An Archaeological Desk-based Assessment and Field Investigation of Guyeau, St. Eustatius, Caribbean Netherlands

SECAR
Excavating the Caribbean's "Historical Gem"
The St. Eustatius Center for Archaeological Research

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An Archaeological Desk-based Assessment and Field Investigation of Guyeau, St. Eustatius, Caribbean Netherlands

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Client
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St. Eustatius, Caribbean Netherlands

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1. Introduction

In November 2017, the St. Eustatius Center for Archaeological Research was asked to conduct an archaeological desk-based assessment and field investigation of Guyeau by Robert Proper. The plan is to construct a hotel across the street from Knippenga Estate.

According to the Monuments Law BES article 1: monuments can be movable and immovable property, which are at least 50 years old and that are perceived of general interest because of their beauty, artistic value, their meaning for science, the history of the country or the value for their people, including archaeological heritage. The definition of archaeological heritage is in this case: buildings, objects or remains that, independently or jointly, and whether or not in the context of the location, indicate human activities that took place in the past, that are older than fifty years (wetten.overheid.nl).

The first step in the archaeological process is a desk-based assessment of the planned area of construction. In a desk-based assessment the archaeological expectancy of the planned area for development is determined by using landscape and culture-historical data. Field investigations, performed by a survey and several test trenches, are conducted to determine the nature, size and locations of the archaeological heritage in the designated area.

1.1 The reason and objective of this research

The reason for this research is that development is going to take place in the area. On the plot of land that is discussed in this research, Robert Proper plans to expand Knippenga Estate by constructing a hotel on the land across the street from Knippenga (Fig. 1).

The objective of this research is to predict the archaeological value of the piece of land by doing a desk-based assessment and to substantiate this by performing test trenches that will show the actual archaeological features that are still preserved. The outcome of this research will hopefully provide us with a detailed study of the spatial relationship between the archaeological structures.
1.2 The research area

The planned area for development is a piece of land on the eastern side of St. Eustatius, across the street from Knippenga Estate (Fig. 2). The planned area for construction that is discussed in this report is 104 meters long and 30 meters wide (Fig. 2). This area is only a small part of the complete property that will be developed in the future.

Figure 2: The piece of property that is up for the development. The hotel is in the bottom right corner on the northern side of the street. Source: Robert Proper.
2. Landscape and Cultural-Historical Framework

2.1 Geology and geomorphology

Within the Lesser Antilles there is an active volcanic arc and an arc of limestone islands (from Barbuda to Marie-Galante) on an old volcanic base. The Lesser Antilles is subdivided into the northern Leeward Islands and the southern Windward Islands. St. Eustatius is part of the active arc and is located in the northern part of the Leeward Islands. The island, located 17°28’-17°32’ N and 62°56’-63°0’ W, has a surface area of approximately 21 square kilometers (Fig. 8) (Roobol and Smith 2004, 36, 99; Westerman and Kiel 1961, 99).

St. Eustatius is comprised of three geomorphologic areas. The first area is the north-western part of the island, also known as the Northern Centers, which consists of an old volcanic landscape. The second one is the Quill volcano in the South. Finally, the third area is the plain between these two areas, also known as the “Cultuurvlakte” or agricultural plain (Westerman and Kiel 1961, 99).

Initially, the Quill and the Northern Centers were separated from each other. However, the deposits of volcanic eruptions have formed the flat part (Cultuurvlakte) between the Quill and the Northern Centers (Roobol and Smith 2004, 103; 249; 264).

The three geological units on Statia are the Northern Centers, the Quill and the White wall and Sugar Loaf formation in the south (Fig. 3).

The research area is located in the geological area of the Quill that predominantly consists of agglomerates, lapilli and tuffs (Fig. 3). The site lies in an area that is usually covered with trees, shrub vegetation such as the Acasia sp. and the invasive species, corallita, also known as Antigonon leptopus.

Figure 3: Schematic geological map of St. Eustatius (De Palm 1985, 182).
2.2 Historical context

From archaeological excavations it is known that indigenous people lived on the island during the 7th up until the 9th century AD. These people are known as Saladoid people. Earlier evidence of human presence is found sporadically around the island.

