

Hunter Power Project
Heritage Impact Mitigation

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EXECUTIVE SUMMARY

Snowy Hydro Limited is developing the Hunter Power Project, a gas fired power station near Kurri Kurri, NSW (the Project).

New South Wales Archaeology Pty Ltd has been commissioned by Snowy Hydro Limited to undertake a program of heritage impact mitigation for the Project. This report documents the works undertaken and results.

The work has been conducted in accordance with the impact mitigation measures set out in the Cultural Heritage Management Plan (CHMP) prepared for the project.

Following a consultation process with RAPs and NSW Heritage, the CHMP was finalised and approved by the Planning Secretary on 17 January 2022. Impact mitigation works commenced in April 2022. Cultural heritage awareness training for relevant construction personnel was conducted prior to the commencement of project construction in May 2022 and is on-going.

This report describes the work undertaken to meet the requirements of the CHMP.

In summary, no Aboriginal objects were retrieved during the archaeological works. In addition, the works have demonstrated that the Project Site is highly disturbed in all areas and is very low archaeological sensitivity.

It is concluded that the Project Site has very low to negligible archaeological potential.

1. INTRODUCTION

1.1 The Project

Snowy Hydro Limited is developing a gas fired power station near Kurri Kurri, NSW (‘the Project’) – see Figure 1. The Project involves the construction and operation of an open cycle gas turbine power station and electrical switchyard, together with other associated infrastructure.

The major associated infrastructure for the Project would be a 132 kilovolt (kV) electrical switching station located within the Project Site. Other supporting infrastructure elements of the Project include:

- Storage tanks and other water management infrastructure;
- Fire water storage and firefighting equipment such as hydrants and pumps;
- Maintenance laydown areas;
- Diesel fuel storage tank(s) and truck unloading facilities;
- Site access roads and car parking;
- Office/administration, amenities, workshop/storage areas;
- A provisional stormwater basin.

Construction activities commenced in May 2022 and the Project is intended to be operational by the end of 2023.

This purpose of this report is to document compliance with the requirements as set out in the CHMP prepared for the Project. In summary, the report presents the archaeological investigations/monitoring undertaken and each area investigated. The table below charts the requirements and where they are addressed in the report.

Table 1 Requirements for reporting as per Section 4.5 of the CHMP

Requirement	Section addressed
A short summary	Executive summary
Describe Aboriginal consultation undertaken during the project	Section 2
Provide details of the Aboriginal objects which were partially or completely harmed (i.e., recovered through the excavations) during the works	n/a
Provide a description of the methods and results of the excavations	Section 3
Comment on the effectiveness of the mitigation measures (i.e., salvage excavations)	Section 4
Comment on the effectiveness of any management plan if in place	Section 4
The current and proposed long term location of any	n/a

Requirement	Section addressed
Aboriginal objects recovered	
Details the results of any analysis of recovered Aboriginal objects	n/a
Ensure the necessary Aboriginal Site Impact Recording Forms (ASIRF) are lodged with Aboriginal Heritage Information Management System (AHIMS).	n/a

1.2 Heritage Background

A CHMP has been prepared to implement a process of identifying and managing Aboriginal objects in the post-approval phase of the Project. It outlines the processes and timeframes associated with Aboriginal consultation, and any heritage measures that may be required as part of the Project.

The CHMP is a requirement of the Infrastructure Approval Condition B43 and has been prepared in consultation with RAPs and Heritage NSW. The CHMP was approved by the Secretary on 17 January 2022 prior to the commencement of construction and endorsed by the Environmental Representative (ER).

The CHMP has been informed by the Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared to support the Environmental Impact Statement (EIS) (Jacobs 2021) for the Project.

The objective of the CHMP is to provide guidance on the process of identifying and managing Aboriginal objects in the post-approval phase of the Project through:

- Ongoing consultation with RAPs and Heritage NSW to ensure the conservation and management of Aboriginal cultural heritage on the Project Site;
- Provide information to ensure workers receive suitable Aboriginal cultural heritage inductions;
- Develop long term strategies to protect, monitor and/or manage, and store identified Aboriginal objects;
- Implement an unexpected finds protocol;
- Construct the project in accordance with the Project EIS mitigation measures and Infrastructure Approval conditions.

