# Preliminary report on the excavation at Usli, North Sudan

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During the initial season two principal goals were attained: first round of survey of modern village of Usli, and documentation and small-scale excavation of the central Usli site (Site 1) with most diagnostic remains of past cultural activities in the area. During the work of the mission, several ancient places have been found within the village of Usli and it is strongly recommended to prevent further building activities at and around Site 1, 2 and 3 (see below) which comprise important architectural remains of ancient occupations starting during early Kerma and reaching down to Meroitic period.

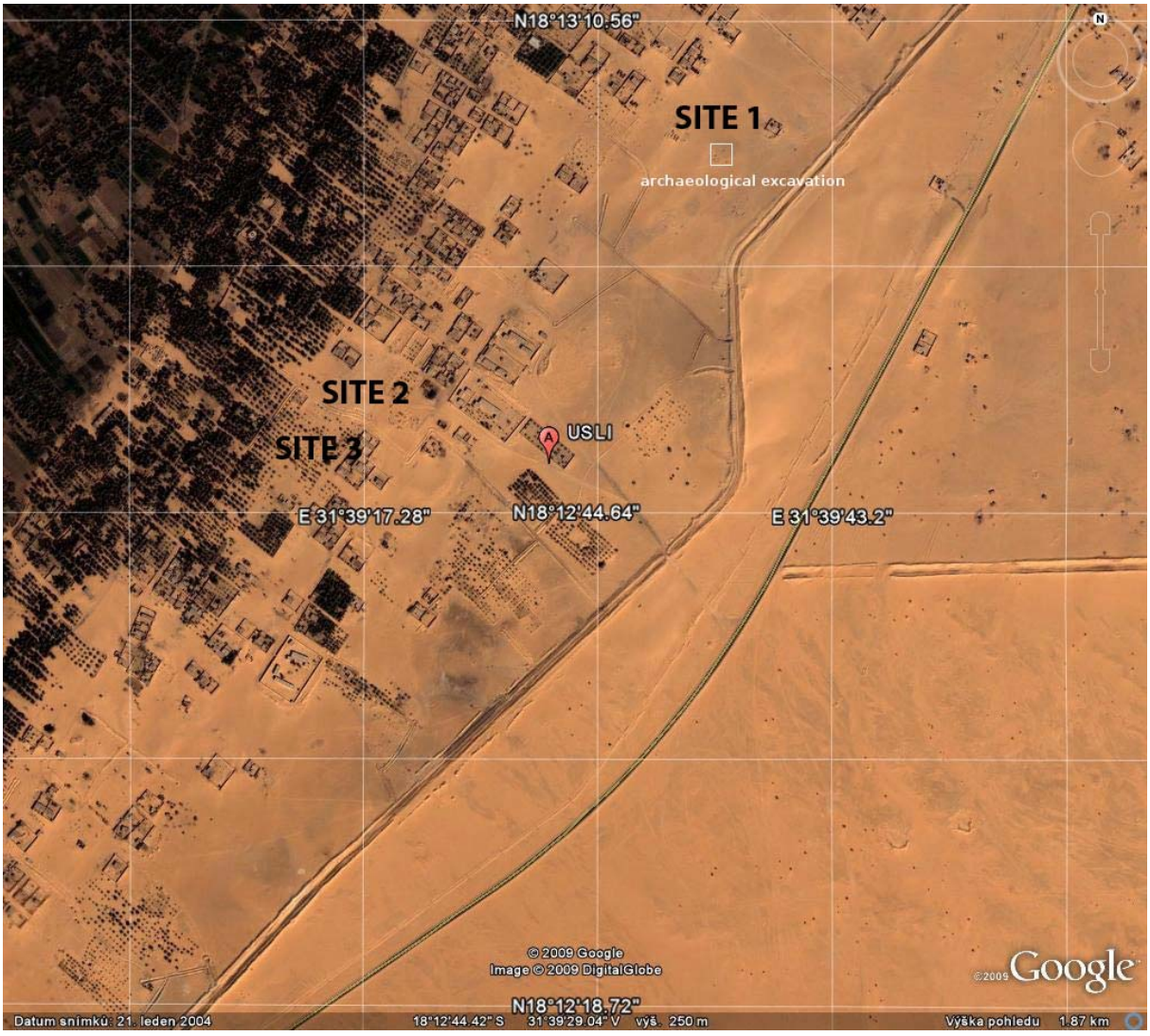



Fig. 1: Usli with principal sites ( Site 1-3) identified during the 2009 season

**1. Excavation, Site 1**

The best visible and on the surface discernible part of ancient site of Usli is located between the modern village of Usli and the asphalt road. It covers an area of about 300 x 200 m. The site is dominated in its central part by a scatter of sandstone blocks and remains of several sandstone column bases and drums. It is this part of the site that has suffered most from illicit excavation and modern robbers.