Christopher Columbus sailed by St. Kitts and St. Eustatius on November 13th in the year 1493. Columbus named the island *S. (Maria) de la niebe*; however, he did not land there. The Spanish were not interested in St. Eustatius and the other smaller Caribbean islands. The self proclaimed Spanish possessions in the Caribbean were extended over a too large area to be fully controlled. Therefore, the Spanish focused on holding their ports on the larger islands, the Greater Antilles.

When the Dutch revolted against Philip II, King of Spain, and started the Eighty Years’ War (1568-1648), they began to take a leap into the unknown and crossed the Atlantic Ocean. One of the main products for which the Dutch crossed the Atlantic Ocean was salt (Goslinga 1979, 20; Klooster 1998, 26; Postma and Enthoven 2003, 30-1). The smaller Caribbean islands were, because they were not defended by the Spanish, interesting for the Netherlands and other European countries to colonize and obtain a stronghold in the Caribbean (Dalhuisen et al. 1997, 76). Additionally, the Caribbean was an area the Spanish silver fleets would sail past, and the smaller Caribbean islands were perfect to spy on these fleets and perform an attack (Goslinga 1971, 54).

Since the year 1624, Dutch ships had already dropped anchor at St. Eustatius (Knappert 1932, 2). In 1629 the French had constructed a fort on the island, but left soon after occupation due to a lack of good drinking water (Dalhuisen et al. 1997, 76; Attema 1976, 17; Hartog 1997, 24).

On April 25th, 1636, Pieter van Corselles and his 40 colonists took possession of St. Eustatius. They rebuilt the French fort and called it Fort Oranje. One of the reasons for the colonization of St. Eustatius might be the high demand for tobacco. Jan Snoock promoted the island by telling that “good tobacco could be planted and vast profits could be reaped” (Attema 1976, 16; Goslinga 1971, 262; Klooster 1998, 32).

In the next twenty years of the colonial life of St. Eustatius the colonists started planting sugar instead of tobacco. This cultivation of sugarcane required enslaved Africans to work the land (Attema 1976, 17; Goslinga 1971, 263). Therefore, in the following years there was an increase in the number of inhabitants on St. Eustatius. By the year of 1665 there were “330 whites and 840 negroes and indians” residing on the island (Hartog 1964, 223). The trade in commodities and enslaved people drew international merchants to the island (Attema 1976, 16). This prosperous trade caused other countries to be envious and this marked the beginning of the turbulent history of St. Eustatius. In the years between the 1665 up until 1713, the island changed flags fourteen times between the Dutch, the French and the English (Dalhuisen et al. 1997, 76).

By the year 1715, eleven sugar plantations were back in business (Goslinga 1985, 131). Still, the island would never develop into a “full-fledged plantation” economy because of the lack of fresh water on the island (Enthoven 2012, 246). Simply not enough rainwater could be conserved with the use of cisterns to irrigate sugarcane fields (Miller 2008, 30). Instead, Statia became an international trading hub for the exchange of commodities and slaves. From the late seventeenth century until the year 1729, slaves were the main commodity of trade. However, from However, from 1730, sugar took over this position (Enthoven 2012, 293-4). The *kleine vaart*, the (illicit) inter-island trade between the many isles, was the main carrier for this commodity (Goslinga 1985, 189). St. Eustatius was in fact a “clearing station” for all the other islands that had to follow their countries monopoly system, which meant that a colony could only trade with its mother country (Hartog 1976, 40). The size of this illegal trade can be seen in the import and export numbers of sugar in St. Eustatius. In the
whole of 1779 the island produced 13,610 pounds of sugar, while it exported almost 25 million pounds of sugar (Goslinga 1985, 227). In that same year, 3,551 ships dropped anchor at St. Eustatius to trade and there were 3,056 people living on the island. It was during this time that St. Eustatius received the name “Diamond Rock” or “Golden Rock” (Goslinga 1985, 141; Hartog 1976, 41, 46).

When in 1776 the Andrew Doria was saluted by firing back the same amount of salutes it became the first nation that ‘recognized’ an American warship. The salute together with the ongoing trade with the American Rebels caused the English to declare war on the Dutch (Fourth Anglo-Dutch War 1780–1784). Therefore, on the 3rd of February, 1781, Rodney and his fleet sailed into the harbor of St. Eustatius and demanded the islands’ surrender (Hartog 1976, 86-7). Rodney plundered the island and even held the Dutch flag up for over a month to collect the booty from over more than 150 incoming ships (Goslinga 1985, 149).