1.3 Existing Environment

A detailed description of the Project Site with respect to cultural heritage is provided in the ACHAR. A summary of the Project Site environment is provided below.

The Project Site is located at Hart Road, Loxford, approximately one kilometer east of the M15 Hunter Expressway and about three kilometers north of the town of Kurri Kurri (**Error! Reference source not found.**). The Project is being constructed on the site of the former Hydro Aluminium Kurri Kurri Pty Ltd (Hydro Aluminium) aluminium smelter. The smelter, which operated at the site from 1969 until 2012, was closed in 2014. Since its closure, the former aluminium smelter has undergone a staged demolition and site (soil) remediation process, including the removal of all below ground infrastructure and structures.

Owing to its former use, the Project Site is a highly disturbed industrial landscape. The land is generally flat and lies at the edge of the extensive Hunter River floodplain. The Hunter River flows through the town of Maitland approximately nine kilometers northeast of the Project Site.

1.4 Impacts and Mitigation Measures

The CHMP impact mitigation measures to manage potential impacts to cultural heritage include:

- Continuing Aboriginal community consultation;
- Cultural awareness training;
- An archaeological monitoring / testing program;
- Staged archaeological excavations;
- Long term storage procedures of Aboriginal objects;
- An unexpected find protocol.

Archaeological test excavation/monitoring has been conducted for the following works:

Piling Works - The piling works will impact only the potential deposits within the area of the actual piles, nominally 0.5 metres in diameter and up to 20 metres in length (depth to bedrock) and estimated to be some 200 in number. The surrounding material will be preserved beneath the concrete slab foundations and introduced fill currently present on the Project Site. Testing to determine the nature and extent of any potential subsurface deposits could not be undertaken in accordance with the Code of Practice for the investigation of Aboriginal objects (DECCW 2010), due to the depth. Heritage impact mitigation works have been undertaken of the Piling Works in accordance with the CHMP methodology and are described below.

Bulk Excavation - In the areas of bulk excavation for the gas turbine footings and for the provisional stormwater basin, test excavation in accordance with the Code of Practice for the investigation of Aboriginal objects (DECCW 2010) was also not possible due to the depth of fill (potentially under 1.5 metres of fill from the former Kurri Kurri aluminum smelter earthworks) coupled with the depth of the

underlying alluvial deposits and due to the presence of the existing live high voltage electrical switchyard.

Monitoring/testing has been undertaken of the bulk excavation of both the turbine footings and provisional stormwater basin in accordance with the CHMP.

In addition to the gas turbine footings and basin excavations, some smaller shallower excavations may also intrude into undisturbed natural ground and test excavation/monitoring has been conducted where required.

1.5 Mitigation Measures – Summary of Results

Snowy Hydro undertook an expression of interest process inviting all RAP groups to nominate to participate in test excavation/monitoring fieldwork. Six groups nominated individuals and they have subsequently been engaged to participate in the fieldwork in association archaeologists from NSW Archaeology Pty Ltd.

The first round of test excavations addressed the potential for Aboriginal objects to be present in the shallow (surface to approximately 1.5 m depth) material and was conducted in the week ending 29 April 2022. This comprised five test excavations as well as a systematic survey of the surface of the accessible areas of the project site and an inspection of a large area where the sub-soil was exposed. No artefacts were found as part of the surveys or test excavations. Given the extensive and gross disturbance and the absence of artefacts, NSW Archaeology concluded that the surface and near surface layers of the project site have negligible heritage potential and sensitivity. The RAP representatives on site agreed with these conclusions.

The second round of mid depth test excavations was conducted in the week ending 22 July 2022 and took place in the vicinity of the proposed stormwater basin in the northwestern portion of the Project Site. The top 1.5 m was removed from the surface by means of an excavator. Thereafter, three 1 metre layers were systematically excavated and sampled, reaching depths of 2.5 metres, 3.5 metres and 4.5 metres respectively. Over 300 litres of material from each layer were sieved. No artefacts were found, and the RAPs were unanimously confident that nothing would be found from increasing the sample size. The RAPs and archaeologists agreed that the archaeological potential for the site within the mid depth horizon was negligible.

