

PROPOSED EXPANSION OF DAMS  
ERF 9795 CONSTANTIA: CONSTANTIA UITSIG  
SPAANSCHEMAT RIVER ROAD, CONSTANTIA



**Figure 1: View from the eastern boundary of the farm up the shallow valley where the dam is to be constructed**

DRAFT HERITAGE IMPACT ASSESSMENT REPORT

Prepared in compliance with **Section 38(8)** of the National Heritage  
Resources Act (No 25 of 1999)

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July 2017

DEA&DP case no: 16/3/3/1/A6/16/2017/17

HWC case no: 17050209

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## 1. BACKGROUND

On 25 January 2016, the owners of Erf 3025 and Erf 9795 Constantia, Meerenhof Properties (Pty) Ltd obtained approval from Heritage Western Cape (HWC) for the redevelopment of part of the property as a private home for their family and to use the rest of the farm for wine-making, horticulture and equestrian purposes. This approval was supported by the South African Heritage Resources Agency (SAHRA). It followed the submission to the heritage agencies of a Heritage Impact Assessment (HIA) (HWC Case No. 14102105AS1029E) prepared in compliance with Section 38(3) of the National Heritage Resources Act (NHRA).<sup>1</sup>

To increase water storage capacity for the irrigation of vineyards, paddocks and gardens, the owners now propose expanding the existing farm dams lying to the north of the farmstead sited in the valley of a tributary of the Grootboschkloof stream. In the summer of 2016 the existing dams were empty and water had to be obtained from a dam on the neighbouring farm Buitenverwachting.

The proposed expansion involves several activities that required submission to be made to the Department of Environmental and Development Planning (DEADP) in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA) and the 2014 NEMA Environmental Impact Assessment (EIA) Regulations for a Basic Assessment process. Submission was made in March 2017 by SLR environmental consultants. As part of this process BlueScience freshwater ecologists prepared a freshwater impact report on the expansion of the dams. The dam expansion design was by ICE Group (Pty) Ltd. engineers.

Although it can be argued that the expansion of existing dams is an integral part of any agricultural landscape, in the context of this Cape Winelands Cultural Landscape which is seen to have global significance, it is viewed as an intervention that may impact on heritage resources. Section 38(1) of the NHRA is triggered as the proposed civil engineering and landscaping work will change the character of a site greater than 5000m<sup>2</sup>. Consequently a Baseline report was prepared and the standard Notification of Intent to Develop (NID) form completed and submitted to HWC. HWC responded to this submission in a letter dated 13 June 2017 confirming that a HIA was required satisfying the provisions of s38(3) with specific reference to the following:

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<sup>1</sup> Phase 1 of the HIA was prepared by Frik Vermeulen and Phase 2 by Aikman Associates: Heritage Management

- Impact to archaeological resources; and
- Visual impacts to the cultural landscape.

This draft HIA has been prepared in compliance with s38(3) of the NHRA and to facilitate the combination of public participation processes required in terms of both NEMA and the NHR Act.

## **2. METHODOLOGY**

Henry Aikman who undertook this study is an architect and accredited member of the Association of Professional Heritage Practitioners (APHP). The work involved site inspections, discussions with the environmental practitioners, civil engineers and landscape architects and some research using readily available published material.

## **3. STATEMENT OF INDEPENDENCE**

None of the consultants engaged in this study has any financial interest in the proposed development or any other projects undertaken by the owners.

## **4. LOCALITY**

Constantia Uitsig lies to the south of Cape Town in the Constantia Valley. Its main and public access is off Spaanschemat River Road, a scenic route which runs along the farm's south-eastern boundary. It has a minor private access point from Nova Constantia Road that forms part of its northeast boundary with a portion of Groot Constantia (see Figure 10 below). The farm is bordered by the wine farm Buitenverwachting on its western and north-western side, while the farmstead of Nova Constantia, a Provincial Heritage Site (PHS), is located to the north-east. A portion of Groot Constantia lies between the Nova Constantia site and a pocket of residential development. This lies on part of Constantia Uitsig's northeast boundary with access from Nova Constantia Road into Camellia Close.

A number of other historic wine farms, including Groot Constantia, Klein Constantia and Hope of Constantia are located further north. On the eastern side are the residential suburbs of Nova Constantia and Firgrove and further away are the suburbs of Sweet Valley and Belle Constantia. To the south is Tokai Forest, including the Porter Estate.

