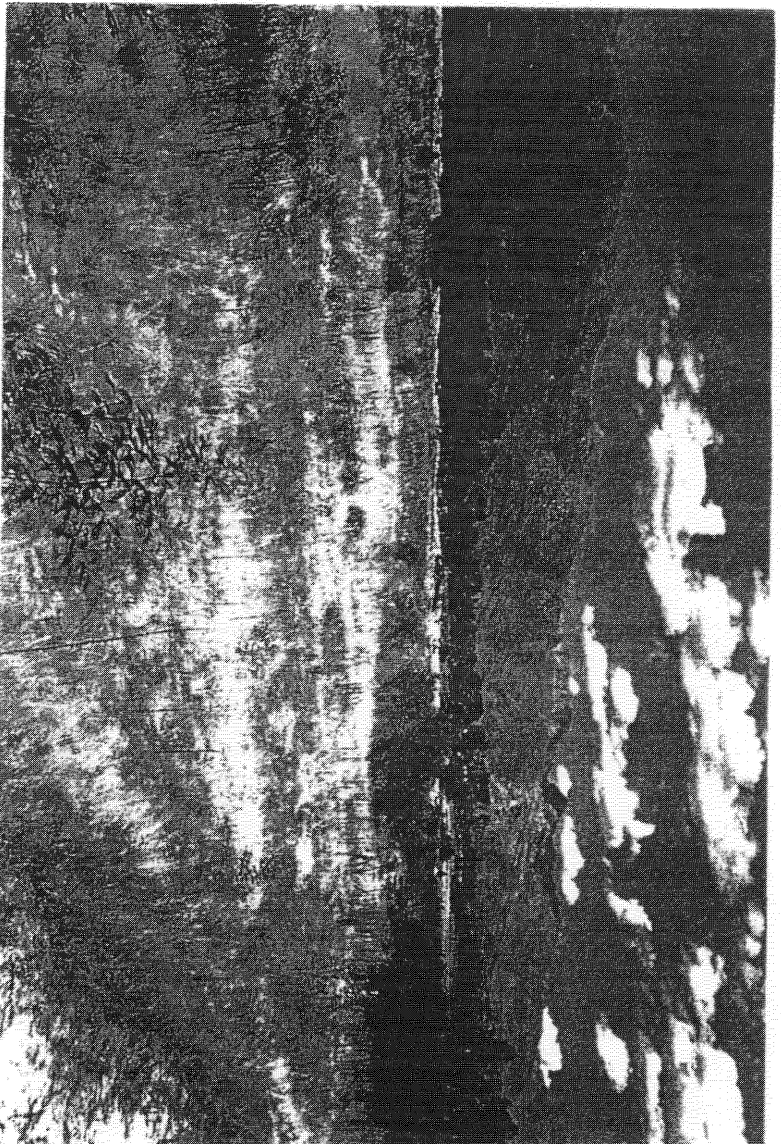


Figure 3. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. The balancing dam. Arrow indicates pipeline peg.