As a result of these works, some refinements to the methodology for the proposed final round of test excavation associated with the turbine footings and piling was undertaken. The turbine footings extend some 3.5 metres below the current surface and because of the conclusion of the second round of test excavations further testing of this mid depth is not required. Testing of the deep material (from some 3 metres to about 13 metres below the current surface) that may be impacted by the piles was the subject of the third round of heritage monitoring/testing. Based on a

risk assessment some refinements to the sampling method to address safety were made. The material was removed from each sampling horizon from the auger with an excavator and placed in piles and transported to a sieving station. No artefacts were found during sieving, and the RAPs and archaeologists agreed that the archaeological potential for the site within the lower depth horizons was negligible.



Figure 1 Location of the project.

2. ABORIGINAL CONSULTATION

2.1 ACHAR and CHMP Phase

A formal Aboriginal consultation commenced in November 2020 during the preparation of the ACHAR. The process resulted in the identification of 22 stakeholder groups who registered an interest in the Project:

- 1) A1 Indigenous Service
- 2) AGA Services
- 3) Awabakal Traditional Owners Aboriginal Corporation.
- 4) Cacatua Culture Consultants
- 5) Corroboree Aboriginal Corporation
- 6) Didge Ngunawal Clan
- 7) DFTV Enterprises
- 8) Divine Diggers Aboriginal Cultural Consultants
- 9) Gunjeewong
- 10) Kawul Pty Ltd trading as Wonn1 Sites
- 11) Lower Hunter Aboriginal Incorporated
- 12) Merrigarn
- 13) Mindaribba Local Aboriginal Land Council
- 14) Muragardi
- 15) Murra Bidgee Muilangari Aboriginal Corporation
- 16) Steven Talbott
- 17) Ungooroo Aboriginal Corporation
- 18) Wattaka Wonnarua CC Service
- 19) Widescope Indigenous Group
- 20) Wonnarua Elders Council
- 21) Wonnarua Nation Aboriginal Corporation
- 22) Yarrawalk (A division of Tocomwall Pty Ltd).

The nature and results of the consultation are presented in the ACHAR (Jacobs 2021).

RAPs were provided with a draft copy of the CHMP for review in November 2021 and feedback is presented in Section **Error! Reference source not found.** and Appendix A of the CHMP.

Site officers have been engaged for the impact mitigation works by the Snowy Hydro Limited as per the expression of interest letter sent to all RAPs on 1 December 2021. Expressions of interests have been received from six RAP groups. Representatives of these groups have assisted with the fieldwork of monitoring/excavation for the impact mitigation program.

Consultation with the Aboriginal stakeholders listed above has continued throughout the course of the Project and includes:

- Representative/s of the RAP groups have been involved in a site officer capacity in all archaeological investigations and the implementation of all mitigation measures;
- RAPs will be provided with any reports outlining the findings of the mitigation measures.

2.2 Aboriginal Cultural Awareness Training

Two levels of cultural heritage training is being provided during the Project:

- Site inductions for the construction workforce includes high level cultural heritage awareness content; and
- Specific training is provided to members of the workforce involved in earthworks where there is the potential of disturbance to artefacts. This includes implementation of cultural heritage management measures, and unexpected finds protocols.

Site induction content and training is provided by the relevant health safety environment manager.

Cultural heritage awareness has been provided by a representative of the Mindaribba LALC. Specific training incorporates material provided by the Mindaribba LALC and mitigation measures specified in this CHMP. As such, only the personnel completing ground disturbing works (labourers, machine operators, etc.) are required to undergo this training as other staff are unlikely to encounter Aboriginal objects. Records are kept by the Principal Contractor for all personnel undertaking the site induction and training, including the contents of the training, date and name of trainer/s.

3. ARCHAEOLOGICAL MONITORING/TEST EXCAVATION PROGRAM

Three separate rounds of archaeological monitoring/test excavations have been undertaken as set out below:

- Test excavation of the near surface layers (surface to 1.5 meters depth) and site survey of exposed surfaces;
- Test excavation of mid surface layers (1.5 – 4.5 meter depth);
- Monitoring of the deep piles (4.5 - 13 meter depth) layers.

The extent of work for each stage of the monitoring/test excavation of surface and sub-surface material has been based on the following triggers. Whether or not:

- Archaeological features such as hearths and/or middens are present;
- High densities of the stone artefacts are present;
- Features are encountered indicating the presence of heritage items identified by the heritage practitioner and the Aboriginal stakeholder representatives.