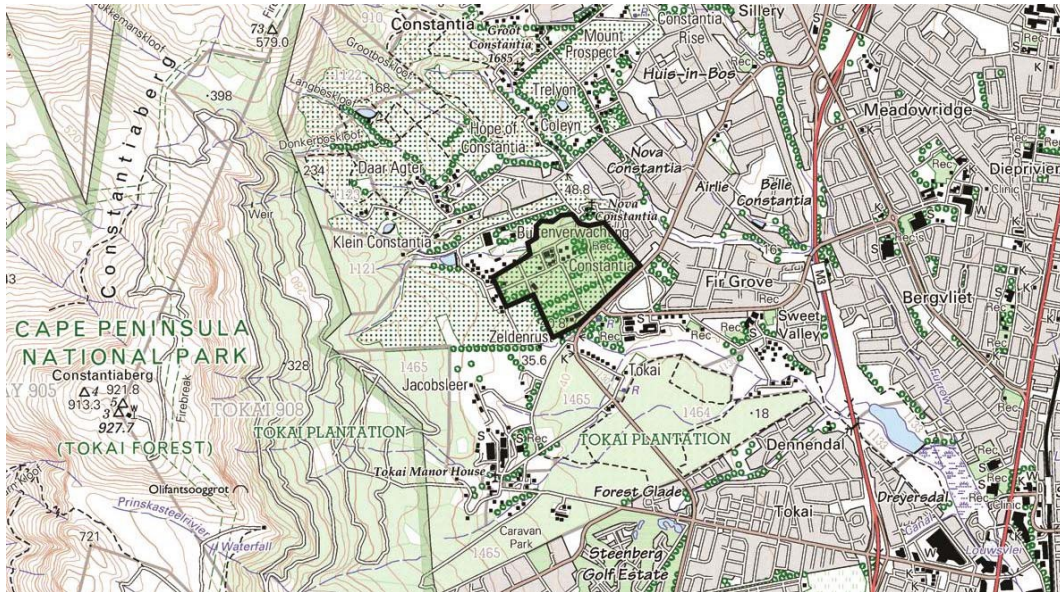


Figure 2: Locality plan

## 5. STATUTORY AND POLICY FRAMEWORK

The farm is 59.8ha in extent and is zoned for agricultural use in terms of the City of Cape Town's Planning Bylaw. It falls outside the Urban Edge in terms of the 2012 Southern District Plan. The construction of a dam is permitted in terms of these land use rights.

The Provincial Spatial Development Framework (PSDF) highlights the Province's unique agricultural resources, its biodiversity and its scenic and cultural resources. The construction of the proposed dam is in line with this policy as it will supply much needed irrigation to the farm's vineyards and gardens in this important part of the Cape Winelands.

The Integrated Development Plan (IDP) promotes the key objective of creating a sustainable environment through the efficient utilisation of resources. The proposed dam is in line with this objective.

The Metropolitan Spatial Development Framework (MSDF) stipulates that agriculture use should be conserved in the Constantia-Tokai Valley. The dam construction will contribute to this conservation and will support the expansion of this activity.

Constantia Uitsig falls within the Cape Winelands Cultural Landscape, a Grade I heritage site that has been identified by the SHRA Council. This Grade I site has not yet been formally declared in terms of s27 of the NHRA but as an interim measure a Memorandum of Agreement has been signed between SAHRA and HWC in terms of which SAHRA is a commenting body and HWC is the approving authority for all applications.



## 6. EVOLUTION OF THE SITE OF THE DAMS

In the detailed history contained in the Phase 1 HIA Report Frik Vermeulen traced the origins of Constantia Uitsig from being part of the original grant to Governor Simon van der Stel in 1685 to its creation as Constantia Uitsig in its present form as a subdivision of Buitenverwachting in 1914. In this report the focus is on the evolution of valley to the north of the existing farmstead, the site of the dams on Constantia Uitsig.

The earliest settlers at the Cape were primarily stock farmers who grazed livestock on the mountain slopes and the Cape Flats and who on a subsistence basis grew vegetables and fruit and cultivated a few vines to provide wine for their families and slaves. The areas initially cultivated were related to tributaries of the river systems or along the rivers themselves. The first of these was the Dutch East India's Company (VOC) garden in the centre of the first settlement. The farming pattern adopted by the VOC and the settlers was to construct weirs to divert the water and create a system of straight perched furrows along the sides of shallow valleys to practice flood irrigation of their crops. This was followed by the first "freeburgher" farms granted along the Liesbeek River.