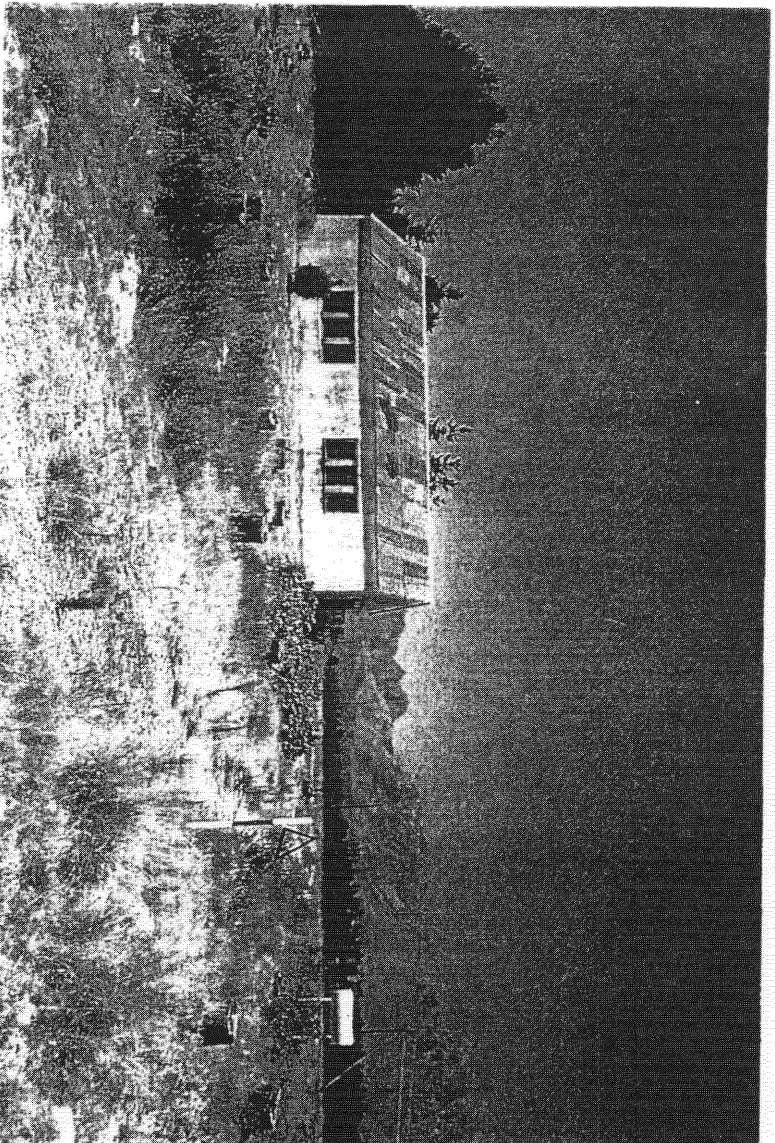


Figure 4. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Packing shed on Rhodes Fruit Farm. Arrow indicates pipeline peg.

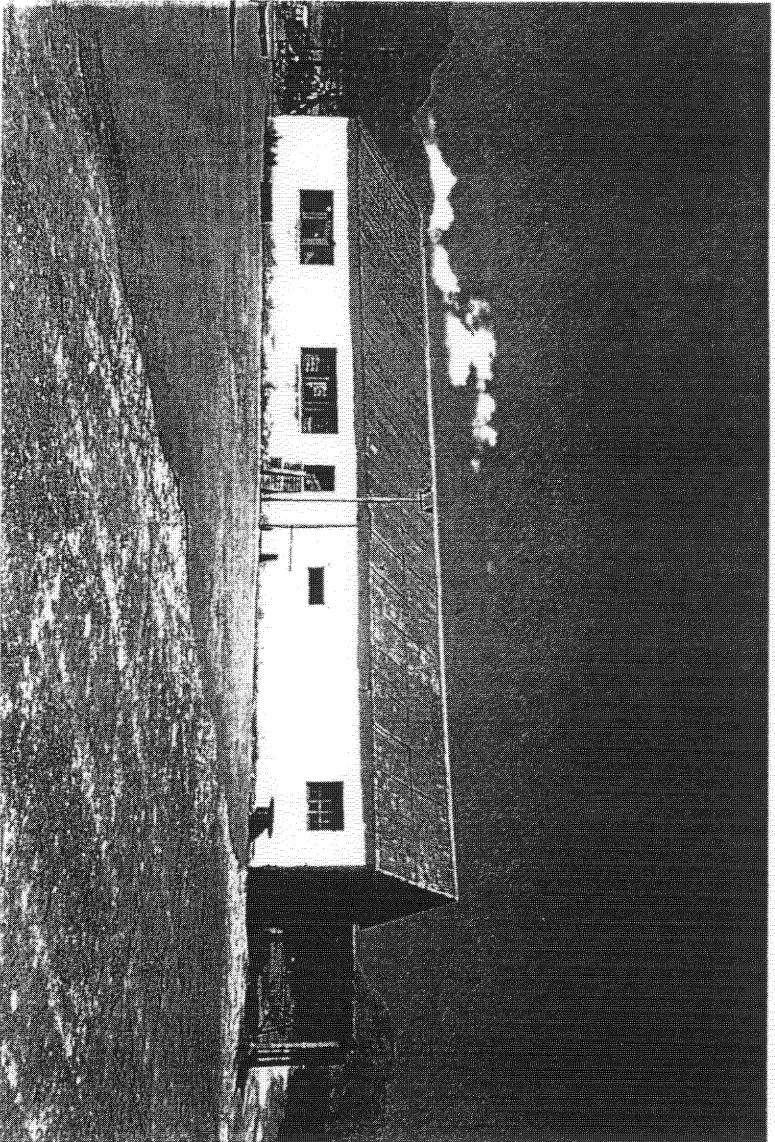


Figure 5. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Packing shed on Rhodes Fruit Farm. Arrow indicates pipeline peg.