If these triggers are not met, then test excavation and monitoring would be concluded, and the unexpected finds policy outlined in Section **Error! Reference source not found.** below will be applicable.

It was proposed that if Aboriginal objects were identified through monitoring, the location would be recorded on the AHIMS, in accordance with Section 89a of the *National Parks and Wildlife Act 1974*.

Snowy Hydro also commits to implement measures for the long-term management of Aboriginal objects if discovered during construction. The specific measures are not able to be detailed until the values and nature of the objects or artefacts are known. However, Snowy Hydro commits to determine the specific measures in consultation with the RAP groups and to engage an archaeologist for specific advice.

The archaeological and monitoring program was undertaken in three stages of fieldwork. The rationale, methods and results are described below.

3.1 Test Excavation and Monitoring of Near Surface Layers

The first phase of fieldwork was conducted over an extensive area of the Project Site in April 2022 at the preliminary stage of the Project construction (Figure 2). At this time the Project site consisted largely of highly disturbed bare earth created by rehabilitation of the aluminium smelter site (Plate 1). In addition, a small area of vegetated land was present at the north end of the Project site which was previously occupied by electricity transmission lines and connections to the smelter (Plate 2). The test excavations and monitoring surveys were conducted over both areas. The rationale for the first phase of investigations was to clarify the nature of

the upper ground levels and the potential for Aboriginal objects to be present (surface to approximately 1.5 metre depth).



Plate 1 A general view of the Project Site. Note extensive disturbance post smelter rehabilitation.



Plate 2 The northern area of the Project Site.

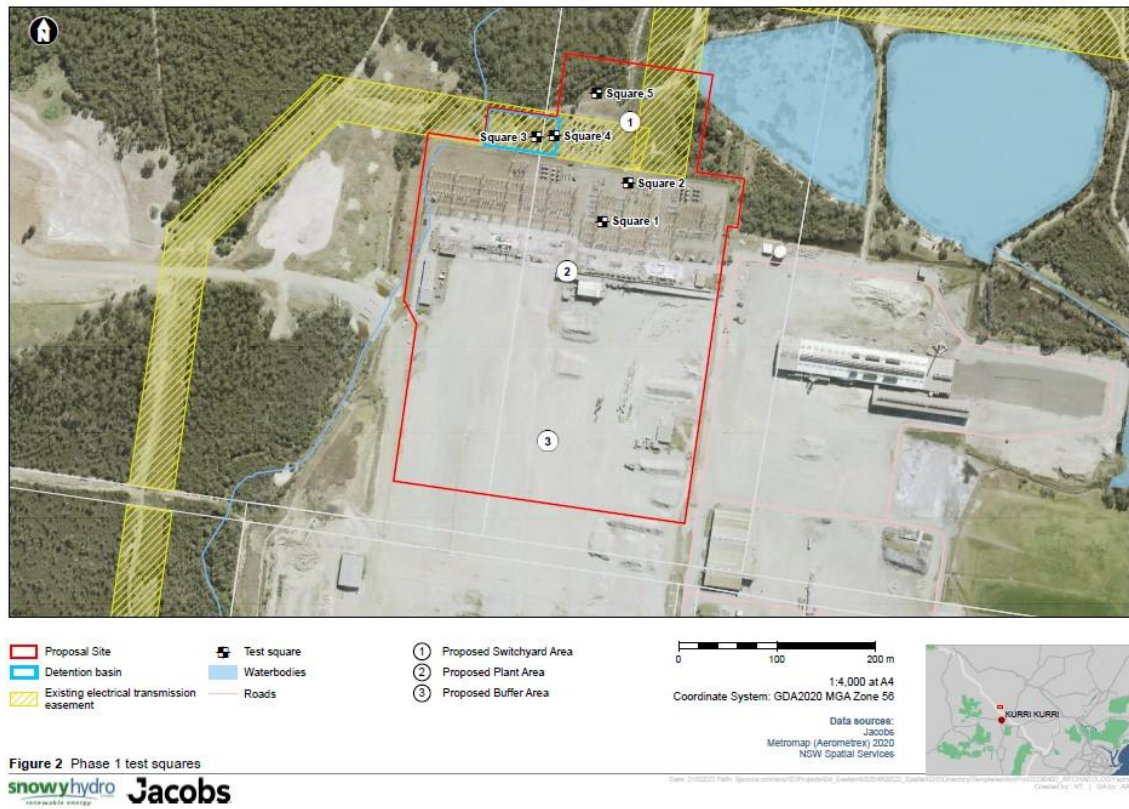


Figure 2 Location of Phase 1 test excavation.