St. Eustatius was returned to the Dutch in 1784 and the island once again knew a prosperous time. The recovery of the island, although short lived, can be seen in two things. First, the number of ships that dropped anchor in Orange Bay increased. During the year 1784, a total number of 2,100 ships had come to St. Eustatius, while in 1792, this was 3,500. Second, there was an increase in population size. In 1781, there were a total of 2,929 people living on the island. In the year 1789, there were a total of 8,102 people, of which 5,120 were enslaved Africans (Jordaan 2012, 2-3). In 1790 there were even 8,124 people residing on the island (Hartog 1976, 100).

The island’s trade declined after 1793, because the United Provinces were now at war with France (French Revolutionary Wars 1792-1802). After the French the island swapped another four times between the Dutch and the English until it permanently became Dutch in 1816.

It is known from historical records that a plantation was situated on the planned area for development. The first known map of St. Eustatius made by Alexander Lavaux, dates back to the year 1741 (Renkema 2016, 484). This map lists a plantation on the Guyeau area (number 43) (Fig. 4). In 1741, the plantation is owned by Pieter Hassel. Number 42 might also be on the property, since these houses did not necessarily depict a plantation.

![First known map of St. Eustatius that dates back to the year 1741. The plantation that is owned by Pieter Hassel is indicated by the red box. Source: Algemeen Rijksarchief 4.MIKO 339.](image1.png)

A copy of this map with updated information on plantation owners, made by Reinier Ottens in 1775, shows Guyeau to be owned by the widow of Pieter Hassel. Furthermore, not only house number 43
is owned by the widow of Hassel, also number 42 belongs to her now. Both the numbers are shown by the red rectangular (Fig. 5).

Figure 5: Updated map of St. Eustatius that dates back to 1775. The houses that are on the Guyeau property are indicated by the red box. Source: SECAR collection.

Following the English conquest of Statia in 1781, a map was made by P.F. Martin which shows all plantations existing on the island at the time in great detail. Guyeau is indicated as being owned by John Cuvilliers and Widow Hazel (Fig. 6). The latter might be an English derivation of the name Hassel. From this map it appears that on the property of Widow Hazel there were multiple buildings, an animal mill, a slave village and provisioning grounds. On the property of John Cuvilliers a slave village is depicted.

Figure 6: Map made by P.F. Martin in 1781. Guyeau is outlined in green. Source: SECAR collection.

On the map of the island made by William Faden in 1795, no plantation is visible at Guyeau (Fig. 7). This map does show the stone wall boundaries, but no structures are depicted.
After 1812, a map was made by W. Blanken on which all existing plantations are depicted. Nearly all plantations are indicated as rectangles on this map. It shows the plantation on the property of Guyeau to be owned by Spencer (Fig. 8). Number 11 might also be on this property; however, the placement is a bit off and therefore uncertain.
In 1829, Samuel Fahlberg, the Governor of the island at the time, made a map on which all plantations are depicted. This map now shows two plantations that are on the Guyeau property (Fig. 9). Both of them are indicated by two buildings. No information on the owners is shown on this map.

![Figure 9](image)

Figure 9: Map made by Samuel Fahlberg in 1829. Guyeau is outlined in green. Source: Algemeen Rijksarchief 4.MIKO 1706.

On the map made by A.H. Bisschop-Grevelink between 1839 and 1846, no buildings or structures are indicated (Fig. 10). This indicates that the possible multiple plantations that were on the Guyeau property fell out of use between 1829 and 1846. Only a cattle farm (L) that is located more towards English Quarter is depicted on the map.

![Figure 10](image)

Figure 10: Map made by A.H. Bisschop-Grevelink between 1839 and 1846. Guyeau is outlined in green. Source: Algemeen Rijksarchief, 4.MIKO 645.
The J.V.D. Werbata map, published in 1915, does show some plantation remains in the research area, such as slave walls. However, these slave walls do not conform to the property boundaries. The area is indicated as Behind the Mountain on this map (Fig. 11).

Figure 11: Map made by J.V.D. Werbata, published in 1915. Guyeau is outlined in green. Source: Algemeen Rijksarchief 4.MIKO 2107.