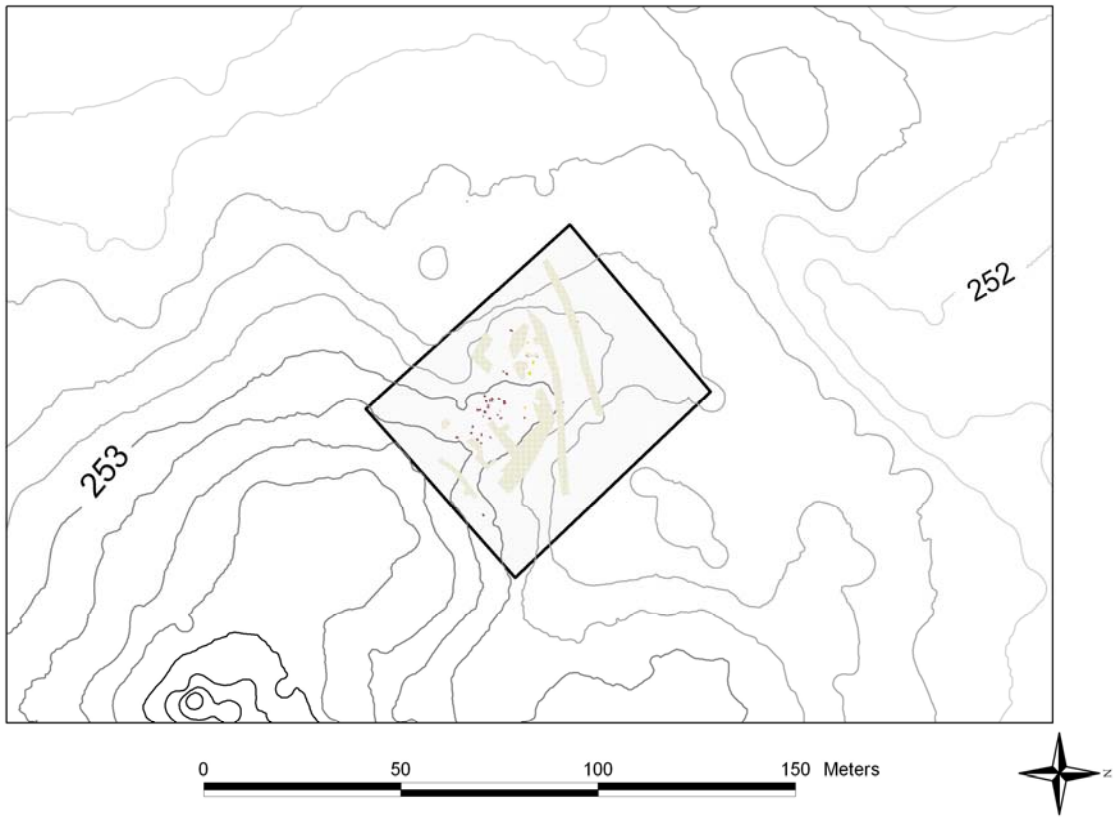



Fig. 2: Usli, Site 1, contour plan with location of the temple in the centre

Excavation was carried out in three 10 x 10 m squares with controlled cross-sections in between (Squares 1, 2 and 3). They revealed part of much destroyed architecture of a most likely Napatan temple. The results attained so far are incomplete, yet they allow already at this stage to outline some basic characteristics of the building. The temple was built on a large sandstone floor and consisted most likely of three divided areas. The first one (Square 1) was much destroyed and was on the northeast enclosed by a wall built of rubble and sandstone chips, 30 cm high and about 42 cm. The area between the wall and the stone pavement is 2.10 m wide and takes shape of an outer corridor around the temple. The Square 2 shows traces of the original sandstone wall running in an NE-SW direction, 1.10 m wide and preserved to a height of 0.35 m. It is built of blocks of 70 x 46 x 35 cm. It was