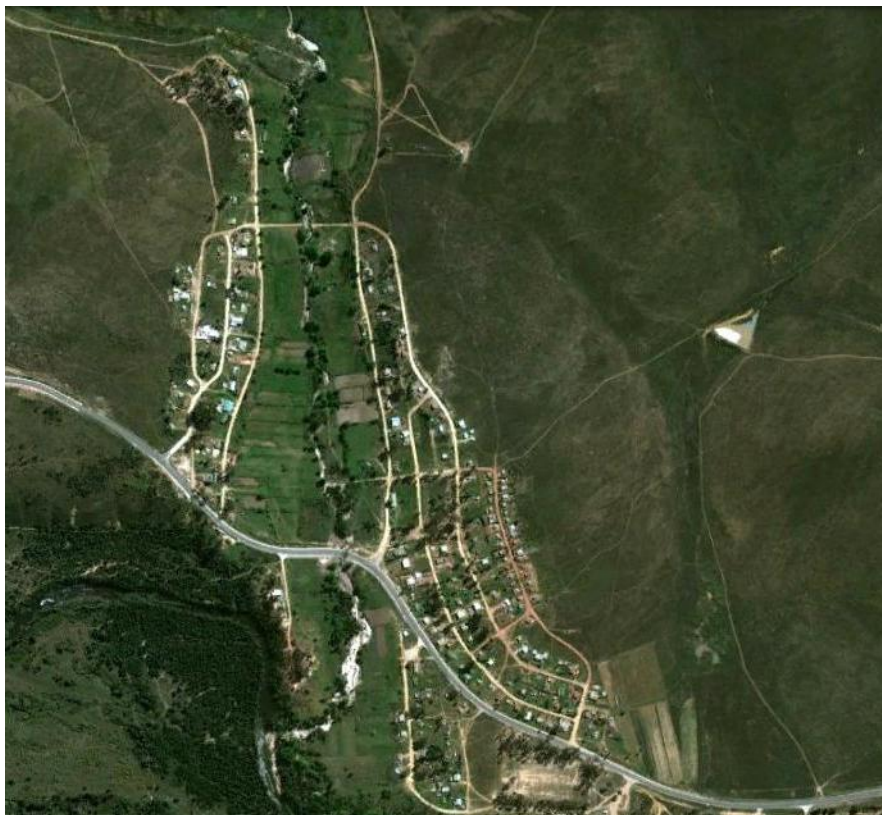


Figure 3: The "*leiwater stelsel*" at one of the Genadendal "*buitestasies*" still in use. As can be seen the natural stream flows down the centre of the valley with furrows along the sides of the roads. Sluices then control the irrigation of the plots below the roads

In Constantia the main rivers were the Diep to the north and the Spaanschemat to the south, fed by streams that rose on the slopes of the surrounding mountains.

The consequence of this system was that the original streams were significantly narrowed. The main furrows like the Spaanschemat furrow running from Witteboomen to Dreyersdal were usually lined with oaks. The labour for these systems was provided by slaves. This pattern is now only in use in mission stations such as Genadendal and its outstations. The earliest settlements employed the same system to water gardens to the rear of the dwellings and many of these are still in use.

This farming practice survived however in Constantia and Tokai until the 1960s and even the 1990's when urban development engulfed all but the farms up against the surrounding mountains.<sup>2</sup>

On Constantia Uitsig it was to survive more or less intact until the 1980s when the last of the four generations of Lategan owners replaced the orchards, vineyards and vegetable growing areas in the valley to the north of the farmstead with grazing camps for the horses boarded in his livery stables.

It is possible that the 18<sup>th</sup> Century owner of the farm, then part of Bergvliet, Hendrik Oostwald Eksteen, made use of this shallow valley and a tributary of the Grootboschkloof. His slaves may have built the weirs and dug the rectilinear pattern of furrows still discernible today. The Eksteens also owned Tokai and the flood irrigation system of what was known as "*die ondertuine*" where vegetables were grown, was in use by the Tokai Reformatory until that institution was closed in the 1990s.

The second of the Lategan owners of the farm, Willem Hendrik Lategan when he acquired the farm from his father, replaced the *phylloxera* diseased vines with fruit orchards and new vines.<sup>3</sup> He became a successful exporter of fruit and wine.