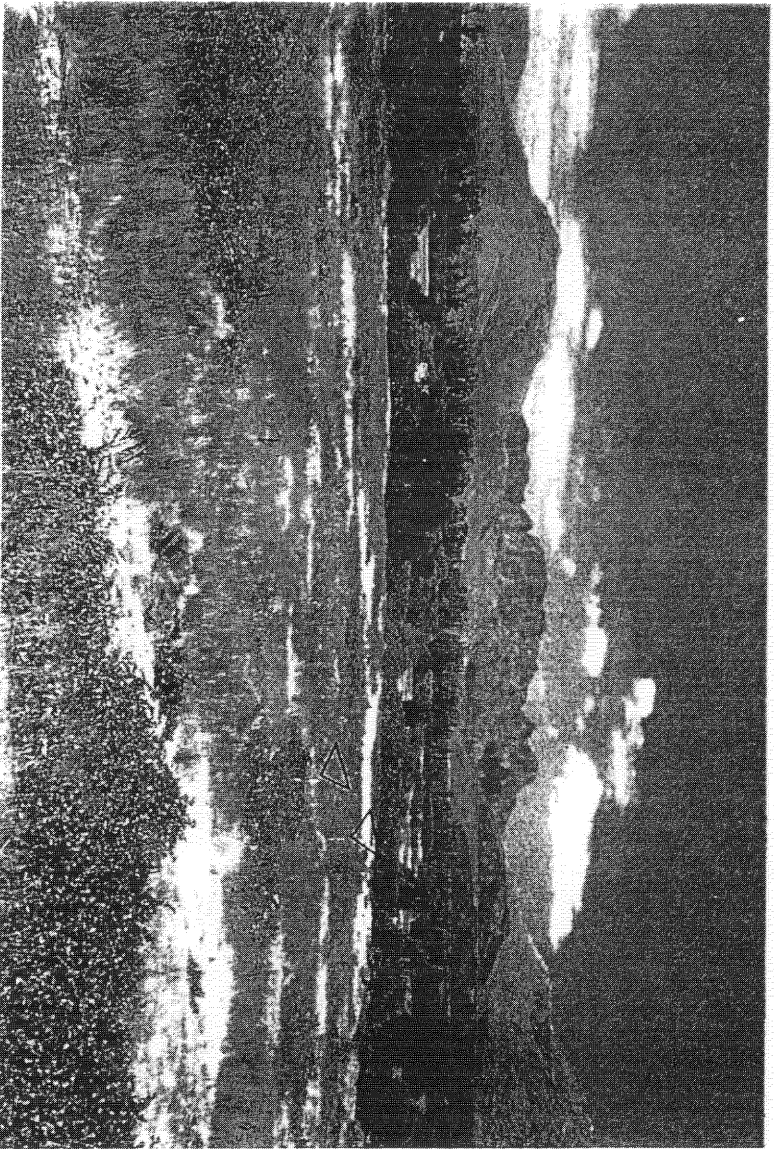


Figure 6. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Arrow indicates pipeline pegs

- *Application for permit: Burial Grounds and Graves.*  
Permit application forms are available from SAHRA.

The Proponent, Trans Caledon Tunnel Authority (TCTA) must submit permit applications to SAHRA and Heritage Western Cape.

## **6. CONSTRAINTS AND LIMITATIONS**

The field study was severely constrained by thick vegetation cover along a significant portion of the proposed pipeline route, severely compromising archaeological visibility.

## **7. IDENTIFICATION OF POTENTIAL RISKS**

There are no potential risks associated with the proposed project.

## **8. IMPACT ASSESSMENT AND DESCRIPTION**

### **8.1 The Balancing dam**

The proposed 4 ha balancing dam, and pumpstation are located on the west (left) bank of the Berg River, about 700 m below the confluence with Dwars River, on the government experiment farm Bien Donne, and the farm Riversmeet (Figure 3).

Much of the area comprises old agricultural land and fruit orchards. A portion of the site is also infested with alien vegetation and exotic grass.

A few ESA flakes, flaked/split river cobbles, and a large core were located among the boulder berms on the river terrace and the higher lying land of the floodplain. No other remains were located.

The receiving environment is not considered to be archaeologically sensitive, vulnerable or threatened.

Importance of finds: low

Suggested mitigation: **none required**

### **8.2 The pipeline**

Three alternative pipeline routes were assessed.

The proposed 9-km pipeline route crosses the low-lying cultivated lands of the Drakenstein Prison. It then follows a gravel road through a section of the La Motte State Forest. Thereafter the route follows gravel roads through fallow land and fruit orchard belonging to Rhodes Fruit Farms. The proposed route through Rhodes Fruit Farms is located alongside two modern packing sheds (Figures 4 & 5).

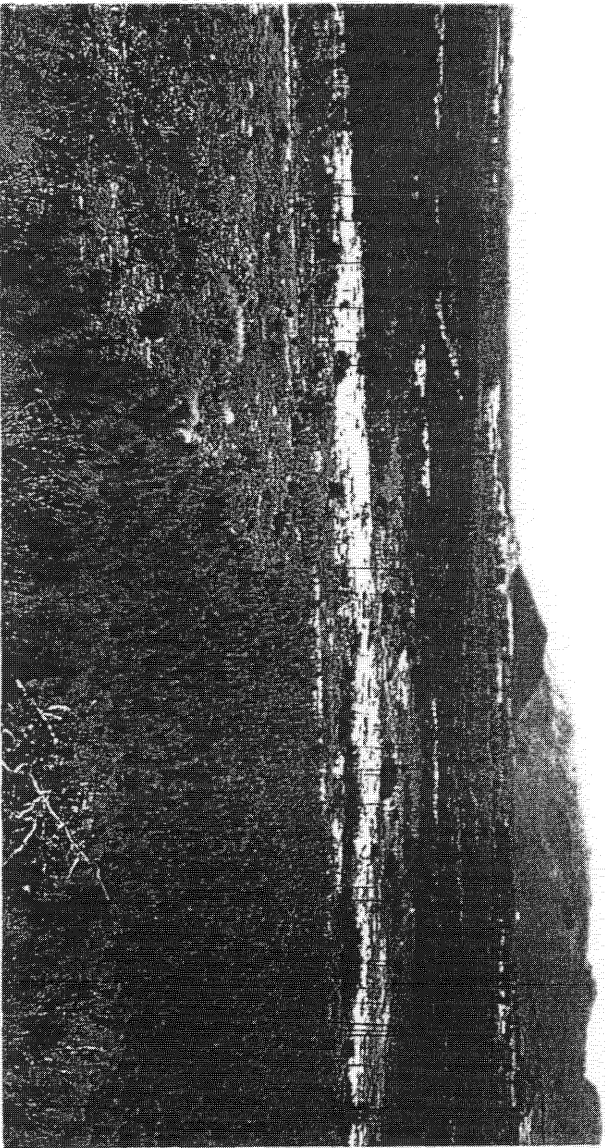


Figure 7. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Pipeline route through La Motte Forest.