The top level (c. 1 metre deep) of the Project Site is comprised of disturbed/fill material and was assessed to be of low archaeological potential. Test excavations were undertaken in areas that appeared superficially to have the most intact soils. The purpose of these was to clarify the nature of the soil profile, extent of subsurface disturbance and archaeological potential. In addition, any open excavations or exposed areas of the site between the surface to approximately 1.5 metre deep were inspected by survey to determine if Aboriginal objects could be located on disturbed ground surfaces.

Test excavation was conducted at five locations and in addition, a systematic survey of the surface of the accessible areas of the Project Site, including a large area measuring approximately 150 metres x 300 metres where the sub-soil was exposed. No artefacts were found during these works.

Given the extensive and gross disturbance of the Project Site and the absence of artefacts, it was concluded that the surface and near surface layers of the Project Site have negligible heritage potential and sensitivity. The RAP representatives strongly agreed with these conclusions. The Phase 1 works are described in detail below.

3.1.1 Test Excavation – Phase 1

The test excavation was conducted by hand using spades, mattocks and trowels (Plate 3). Each test excavation square measured 100 cm by 100 cm and was

conducted in arbitrary 10 cm deep spits. The excavated material was transferred to colour coded buckets and all deposit was dry sieved through 5mm mesh. No Aboriginal objects were retrieved from any test square.



Plate 3 The excavation and sieving of Square 2.

Test Square 1 – located at 357643e 6371440n (Plate 4)

Two Spits were excavated to a final depth of 20 cm. Spit 1 was comprised of a yellow mottled moist sand, assessed to be a part of the original subsoil horizon and likely to be well below the original ground surface and potential artefact bearing soil context. However, the soil contained abundant introduced gravels and European debris (concrete, porcelain insulator and plastic fragments) associated with the former aluminium smelter. These items are almost certainly present as a result of ground disturbance and mixing associated with gross mechanical works during site rehabilitation. The base of Spit 1 is shown in Plate 5 and the extensive mottling is evident. A large area (48 cm x 40 cm) of light brown sand (with introduced gravels) was present in the northwest corner of the square evident at the bottom of Spit 1 (Plate 6). This indicates a previous intrusion of a humic layer into subsoil, likely associated with smelter use. Spit 2 comprised a light sandy clay with no introduced gravels except in the light brown sand intrusion in the NW corner of the Square. The pH was uniformly neutral throughout the deposit (6 1/2) and grey yellowish brown in colour (Munsell 10YR 5/8).

Interpretation – The extant stratigraphy is consistent with a subsoil context with the original land surface having been removed at some time previously. It is uncertain what depth below the ground surface Spits 1 and 2 would have been originally but it is estimated to be at 50 -100 cm, at least. The extant subsoil context is assessed to be of very low, if not negligible archaeological potential.



Plate 4 Test Excavation Square 1, looking 210°.



Plate 5 Base of Square 1, Spit 1. The top of the square is the western section.



Plate 6 Square 1, NNE section. Note light brown sandy intrusion to a depth of c. 18 cm.

Test Square 2 – located at 357669e 6371479n (Plate 7)

Three spits were excavated to a final depth of 30 cm. Spit 1 was comprised of a pale grey with light yellow/brown mottled moist sand, assessed to be a part of the original A² horizon and likely to be well below the original ground surface and potential artefact bearing soil context. Spit 1 contained abundant introduced gravels and European debris (concrete and brick fragments) associated with the former aluminium smelter. These items are almost certainly present as a result of ground disturbance and mixing from gross mechanical works during site rehabilitation. The base of Spit 1 is shown in Plate 8. Spit 2 revealed a trending compaction of hard pale buff with yellowy brown mottled sand with fewer introduced gravels. Pale buff sands continued into Spit 3 in a wavy deposit both overlying and below yellow sandy clay (Plate 9). The abrupt nature of the transition and mixing of deposit is almost certainly a result of mechanical disturbance and can be seen in the section shown in Plate 9. The pH was uniformly neutral throughout the deposit (6 1/2) and light grey in colour in the upper spits (Munsell 2.5YR 7/1) and yellowish brown below (Munsell 10YR 5/8).