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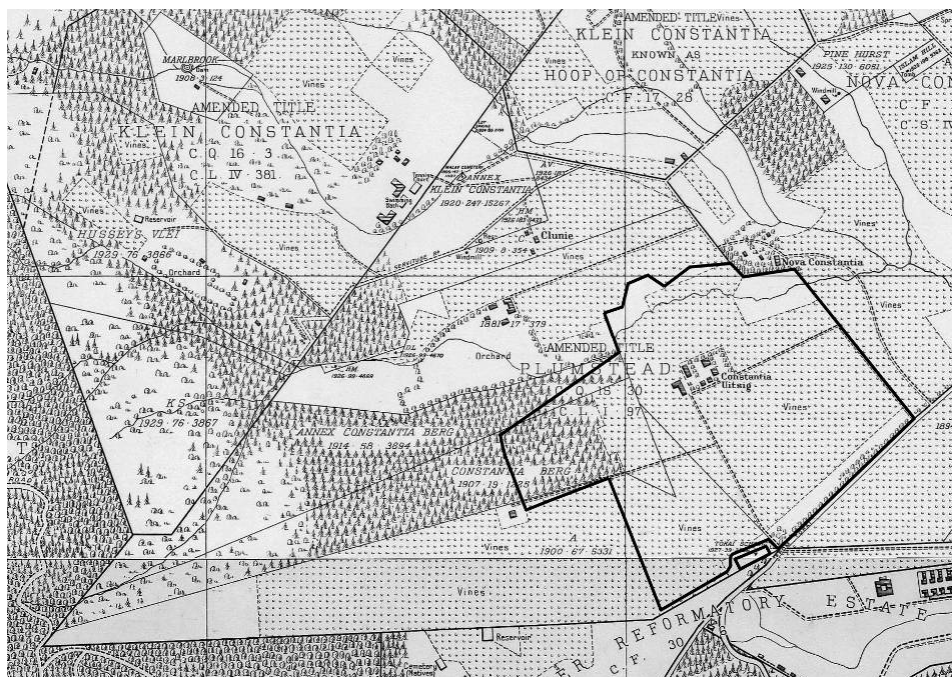
<sup>2</sup> Diesel powered pumps became available in the early 20<sup>th</sup> Century revolutionising irrigation systems and spelling the end of the ancient flood irrigation system.

<sup>3</sup> This global disease propagated by a root louse destroyed Cape vineyards from the 1860s reaching a peak in the 1880s when it was eventually identified. The Cape Colonial Government then began importing seed from phylloxera-resistant American grapevines and local nurserymen were able to graft vines onto this rootstock type



**Figure 4: Detail from the 1926 Aerial Survey. The arrows indicate the furrows**

The earliest aerial photograph of 1926 shows the entire valley under cultivation with the straight furrows clearly discernible with about half of the area being orchards and half vineyards. As shown on the survey map of 1931 (Figure 5) the valley to the north of the farmstead was being cultivated with orchards and vineyards. It should be noted that none of the three dams that now exist can be seen and the watercourse is shown inaccurately as a wiggly line.



**Figure 5: Detail from the 1931 survey map. The white areas were orchards and the dotted areas vines**



As shown in Figure 6, in 1945 vines and orchards were still present in the valley but the orchards to the northeast of the farmstead had been replaced with vines.