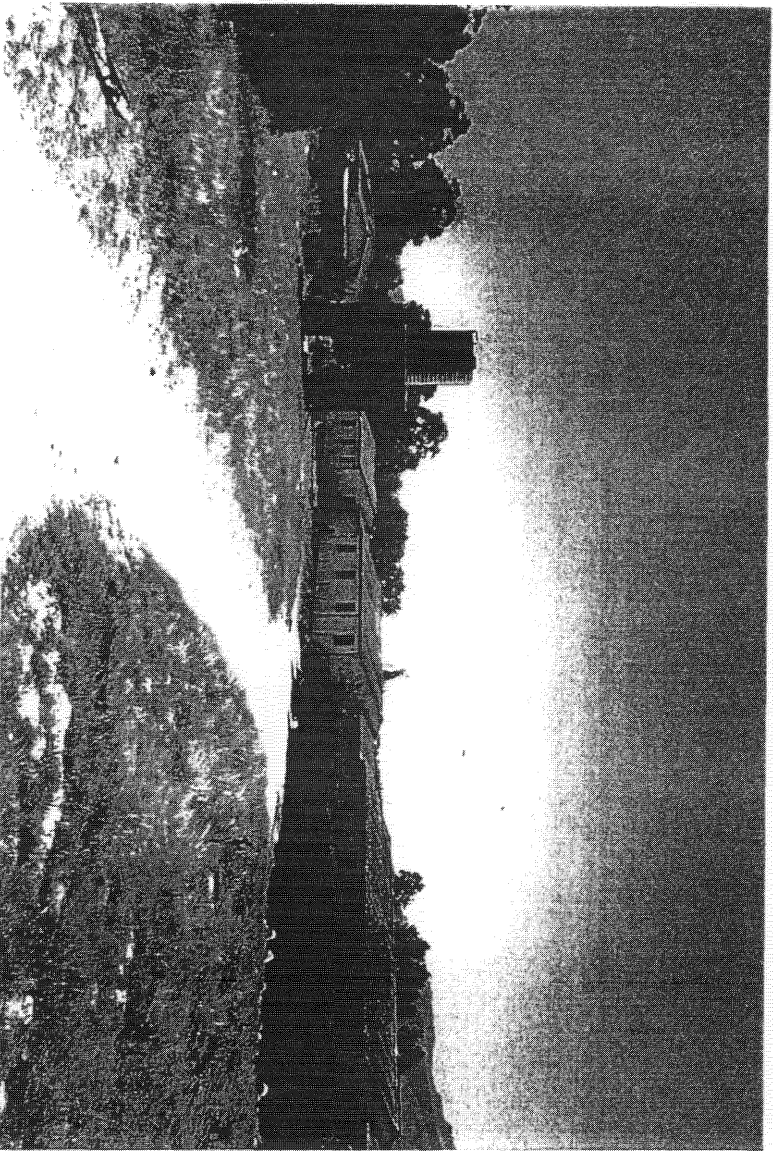


Figure 8. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Farm labourer cottages alongside alternative pipeline route.