broken by a entryway giving way to the second room, 1.85 m long. In the second room a small libation basin of 36 x 30 x 20 cm was found in situ.

Among the most significant individual finds belongs base of a royal statue made of granite (Excav. No. 8/1/2009). It was found in Square 1, standing on the paved floor, oriented NE-SW. Of the statue only the base and the feet of a striding male king have been preserved. The basic dimensions of the statue are 60 x 32 x 18 cm. The back pillar preserves remains of a hieroglyphic inscriptions ...p mrj-Ra '...p, beloved of Ra'. In the same context was found a fayance amulet of the *wdjat*-eye (Excav. No. 9/1/2009). From both Square 1 and 2 originate several small sandstone fragments with hieroglyphic inscriptions or reliefs (Excav. Nos. 1, 2, 7, 10, 13, 14, 15).



Fig. 3: Site 1, Squares 1–3



Fig. 4: Site 1, Square 2, view from the northwest

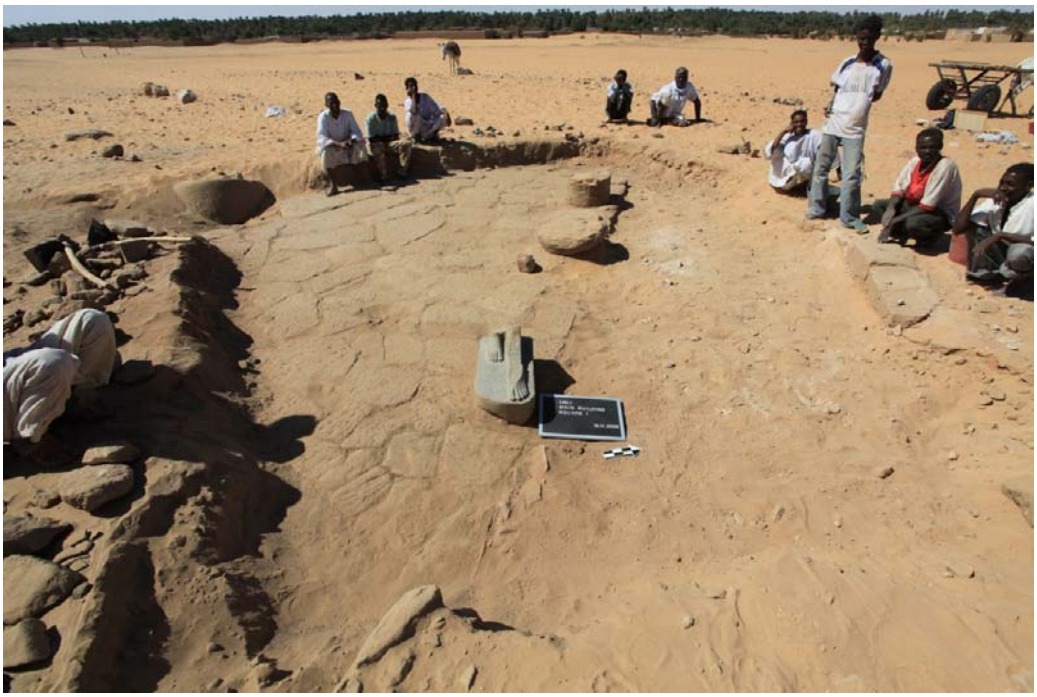


Fig. 5: Site 1, Square 1, find of the 25th Dynasty king

**2. Survey of the modern village**

During the first survey of the modern vilage of Usli lying to the west of the excavation site, several places with clear ancient monuments have been identified. They are as follows:

*1. Ancient well with walls lined with sandstone blocks.*

This well is located on a mound build during the earlier 20th century in order to protect the modern village from the Nile floods.