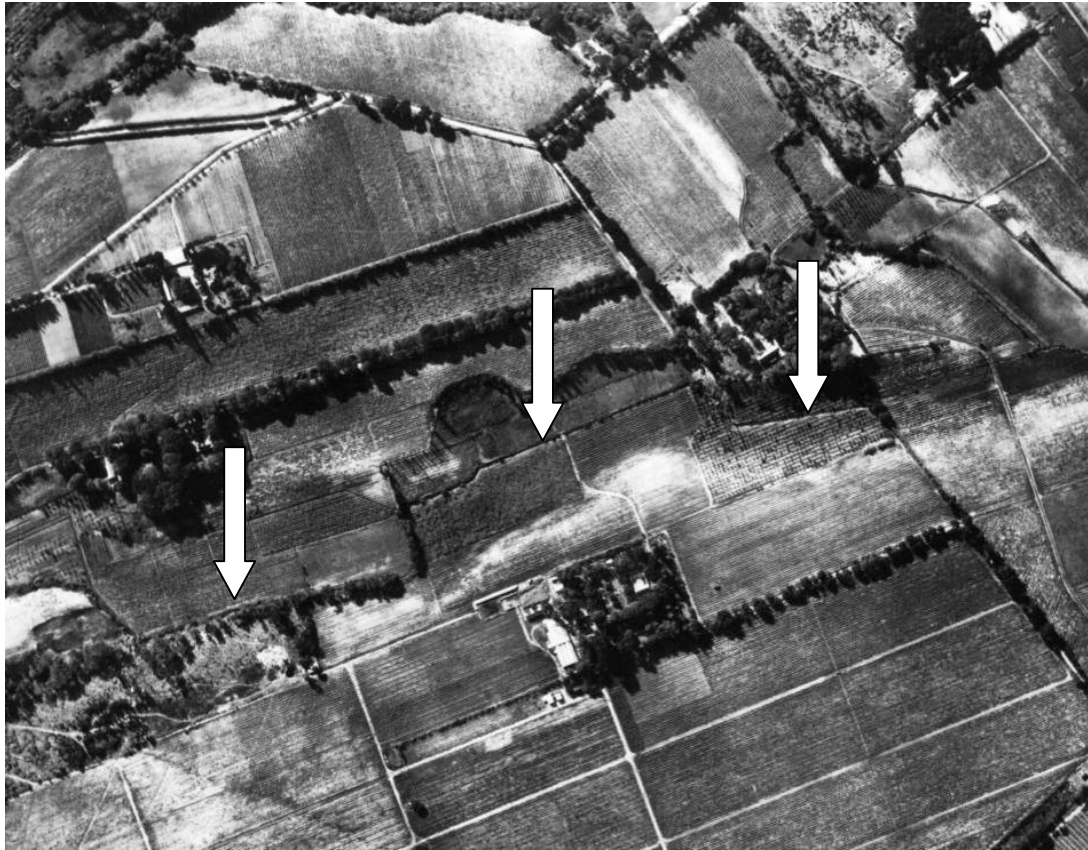


Figure 6: Detail from the 1945 Aerial Survey. The semi-circular wetland area can be seen

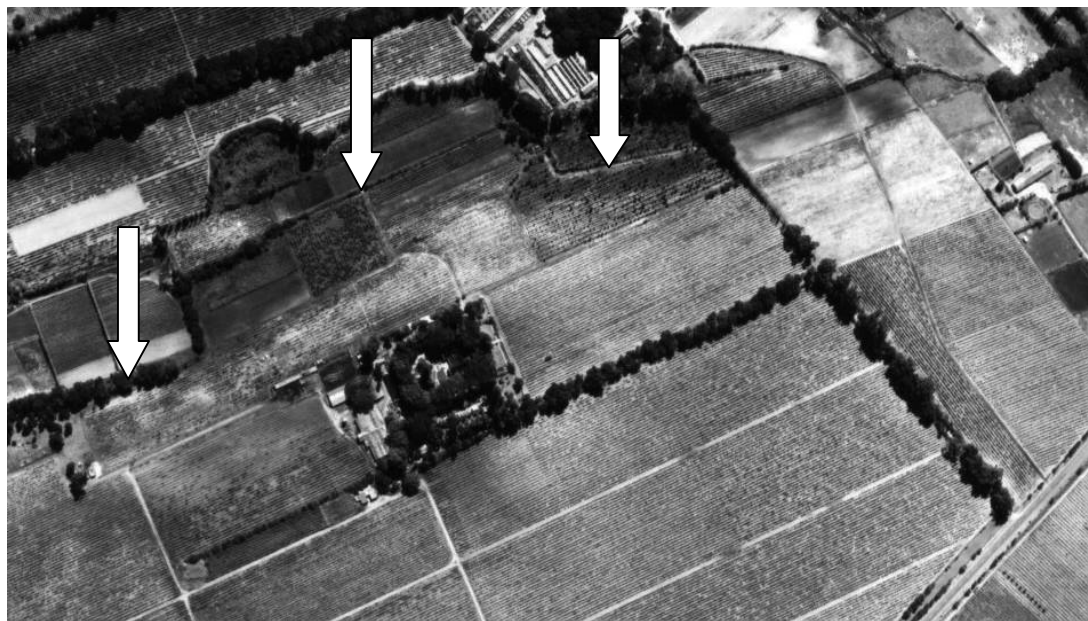


Figure 7: Detail from the 1966 aerial survey

The 1966 aerial survey shows some change in the pattern of cultivation of the valley with what appears to be vegetable production and a new square orchard replacing vines. The main dam can be seen so it can be assumed that this was constructed between 1945 and 1966. This enabled water to be pumped to the other parts of the farm. Prior to the dam being constructed it must be assumed that vines and orchards were farmed on a dryland basis.<sup>4</sup>

When Stephen Lategan inherited the farm in 1983 only a small block of table grapes was being cultivated and wine making had been abandoned. He established an equestrian centre on the farm, building a livery stable block for 82 horses. Paddocks and lunging rings replaced vines including those in the valley to the north of the farmstead which was divided up into grazing camps. Kikuyu grass was planted. Stephen Lategan's equestrian enterprise failed despite selling off a 43ha portion of the farm to neighbouring Buitenverwachting. Following the bankruptcy, the farm was acquired by Constantia Uitsig Farms (Pty) Ltd in 1988. The new owners set about re-establishing the farm as a prestige wine estate planting new vines and converting the homestead into a restaurant. Additional tourism uses were also established. The equestrian centre was scaled down with the valley still used for grazing and the water from the main dam being used for irrigation.



**Figure 8: 2017 Google Earth photograph showing the current state of the valley. The furrows are all heavily overgrown**

In 2014 Constantia Uitsig was sold to Meerenhof Properties (Pty) Ltd. They have commenced construction of the wine cellar and they plan to improve the current poor irrigation system.