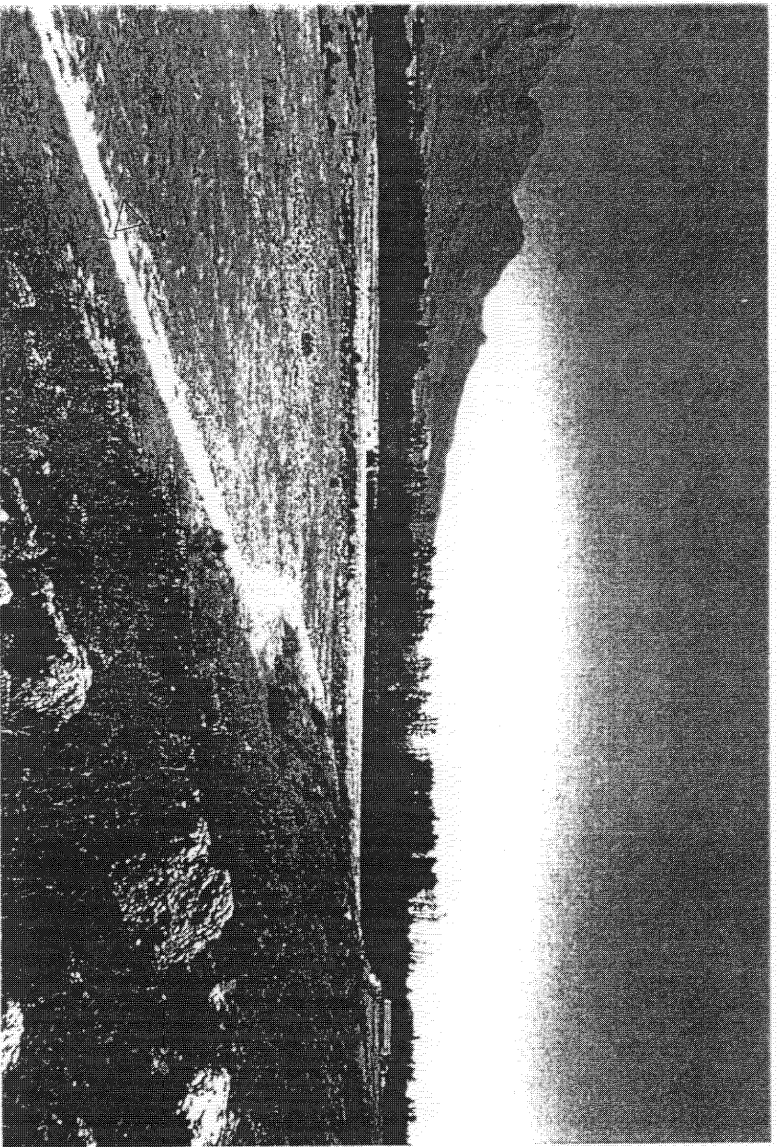


Figure 9. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Arrow indicates pipeline peg. The packing shed in Figure 5 can be seen in the right foreground .

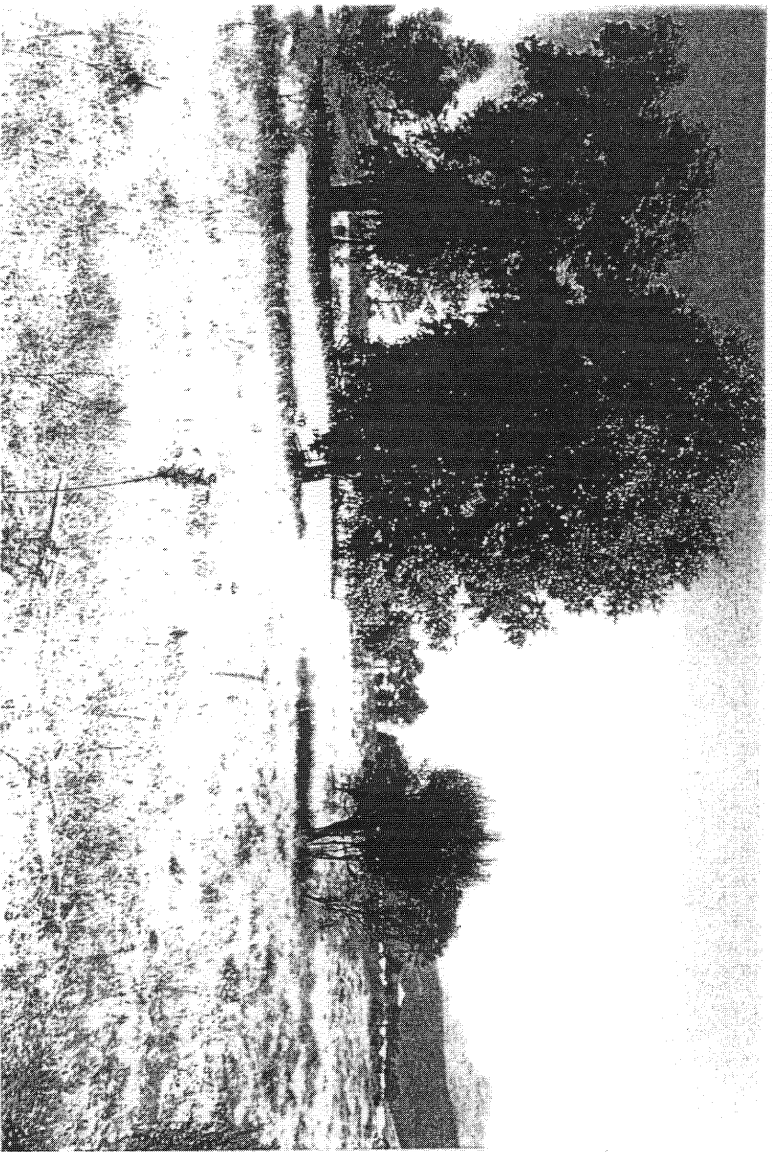


Figure 10. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Proposed Drakenstein borrow area.

The route then crosses the Berg River and the R45 at the intersection of the Bridge House school, and traverses agricultural lands on the Farm Bo-Waterval (Figure 6), before following a route through the La Motte forest (Figure 7) to the proposed Skuifraam Dam pumpstation. The route then continues as the proposed Skuifraam Dam pipeline route along the slopes of the Groot Drakenstein Mountains to the Dasbos outlet.

This section of the route is infested with alien vegetation, resulting in low archaeological visibility.