Coordinates: N 18˚13´26.8´´ E 031˚39´19.0´´



Fig. 6: Ancient Well 1

*2. Ancient well with walls lined with sandstone blocks.*

Coordinates: N 18˚13´13.8´´ E 031˚39´20.7´´



Fig. 7: Ancient well 2

*3. Ancient well with walls lined with sandstone blocks*

Around the well sandstone blocks.

Coordinates: N 18˚13´09.5´´ E 031˚39´17.3´´



Fig. 8: Ancient well 3

*4. Area around the old mosque of Usli village*

In the close vicinity of the mosque were found several reused or lying on the surface blocks of sandstone, at least one of them was originally decorated.

Coordinates: N 18˚12´59.0´´ E 031˚39’13.1‘‘





Fig. 9: Area around the mosque

*5. Site of Usli 2*

Site 2 has never been excavated, on the surface Meroitic and post-Meroitic pottery. On the surface are visible crowns of mudbrick walls and scattered sandstone blocks and chips. The area is disappearing under approaching modern settlement.

Coordinates: N 18˚12´51.9´´ E 031˚39’18.6‘‘



Fig. 10: Usli, Site 2

*6. Site of Usli 3*

Site 3 has never been excavated, on the surface Meroitic and post-Meroitic pottery. On the surface are visible crowns of mudbrick walls and scattered sandstone blocks and chips. The area is disappearing under approaching modern settlement.

Coordinates: N 18˚12´48.1´´ E 031˚39’15.9‘‘

**Conclusion: We recommend to control building activities especially at Site 2 and 3 before archaeological excavation will take place.**

## 3. Restoration examination of the decorated tombs at Kurru

Both tombs were viewed during a brief visit on 17.11.2009. They were inspected without access to the ceilings and upper parts of the walls.

Notes on original techniques listed below are by no means complete.

The condition described below records the state of preservation of the tombs at the time of the visit.

### Tomb of King Tanwetamani

This tomb has two chambers with vaulted ceilings, connected by a vaulted door. The floor slopes gradually towards the far end of the tomb. The tomb gradually widens.

*Existing condition and notes on original techniques*

The tomb is carved into rough sandstone., which varies in grain size and colour. The tomb has suffered flood damage in the past, which has eroded most of the painted decoration up to a height of 1.60 m from the floor.

There is structural damage to the top of the vaulted doorway where section of stone is missing.

The painted decoration is executed on two layers of lime and sand plaster, which vary considerably in thicknes. The lower layer is grey in colour, the top one is finer in texture and pink in colour.

The thickness of both layers was estimated at 10 to 30 mm, although it is possible that it is thicker in some areas.

There are several areas of detached plaster. These are located mainly close to corners and are not extensive. However, they are fragile and in danger of falling off.

The condition of the painted surface is generally fair. The entire surface is dusty and covered in cobwebs. There are pitted losses throughout, caused by grains of sand falling off the surface. Larger plaster losses are located throughout the walls.

The ceiling is better preserved by comparison.

Extensive grey staining is present on the wall, which is found in spots, lines or roughly circular shapes. This appears to be mould, which had probably appeared after the flooding

when the humidity in the tombs was high. It was not possible to ascertain during the inspection if the mould is still active.

The walls are disfigured by termite trails, which are about 1 to 2 mm deep.

Dark brown wasps nests, made by the insects from mud, and white papery nests made by other type of insect, are also found on the walls.

Two areas of salt damage are visible high up on the walls. These were not accessible at the time of inspection and could not be tested. These efflorescences measure approximately 30 by 40 cm.

At the far end of the main chamber there are cracked mud deposits found within the flood damaged lower parts of the walls.

The binder used for the execution of the wallpainting is not known at present but the paint is highly water soluble. White background, which appers to be limewash, is slightly more stable than the yellow, red and black pigments. Blue pigment, which is present on the ceiling of the main chamber and covers approximately 2 square metres, was not closely examined. This type of pigment has large particle size, is often underbound and as a result prone to loss.