The KLM aerocarto map of 1963 shows the research area in more detail: the cistern is indicated, as are all the stone pile walls located in the area (Fig. 12). On this map the area is indicated as Guyeau.

Figure 12: The KLM Aerocarto map of 1963. Guyeau is outlined in green. Source: KITLV library, request number D A 44, 11.
2.3 Archaeological expectation

It is known from the previously discussed historical sources that at least one plantation can be found on the Guyeau property. Furthermore, the map that dates to 1781 shows a slave village on the piece of land that is owned by John Cuvilliers (Fig. 6). The archaeological expectation for this property is high in specific places, but most of the property seems to be used as meadow for animals or for the cultivation of sugar cane.

The research area that is discussed in this paper is only a fraction of the entire property as can be seen on Figure 1 and 2. The most detailed historic map of St. Eustatius, made by P.F. Martin in 1781, shows the research area to contain features identified by Gilmore (2004) as provisioning grounds (Fig. 6). Archaeological evidence of provisioning grounds was found by Stelten (2013) at Schotsenhoek plantation in the form of fence posts. Additional research on two sugar plantations (Fair Play and Benners) by SECAR and Leiden University have shown that Statian sugar plantations included many posts in ground structures, such as slave cabins, ditches, and fences that mark provisioning grounds. These provisioning grounds were used for the cultivation of crops, which provided the plantation with food.

Since the property is located in an area that is not accessed by many people on a daily basis and was covered by heavy vegetation, the expected integrity of the land is high. Therefore, organic and non-organic artifacts can be expected in situ.

In short, the archaeological expectation is high near the location of the plantation(s) and slave village and low for the rest of the property.
3. Field Investigations, Test Trenches

3.1 Introduction

When the property was inspected for the first time the vegetation was already cleared (Fig. 13). The proposed area has been surveyed by the author and a stone pile wall together with a collapsed cistern has been observed. To determine the nature of the site, several test trenches were dug across the site with a tracked excavator (Fig. 14). During the excavating, an archaeologist from SECAR was constantly present to make sure that the test trenches were dug properly, to identify archaeological features and to make sure that no archaeological remains were destroyed.

Figure 13: The area that is up for development (Photo: SECAR Staff).
The partially cleared research area has a total surface area of 3.120 m². A total of five test trenches were excavated across the property. Test trench 1 was 35 m in length, test trench 2 was 42 m in length, test trench 3 was 35 m in length, test trench 4 was 15 m in length and test trench 5 was 10 m in length. The latter was shortened due to the discovery of a bee’s nest that stopped us to continue working further with the excavator. Excavation was carried out using a 1.6 meter wide flat bucket. Two meter wide trenches are customary in the Netherlands; unfortunately a 2 meter wide bucket was unavailable. However, research has shown that wider trenches of, for example, 4 meters don’t proportionally increase the number of discovered features (Haneca et al. 2016, 51). Continuous trenches are the chosen pattern, as research has indicated that there is only a minimal difference in discovered features compared to other trench patterns. Continuous trenches, however, are the quickest and most cost-effective pattern and are therefore preferred. The first three test trenches were laid parallel to each other with a distance of 12 m in between the trenches. The last two trenches were laid on the other side of the cistern to get a complete coverage of the area. Trenches 4 and 5 are laid in line with test trench 2 and 3. Therefore, the test trenches are in a continuous pattern with the cistern dividing two trenches.

The test trenches comprise a total of 219.2 m² or 7.03% of the total research area. This is within the range that is customary in Dutch archaeology, which is 7% - 10% of the total research area (in France it is 10%, in England 5%). The 7% - 10% range generally provides sufficient information to make an estimate of the research area’s archaeological potential, quality, and further research required (Haneca et al. 2016, 54). According to De Clercq et al. (2011), using sufficient coverage is essential to gain a good understanding of the extent and nature of human occupation in rural areas. Research has indicated that within test trench coverage in the range of 2.5% - 20%, the proportional difference in detected features does not vary; therefore 7% is deemed a sufficient area to be excavated (Haneca et al. 2016, 46).
A Leica TCRP 1203+ Total Station was used to map the trenches, the cistern and the stone pile wall. Additional data from the cistern is collected by using the form described in van Keulen et al. (2017). The form includes the geographical location, the overall measurements, the description of its materials and its function, and photographs. Measurements were being taken with the use of two tapers, one of 20 metres and one of 8 metres. A ladder was used to descend into the cistern. The scale of 0.5 metres and the north arrow were included in the photographs of the cisterns. Photographs were taken using a Nikon D5300 digital camera.