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<sup>4</sup> Dryland farming and dry farming are agricultural techniques for non-irrigated cultivation of crops. Dryland farming is associated with drylands - dry areas characterized by a cool wet winter followed by a warm dry summer.





**Figure 9: The furrow has not been maintained and is overgrown. This is the section flowing towards the farm's eastern boundary**



**Figure 10: The furrow as it runs through a portion of Groot Constantia's vineyards surrounding the Nova Constantia farmstead with Camellia Close in the background. Here it is heavily overgrown with Napier grass<sup>5</sup>**

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<sup>5</sup> Napier grass *Pennisetum purpureum* was widely used by Cape vegetable farmers as windbreaks and a "pull" plant from the early 20<sup>th</sup> Century. Col. Napier of the Rhodesian Department of Agriculture introduced it from eastern Africa. It is still used at the Pollsmoor Prison gardens and in the Phillipi Agricultural Area. It seems likely that this colony is a remnant of the Lategan's vegetable production.





**Figure 11: View west with the furrow on the right and the Buitenverwachting homestead seen in the distance. Nova Constantia's stone pines are seen on the right**



**Figure 12: View east down the valley with Nova Constantia on a ridge beneath the stone pines**



**Figure 13: Main dam with furrow seen on the right of the Pampas grass. The rear of the Nova Constantia farmstead seen through the stone pines**





**Figure 14: The main dam which was probably constructed before 1966**



**Figure 15: Dam 2 is spring fed and lies to the north of the historic furrows**





**Figure 16: Dam 1 is also spring-fed and is to be retained as part of a wetland area**

## **7. HERITAGE RESOURCES**

It must be noted that Constantia Uitsig is one of the farms designated as being part of the Cape Winelands Cultural Landscape. In the assessment of the Phase 2 HIA dated 25 January 2016, HWC confirmed that the primary heritage resource of the farm is the Cape Winelands Cultural Landscape.<sup>6</sup>

Within this landscape are elements that are intrinsic to the landscape such as the vineyards, groves of old oaks, avenues and farmsteads like the nearby Buitenverwachting and Nova Constantia. The farmstead of Constantia Uitsig is not an intrinsic part of this but its vineyards and avenues of trees certainly are.

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<sup>6</sup> The Cape Winelands is an outstanding example of a cultural landscape enriched by influences accumulated from four continents (Africa, Asia and the East Indies, Europe and Northern America), natural elements ideally suited for viticulture and situated in a dramatic environment where a unique vernacular architecture developed. With its vineyards, orchards and fields and farmsteads, cellars, villages and towns, including the oldest city in South Africa nestling on the slopes of the Cape's mountains or on the plains along water courses, the Cape Winelands illustrate the impact of human settlement, slave labour and agricultural activities, and more specifically the production of the Cape wines, since colonialization in the mid 17th century on the natural landscape.

Source: <http://capewinelandsbiosphere.co.za/latest-news/21-cape-winelands-submitted-as-world-heritage-site>

The heritage or cultural attributes of a property within this Grade 1 landscape can for convenience be grouped into four main categories: aesthetic, historical, scientific/technical and social. The site of the proposed dam expansion is of historical significance and of scientific/technical significance because of its early irrigation design. As set out by the freshwater specialists in their study, the watercourse is considered to be of great ecological significance. It is put forward that the area where the dam is to be sited is of Grade II significance. The Nova Constantia farmstead is closely related to the site of the dam and is a PHS.

As set out in Section 6 the historic irrigation system is still in existence in the valley to the north of the farmstead and although not actively managed as it was in the past, still provides water to the main dam there. The two smaller dams are spring fed and are ornamental. This system possibly dating from the 18<sup>th</sup> Century is clearly of great heritage significance. It is put forward that the irrigation system is of Grade II significance because of the following values:<sup>7</sup>

- Its importance in the pattern of the history of the Western Cape;
- The uncommon, rare or endangered aspects that it possesses reflecting the Western Cape's cultural heritage;
- Its importance in demonstrating a high degree of creative or technical achievement at a particular period in the development or history of the Western Cape;
- Its significance relating to the history of slavery in the Western Cape; and
- Its ecological significance.

Also attached is the Description of Impacts as required by DEADP.

## **8. THE PROPOSED EXPANSION OF THE DAMS**

The redevelopment of the vineyards and gardens on the farm (especially in the initial stages of establishing the gardens) is estimated to require a water supply of 210 000m<sup>3</sup> per year. It is proposed that 160 000m<sup>3</sup> per year be obtained from surface water and the balance of 50 000m<sup>3</sup> by increasing the groundwater supply obtained from boreholes.