The proposed alternative route follows the floodplain of the Berg River. A large portion of the route alongside the river is infested with alien vegetation, resulting in low archaeological visibility. The route passes close to modern farm labourer's cottages on Rhodes Fruit Farm (Figure 8).

One ESA flake, a cleaver and one large chunk were found alongside the gravel roads in the La Motte forest (on the Drakenstein Prison side), and Rhodes Fruit Farm.

A handful of ESA flakes, two split/flaked cobbles, and an incomplete handaxe were found on spoil dumps alongside a long excavated trench on Rhodes Fruit Farms.

Two ESA flakes, two MSA flakes and a broken MSA point, and three LSA silcrete flakes and some quartz chunks/cores were found along a rocky ridge alongside the gravel road on the Rhodes Fruit Farms overlooking the Berg River (Figure 9).

Some ESA flakes and some split/flaked cobbles were found alongside a gravel access road in the La Motte Forest area on the way to the proposed Skuifraam pumpstation.

Overall, the receiving environment for the proposed alternative pipeline routes is highly disturbed and modified, and not considered to be archaeologically sensitive, vulnerable or threatened.

Importance of finds: **low**

Suggested mitigation: **none required**

### **8.3 Access roads**

Existing access roads in the study area will be upgraded.

A handful of ESA flakes and flaked cobbles were located in the road reserve between Bridge House School and the Skuifraam pumpstation.

ESA flakes, chunks and split/flaked cobbles were located in the gravel road surrounding the core dam site. A few flakes and spilt cobbles were also found in old borrow areas alongside the road on the western side of the dam site.

Importance of finds: **low**

Suggested mitigation: **none required**

#### **8.4 Borrow pits**

Four borrow pits have been identified. These will provide selected backfill material for the construction of the pipeline.

##### **8.4.1 Drakenstein borrow pit**

The Drakenstein borrow pit is situated upstream of the pumpstation on the property of the Victor Verster Prison (Figure 10). The site is well grassed and includes scattered river boulders and some gravels, and some large trees.

One ESA flake, and one flaked/split cobble was located among a small pile of river cobbles.

Importance of finds: low

Suggested mitigation: none required

##### **8.4.2 La Motte borrow pit**

The La Motte borrow pit is located on the farm Bo-Waterval, to the west of the La Motte forestry area (Figure 11). The site comprises a mix of exotic grass, old vineyards, alien vegetation and fallow land. The site is located about 3 km from the Skuifraam pumpstation.

No archaeological remains were located.

##### **8.4.3 Denne borrow pit**

The Denne borrow pit is located next to the gravel road between Skuifraam Dam and the La Motte Forestry Station (Figure 12). The site comprises a mix of young Pine trees and natural veld. Gravel access roads cut through the site.

A few ESA flakes, two chunks and a large core was located in gravel roads that cut through the site.

Importance of finds: low

Suggested mitigation: none required

##### **8.4.4 Jaffe's borrow pit**

The Jaffe's borrow pits is situated next to the gravel road, very close to the La Motte Forest Station (Figure 13). The site is located within a mature pine plantation.

Two ESA flakes and one chunk were found in an excavated sandpit alongside a gravel road.