*Conservation treatment proposal*

The tomb could be conserved in 2 to 3 phases, each lasting several weeks, depending on the number of conservators available.

Access from a suitable scaffold would be needed to reach the ceiling and the upper parts of the walls. The tomb would need a reliable supply of electricity.

The team of conservators would ideally be made up of 1 to 2 specialised wallpaintings conservators, one assistent conservator and one person recording the condition and treatment. Cooperation with a local conservator would be desirable to exchange knowledge and lay grounds for possible future projects.

There are many ways of documenting the treatment, which could be presented in a separate proposal, using examples of other comparable projects. From previous experiences of this conservator the clearest way of recording treatment is by visual means, where different interventions are digitally mapped into photographs.

Professional quality photographs would need to be taken of the entire tomb, recording the condition before and after the treatment. Any treatment and intervention would also be recorded photographically during conservation.

The areas of fallen stone above the door would be secured by several stainless steel pins or dowels, set in with polyester resin. Cracks in the stone would be further consolidated by injecting suitable synthetic resin.

Bulging and loose plaster would be grouted and strenghtened where necessary by appication of a suitable consolidant.

The general cleaning of the painted surface should then be carried out using dry methods. Small area of typical painted surface was tested during this inspection using soft brush for removal of cobwebs and dust, and WISHAB sponge for general cleaning. It proved suitable and fast

Grey mould was also tested during the inspection. It was first treated with ethanol, which should neutralise any live spores. After drying the mould was partially removed with WISHAB sponge. Further test was done by application of 30 percent hydrogen peroxide to the areas darkened by the mould. It may not be possible to remove the remnants of the mould completely but it can certainly be reduced by using this method.

Wasps nests would be removed mechanically with the aid of ethanol. The white insect nests would be removed mechanically.

The two areas of salts efflorescence would need to be tested for solubility and removed. Ideally, this would be done mechanically without using solvents, but it may be necessary to utilise solvent based methods with extreme caution.

After grouting, consolidation and cleaning the edges of losses would be secured by application of lime and sand plaster, inobtrusively colour matched.

The termite damage could also be filled with lime and sand plaster. However, the decision to fill or not to fill should be made during the conservation treatment, based on the visual appearance of the walls after filling the larger losses.

Where necessary, underbound or peeling pigment layers may need to be consolidated.

The wallpaintings would not require application of protective coating or any form of retouching.

**Tomb of Shabatako**

This tomb was examined more briefly than the Tomb of Tanwetamani.

Measurements were not taken, but this tomb is considerably smaller, with a lower ceiling.

The original techniques correspond to Tomb of Tanwetamani.

The flood damage is also comparable.

The general condition, however, is much worse than of the other tomb. Many more plaster losses are present and termite damage is more extensive. There is one large structural loss, which includes a deep hole in the stone.

In the upper parts of the wallpaintings the white background has discoloured to grey and the hieroglyphics only show as ghost images in white. This may be due to underbound gritty blue pigment falling off in the past. This areas needs to be examined closely before drawing any final conclusions.

There is evidence on one wall of previous restoration in the form of cement fills, which follow the edges of plaster losses. If possible, documentation of this restoration should be found.

Conservation treatment would follow the above.

**Suggested list of conservation materials**

Structural consolidation of stone: steel pins or dowels, polyester resin

Structural consolidation of plaster: grouting materials such as PLMA, terrako or trass SYTON or Plextol B500

Plaster filling: lime putty and local washed sand

Pigment consolidation: Primal AC 35

Surface cleaning: WISHAB sponges, range of organic solvents for local cleaning if necessary

Mould treatment: ethanol or specialised mould removal material suitable for wallpaintings

**Suggested analysis**

Analyses of the materials listed below would facilitate better understanding of the original techniques and the types of damage the tombs have suffered in the past. It would also make easier any decision making about possible conservation treatment: type of sandstone, type of original plaster, painting binder, pigments, types of salt efflorescence, type of mould.