This would involve the expansion of two of the three small existing dams (storage capacity 10 500m<sup>3</sup>) to the north of the farmstead to provide sufficient water storage for the estimated water demand for the redevelopment of the farm. The third dam with a footprint of 4 500m<sup>2</sup> located upstream of the furrow would be retained in order to preserve the wetland above the dam

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<sup>7</sup> HWC's Guide to Grading

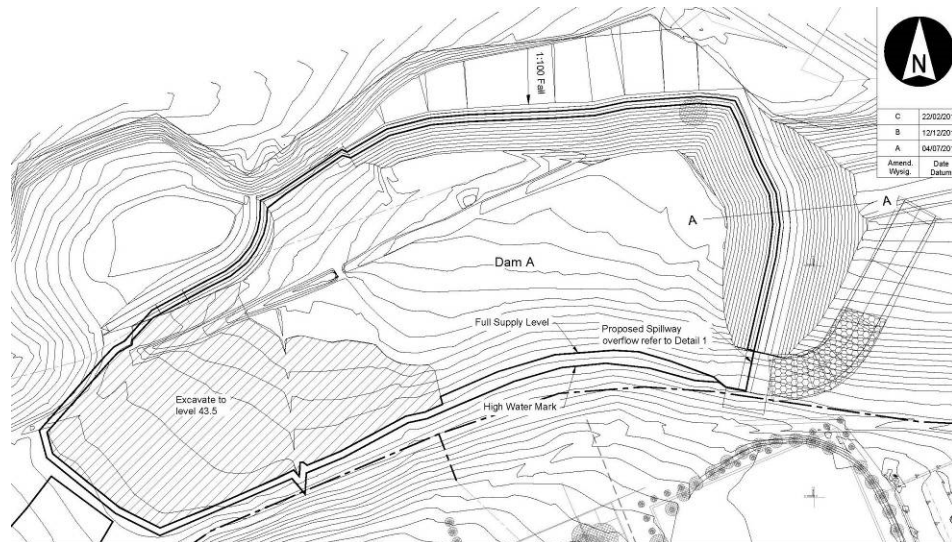
basin. The other two dams would be contained within the expanded dam. The dam would have a storage capacity of 120 000m<sup>3</sup>, its surface area at full supply level would be 3.4ha, its maximum wall height would be 12.5m, it would have a crest 3-4m in width and 172m in length and there would be a 17.5m wide spillway. A pump station and subsurface pipe system would draw water from the new dam. The landscape master plan prepared by Planning Partners shows proposed extensive wetland areas above and below the dam.

It should be noted that the wall of the dam would be 12.7m. This would give it a height of 47m above mean sea level, the same height as that of the site of the Nova Constantia farmstead.



**Figure 17: Drawing prepared by ICE Group (Pty) Ltd showing the proposed dam to the north of the farmstead**





**Figure 18: Plan of the dam prepared by ICE Group (Pty) Ltd. The old furrow is shown running diagonally across the northern part of the dam**



**Figure 19: Landscape Master Plan prepared by Planning Partners. As can be seen almost the entire area is to be extensively landscaped except for the area on the extreme left where part of the old irrigation furrow system will survive. The furrow on Groot Constantia will also remain intact**

## 9. IMPACT ON HERITAGE RESOURCES

### 9.1 Impact on archaeological resources

In 2015 a Notification of Intent to Develop form and Basic Assessment report was submitted to HWC by heritage practitioner Frik Vermeulen (Case 15031910GT0325E). This was triggered by the proposed relocation and replacement of an underground sewer exceeding 300m in length between Buitenverwachting and the Nova Constantia suburb (Camellia Close). The proposed sewer runs through the valley where the dams are currently

proposed. HWC's response was that *"as the ground had been actively farmed for many years...You are hereby informed that as there is no reason to believe that the proposed development will impact on heritage resources further processes under section 38 of the National Heritage Resources Act do not apply.*

This decision should therefore apply to the proposed expansion of the dams taking place in the same area.

### **9.2 Impact on the historic irrigation system**

Apart from a short section of the irrigation system on the farm's northwest boundary with Buitenverwachting and the section on Groot Constantia, (see Figure 19 above), the rest of the system will be lost in the construction of the dam and associated wetland landscaping.

### **9.3 Impact on the Nova Constantia farmstead**

The U-shaped complex is sited on a ridge immediately north of the Constantia Uitsig boundary. The complex turns its back on the valley where the dam is to be built with the main facade of the homestead and former cellar facing northeast. The cellar is T-shape with its tail extending towards the site of the dam. This rear side is screened by mature stone pines (see Figures 11, 12 and 13 above).