Importance of finds: low

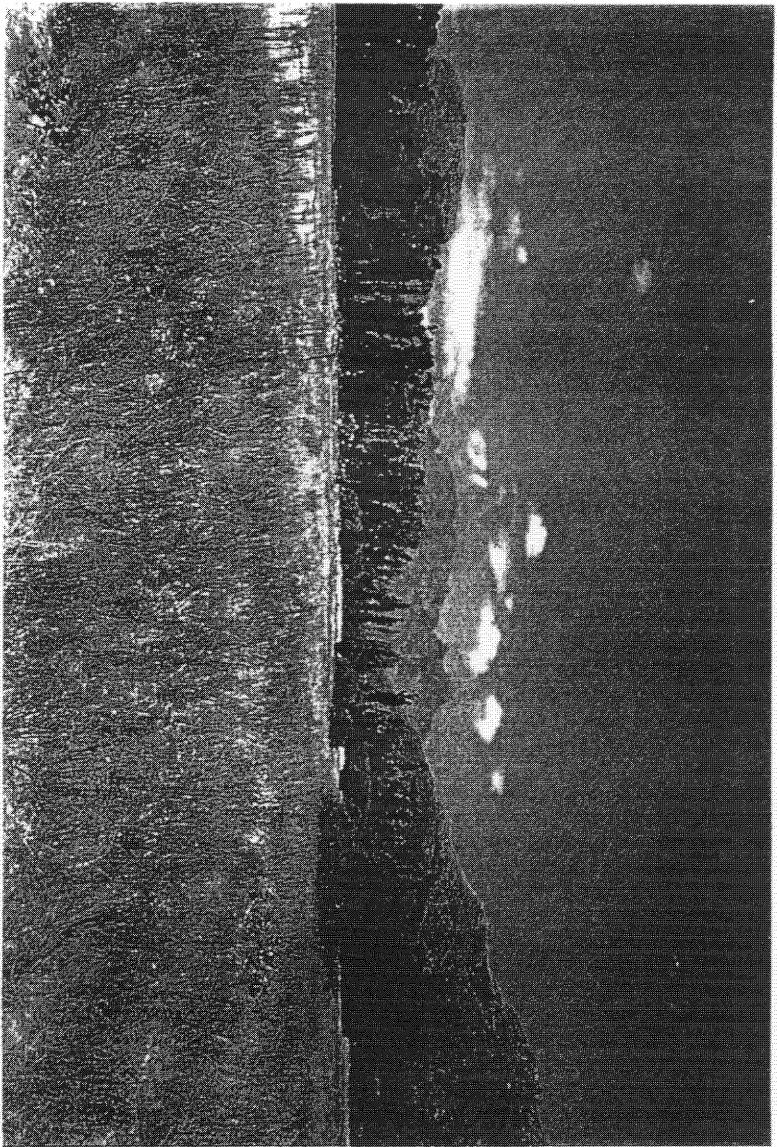


Figure 11. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Proposed La Motte borrow pit.

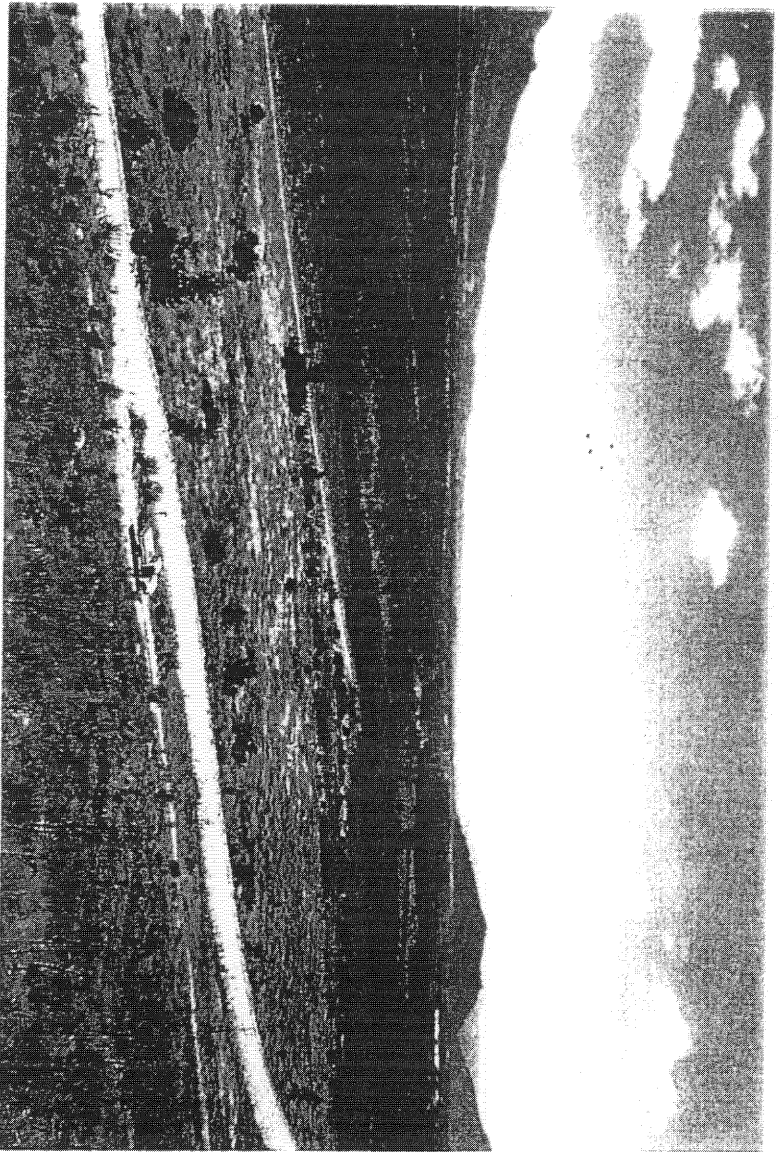


Figure 12. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Proposed Denne borrow pit.