Plough zone artifacts were collected in 5 meter sections. Roughly one meter wide profile sections are recorded every 10/15 meters and drawn at a scale of 1:10. Sectioned features are drawn at a scale of 1:10. Artifacts are conserved and stored at the SECAR storage facility.

3.2 Results

The results of the test trenches have yielded less archaeological remains than previously anticipated. The map that dates to the year 1781 by P.F. Martin shows provisioning grounds on the spot on which the hotel is to be constructed. As mentioned before, the archaeological remains that appear the most at provisioning grounds are postholes. After excavating the trenches very few features and artifacts were found in the five trenches. An overview of the five trenches can be found in appendix 1. Below, these five trenches, the cistern and stone pile wall are plotted on Google Earth (Fig. 15).

![Figure 15: Trench overview plotted on Google Earth.](image)

Photographs of trench 1 to 5 are shown below (Fig. 16; Fig. 17; Fig. 18; Fig. 19; Fig. 20).
Figure 16: Trench number 1. From left to right: trench 1 looking north, trench 1 looking south. Photos: SECAR Staff.

Figure 17: Trench number 2. From left to right: trench 2 looking north, trench 2 looking south. Photos: SECAR Staff.
Figure 18: Trench number 3. From left to right: trench 3 looking north, trench 3 looking south. Photos: SECAR Staff.

Figure 19: Trench number 4. From left to right: trench 3 looking north, trench 3 looking south. Photos: SECAR Staff.
Very few artifacts were found during the excavation of these test trenches. Only test trenches 1, 4 and 5 yielded artifacts. Trench 1 at 5-10 metres, starting at the south of the trench, contained a piece of petrified coral (Fig. 21). Trench 4 at 0-5 metres, starting at the south of the trench, contained a piece of yellow brick, slipped redware, salt glazed stoneware, shell, blue hand painted porcelain and red coarse earthenware (Fig. 22). Trench 4 at 5-10 metres, starting at the south of the trench, contained yellow bricks (Fig. 23). Trench 5 at 0-10 metres, starting at the south of the trench, contained yellow bricks and a piece of salt glazed stoneware (Fig. 24). Trench 5 at 5-10 metres, starting at the south of the trench, contained a red coarse earthenware bowl rim and the top of a salt glazed stoneware bottle (Fig. 25).
Figure 23 (Left): Yellow bricks. Figure 24 (Right): Yellow bricks and salt glazed stoneware. Photos: SECAR Staff.

Figure 25: Piece of red coarse earthenware rim and the top of a salt glazed stoneware bottle. Photo: SECAR Staff.
For the total of five test trenches only four features were found in the soil (Fig. 26). Of these four features, only two features (feature 2 and 4) were deeper than 5 centimeters and could, therefore, be sectioned (Fig. 27).

![Figure 26: Feature plans. Top row from left to right: feature 1 and 2. Bottom row from left to right: feature 3 and 4. Photos: SECAR Staff.](image1)

![Figure 27: Sections of the features. From left to right: feature 2 and 4. Photos: SECAR Staff.](image2)

Profile drawings were made for trenches 1, 2, 3 and 4. A profile drawing of trench 5 was impossible due to the large amounts of rocks in the soil. Trench 1, 2 and 3 have two profile drawings of a meter wide. These profile drawings are enclosed in appendix 2. Photographs were taken before drawing the profiles (Fig. 28; Fig. 29; Fig. 30; Fig. 31; Fig. 32; Fig. 33; Fig. 34).
Figure 28 (Top left): Trench 1, profile 1, 2-3 m. Figure 29 (Right): Trench 1, profile 2, 32-33 m. Figure 30 (Bottom left): Trench 2, profile 1, 3-4 m. Photos: SECAR Staff.