**Figure 20: The U-shape farmstead turns its back on the site of the dam and its orientation is to the north east. The T-shaped former wine cellar is the nearest element to the proposed dam**





**Figure 21: The north eastern side of the U-shape complex. The complex turns its back on the site of the dam. The former wine cellar is the closest building with its main facade facing north east**

Although the crest of the proposed dam wall will be close to the rear boundary of the Nova Constantia farmstead and at about the same level as the general level of the farmstead (47m above msl), with the extensive landscaping proposed it would have little visual impact on the complex. The stone pines also act as a visual screen.



**Figure 22: The T-shape former cellar extends towards the site of the dam and has a walled garden**

#### **9.4 Visual impact**

The key visual elements of the proposed dam will be the wall which rises to a height of 12.5m and the surface area of the water body which when full would be 3.4ha in extent. While the surface area would have a fairly large visual catchment including the Buitenverwaching homestead and Klein Constantia, the dam wall's visual catchment is limited to the area below the dam wall. The surface of the water body would not be visually intrusive as it is a typical element found in the Cape Winelands Cultural Landscape and similar to those found on Buitenverwaching and the other wine farms of

Constantia. With the proposed landscaping it should become a visually pleasing element.

The visual impact of the wall of the dam wall would be mitigated by the proposed landscaping as illustrated in Figures 23 and 24 below and as can be seen would have little or no visual impact.



**Figure 23: Current situation looking up the valley**



**Figure 24: Photo-montage of the dam wall with the wetland area below the dam. Photo-montage prepared by Hannes Bouwer Architects and Planning Partners**

### **9.5 Impact on freshwater resource**

The freshwater specialists using the Wetlands Offset Calculator determined that as the proposed dam would lead to the loss of existing wetland areas, there was a Wetland Offset Requirement of 10 000m<sup>2</sup> of wetland habitat within the two wetland areas above and below the dam.<sup>8</sup> They have

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<sup>8</sup> [Wetlands Offset Calculator](#), which is an Excel spreadsheet that helps the applicant to determine the wetland offset targets and assess potential gains for the receiving area in terms of contribution to wetland functionality targets, ecosystem conservation targets, species conservation targets. It is a tool that companies can use in the early planning stages of their

calculated that the target should be 2.6ha. The design by Planning Partners provides 4.3ha of wetland exceeding the target. In other words the environmental health of the river system would be significantly improved following construction and landscaping, enhancing the site's scientific significance.

## **10. SUSTAINABLE SOCIAL AND ECONOMIC BENEFITS**

The NHRA specifically refers to social and economic development.<sup>9</sup> In addition Section 38(3)(d) of the NHRA requires that the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development should be evaluated. The evaluation finds that although the remnants of an historic irrigation system will be lost through the construction of the dam, the social, economic and ecological benefits outweighs its significance.

The redevelopment of the vineyards and gardens on the farm (especially in the initial stages of establishing the gardens) is estimated to require a substantial increase of the water supply for irrigation. Currently only half of the 32ha of vines can be irrigated.

The proposed expanded dam and related landscaping will represent an investment of over R12-million. This will significantly improve the agricultural potential of the farm's vineyards and gardens with production being increased. It will support job creation in the farm's tourism enterprises related to the gardens, speciality shops and winery. At the macro-economic level Constantia Uitsig is already an important destination on the prestigious Constantia Wine Route. The current redevelopment of the farm will contribute to increasing the wine tourism market in Constantia and make a significant contribution to the Cape Winelands Cultural Landscape.

The dam and its proposed wetland areas will significantly improve the currently environmental degraded condition of this tributary of the Grootbosch River. The valley will be able to function ecologically again with benefits to indigenous flora and fauna.

## **11. PUBLIC PARTICIPATION**

A full public participation process is being undertaken by SLR Consulting in line with Regulation 41 of the EIA Regulations. The two HWC registered conservation bodies; The Constantia Residents' and Ratepayers' Association

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mining or other operations, to assess risks involved. South African National Biodiversity Institute: Biodiversity Advisor

<sup>9</sup> National Heritage Resources Act, 1999, Section 5(7)(d).

and the Simon van der Stel Foundation have been registered by SLR Consulting as interested and Affected Parties (I&APs) but will also have to be consulted independently as part of the NHRA process. The CoCT's Heritage Resources Section will also be consulted.

## **12. CONCLUSIONS AND RECOMMENDATIONS**

Most of the historic flood irrigation system will be lost except for a short section that will survive on the northwest boundary with Buitenverwachting and on a portion of Groot Constantia. This impact on an identified heritage resource is however outweighed by significant sustainable social and economic benefits related to vineyards of the Cape Winelands Cultural Landscape and improvements to the ecological functioning of the degraded tributary of the Grootbosch stream.