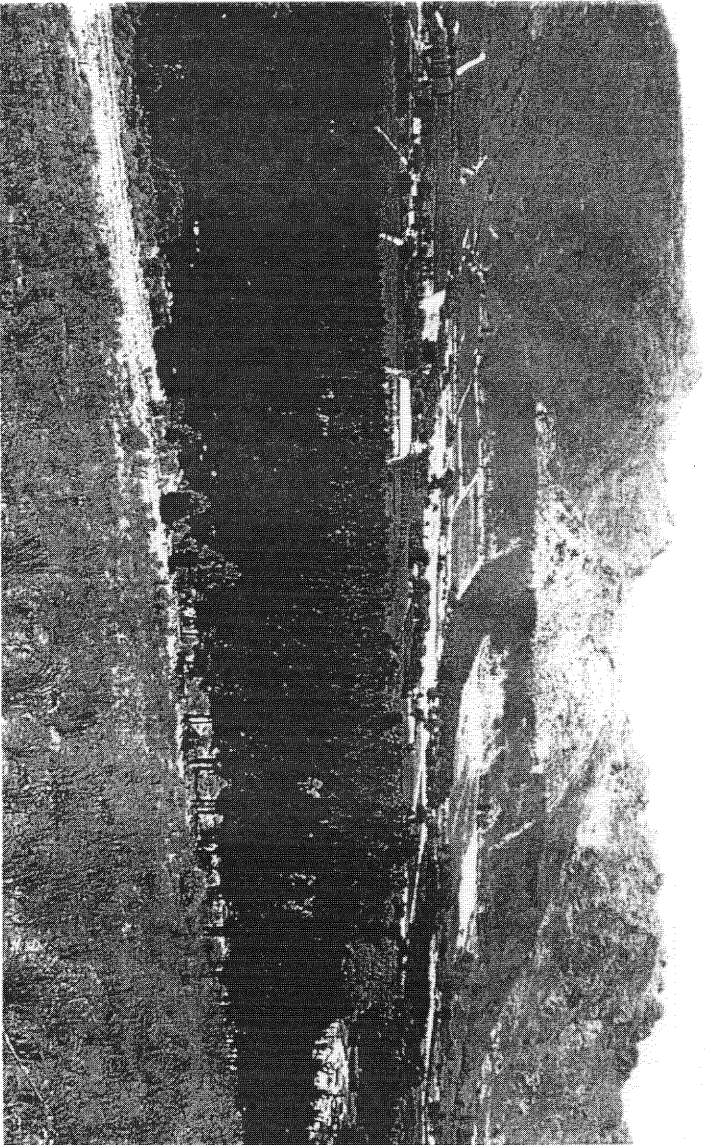


Figure 13. Phase 1 Archaeological Impact Assessment, Berg Water Project Supplement Scheme. Proposed Jaffes borrow pit.

Suggested mitigation: none required

#### **8.5 The Powerline**

Eskom will be undertaking their own EIA for the powerline (Joseph Chihota, Arup Environmental, pers. comm.).

#### **8.6 The construction village**

At the time of writing, the construction village site had not yet been determined.

#### **9. IMPACT STATEMENT**

The impact of the proposed Berg Water Project Supplement Scheme on archaeological remains is likely to be low to negligible.

The probability of locating significant archaeological remains during implementation of the project is also likely to be low to negligible.

#### **10. CONCLUDING STATEMENT**

In general the receiving environment for the proposed Berg Water Project Supplement Scheme is not considered to be archaeologically sensitive, vulnerable, or threatened.

#### **11. RECOMMENDATIONS**

With regard to the Berg Water Project Supplement Scheme, the following recommendations are made.

1. No archaeological mitigation is required.
2. No more detailed studies are required.

## 12. REFERENCES

- Goodwin, A.J.H. & Van Riet Lowe, C. 1929. The Stone Age Cultures of South Africa. Annals of the South African Museum. 27.
- Kaplan, J. 2003. Phase 1 Archaeological Impact Assessment, proposed development, Meerust Estate. Report prepared for Aikman Associates. Agency for Cultural Resource Management.
- Kaplan, J. 2003. Phase 1 Archaeological Impact Assessment, proposed development, Frenchman's Creek Golf Estate. Report prepared for Winter and Baauman Heritage Specialists. Agency for Cultural Resource Management.
- Kaplan, J. 2003. Archaeological Assessment, Morelig Farm, Wemmershoek. Report prepared for W.D. Bourbon-Lefley. Agency for Cultural Resource Management.
- Kaplan, J. 2002. Phase 1 Archaeological Impact Assessment, Erf 1680 and Erf 1692 Franschoek. Report prepared for Aikman Associates. Agency for Cultural Resource Management.
- Kaplan, J. 2002. Archaeological Impact Assessment, proposed subdivision of Erf 1536, Franschoek. Report prepared for Doug Jefferys Environmental Consultant. Agency for Cultural Resource Management.
- Kaplan, J. 2001. Archaeological study, Bloekombosch Group Housing Project, Franschoek. Report prepared for Dennis Moss Partnership. Agency for Cultural Resource Management.
- Kaplan, J. 2000. Archaeological study, Erf 951 Franschoek. Report prepared for Steenkamp and Associates. Agency for Cultural Resource Management.
- Kaplan, J. 1999. Archaeological and historical study, proposed Franschoek Golf Estate. Report prepared for SRK Consulting Engineers and Scientists. Agency for Cultural Resource Management.
- Patrick, M. 2003. Berg River Historical background on the property known as Driefontein and Skuifraam, Franschoek. Report prepared for Arup Environmental Cape Town. Cape Archaeological Survey cc.
- Péringuey, L. 1902. Stone Implements from Paarl and Stellenbosch. Transactions of the South African Philosophical Society 11 (4).
- Péringuey, L. 1911. The Stone Ages of South Africa as represented in the collection of the South African Museum. Annals of the South African Museum 8:180-201
- Ninham Shand .1996. Skuifraam Dam Feasibility Study. Environmental Impact Assessment Final Report Volumes 1 and 2. Report prepared for the Department of Water Affairs and Forestry.

Yates, R. & Mahhire, A. 1997. Archeological survey of a dam site in the Franschoek area. Report prepared for Nihham Shand Environmental and Engineering Consultants. Archaeology Contracts Office, Department of Archaeology, University of Cape Town.