Figure 31 (Top left): Trench 2, profile 2, 39-40 m. Figure 32 (Right): Trench 3, profile 2, 32-33 m. Figure 33 (Bottom left): Trench 3, profile 2, 3-4 m. Photos: SECAR Staff.
The only structure, besides the stone pile wall, that is found in the research area is a cistern. This cistern conforms to the typology made by van Keulen et al. (2017) and can be defined as a type 3, subtype i, cistern (Fig. 35). The form that contains all the measurements and descriptions can be found in appendix 3.

A type 3 cistern is a cistern that is ‘mostly underground’. This means that the basin is dug into the ground and that part of the cistern (usually the arch) is visible above ground. Type 3, subtype i, is a cistern with an opening that extends to one of its sides (Fig. 35). The opening is placed above a corner of the basin. The basin of the cistern, which is rectangular, is made of basalt stones that have been plastered for the containment of water. The basin could probably hold up to approximately 24,500 liters of water.

The extension towards one of the sides of the cistern is constructed of hewed basalt stones. This also applies to the front and the back of the cistern. The arch, which has collapsed into the cistern, is constructed of a combination between bricks and basalt stones. Only two other cisterns that can be found on this island conform to the same typology.
Figure 36: The cistern at Guyeau, type 3i, seen from the west. Photo: SECAR Staff.

Figure 37: The cistern at Guyeau, type 3i, seen from the south. Photo: SECAR Staff.
Figure 38: The cistern at Guyeau, type 3i, seen from the east. Photo: SECAR Staff.

The water catchment is visible on the southern and western part of the cistern. A water inlet hole can be observed on the west side of the cistern. The cistern itself is in a poor condition, the roof has collapsed inside the cistern and the catchment area is completely broken. The basin is full of dirt and rocks but does not show large cracks.

3.3 Recommendations

The largest part of the research area contains little to no archaeological remains. Therefore, further archaeological research is deemed to be unnecessary. The cistern and the stone pile wall, however, are a different matter. There are three recommendations for the cistern. Firstly, the cistern could be incorporated into the plans and could be (partially) restored or left as a ruin to amplify the historic character of the property. Secondly, if the cistern is not to be incorporated into the design, coverage of the cistern with sand would be an option. By doing so, the cistern does not need to be destroyed. Thirdly, if this is not possible and the cistern is to be destroyed, further excavation is preferred to record all the possible archaeological information.

Further investigation of the stone pile wall is also recommended by clearing vegetation and creating an aerial photo mosaic.
**Bibliography**


Appendix 1: Overview of trenches
Appendix 2: Overview of profiles
Appendix 3 Cistern Form
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<table>
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<tr>
<td>Water inlet 2 height</td>
<td>-</td>
</tr>
<tr>
<td>Water inlet 2 width</td>
<td>-</td>
</tr>
<tr>
<td>Water inlet 3 height</td>
<td>-</td>
</tr>
<tr>
<td>Water inlet 3 width</td>
<td>-</td>
</tr>
</tbody>
</table>
### Materials

<table>
<thead>
<tr>
<th>Type of stone/brick</th>
<th>Basalt stone, yellow and red bricks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of lid</td>
<td>-</td>
</tr>
<tr>
<td>Sample of mortar taken</td>
<td>No</td>
</tr>
</tbody>
</table>

### Description

<table>
<thead>
<tr>
<th>Exterior shape</th>
<th>Rectangular with straight corners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior shape</td>
<td>Rectangular with straight corners</td>
</tr>
<tr>
<td>Shape of opening</td>
<td>Square-like</td>
</tr>
<tr>
<td>Presence and number of steps</td>
<td>-</td>
</tr>
<tr>
<td>Length, width and height of the stairs. Also the length of the steps.</td>
<td>-</td>
</tr>
</tbody>
</table>

### Function

<table>
<thead>
<tr>
<th>Status (used/unused)</th>
<th>Unused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet/dry</td>
<td>Dry</td>
</tr>
<tr>
<td>Condition</td>
<td>Poor, roof collapsed into the cistern; multiple stones missing</td>
</tr>
<tr>
<td>Type of water collection</td>
<td>Water catchment</td>
</tr>
<tr>
<td>Method of water extraction</td>
<td>-</td>
</tr>
<tr>
<td>Type of associated building</td>
<td>-</td>
</tr>
</tbody>
</table>

### Comments

Possibly additional water inlets, but these may have been destroyed.