Interpretation – The extant stratigraphy is consistent with a subsoil context with the original land surface having been removed at some time previously. It is uncertain what depth below the surface the square would have been originally, but it is estimated to be at 50 -100 cm, at least. The extant subsoil context is highly disturbed and assessed to be of very low, if not negligible archaeological potential.



Plate 7 Test Excavation Square 2, looking 90°.



Plate 8 Base of Square 2, Spit 1. The top of the square is the north section.



Plate 9 Square 2, south section.

Test Square 3 – located at 357576e 6371526n (Plate 10)

This square was excavated at the north end of the Project Site in the area of the electricity easement associated with the former aluminium Smelter. Two spits were excavated to a final depth of less than 20 cm. The square was abandoned for safety considerations during the excavation of Spit 2 when a power cable earth was uncovered. Spit 1 was comprised of a dark grey moist sand. Spit 1 contained flecks of charcoal, rootlets and small pebbles with a weakly developed humic characteristic. The base of Spit 1 is shown in Plate 11. Humic brown mottling continued in the light grey sand in Spit 2 indicating mixing via mechanical disturbance.

Interpretation – The soil characteristics are consistent with a weakly developed topsoil context likely relating to site stability following clearance and electricity easement installation. The extant context is highly disturbed and accordingly assessed to be of very low, if not negligible archaeological potential.



Plate 10 Test Excavation Square 3, looking 180°.



Plate 11 Base of Square 3, Spit 1. The top of the square is the south section.

Test Square 4 – located at 357594e 6371527n

This square was excavated at the north end of the Project Site in the area of the electricity easement associated with the Aluminium Smelter. Test Square 4 was situated c. 20 m east of Square 3 (Plate 12).

Six spits were excavated to a final depth of 60 cm. Spit 1 was comprised of a dark grey sandy humic topsoil sand (with charcoal fragments), containing extensive patches of yellow/brown subsoil with nodules of iron hardened ‘coffee rock’. Spit 1 contained abundant gravelly rocky substrate and European debris (glass fragments). The base of Spit 1 clearly shows the mixing of humic and subsoil material (Plate 13). Charcoal fragments continue into Spit 2 which began to reveal mechanical deposition of different layered soils that are clearly out of context and continue into Spit 3 as can be seen in the section shown in Plate 14. Spit 2 contained layers of dark grey humic sand with ‘coffee rock’ and some introduced gravels. The bottom of Spit 3 contained a very dark grey sand grading to grey which continues into Spit 5 and the top of Spit 6. The grey sand overlies a yellow iron rich sand at 55 cm near the base of Spit 6. The pH was uniformly neutral throughout the deposit (6 1/2). In Spit 3, the very dark grey sand (Munsell 7.5YR 3/1) gives way to grey (Munsell 10YR 5/1).

Interpretation – The stratigraphy is consistent with a highly mechanically disturbed context with layering revealing multiple gradings of different soils. The top 25 cm appeared to be redeposited over a semi original surface with soils below 25 cm appearing to be relatively intact soil profile. The area is clearly highly disturbed and assessed to be of very low, if not negligible archaeological potential.



Plate 12 Square 4 located beyond and 20 m east of Square 3; looking east.



Plate 13 Square 4, base of Spit 1.



Plate 14 Square 4 south section.

Test Square 5 – located at 357637e 6371570n (Plate 15)

This square was excavated at the north end of the Project Site in the area of the electricity easement associated with the Aluminium Smelter. The location is at the edge of a clearing. The ground north of the site shows clear evidence of having been mechanically disturbed with low mounds of pushed up earth and vegetation.



Plate 15 Test Square 5, looking south.

Four spits were excavated to a final depth of 40 cm. Spit 1 was comprised of a dark grey sandy humic topsoil sand containing patches of yellow/brown subsoil with nodules of iron hardened ‘coffee rock (Plate 16)’. Spit 2 likewise contained mixed humic sand and yellow substrate material and in addition some light grey sand, likely to have been mixed from lower depths. Spit 2 also contain introduced gravels. Spit 3 contained a very dark brownish sandy soil with yellow hardened sand mottling. It appeared highly disturbed with no evidence of a natural layer. Spit 4 contained a grey sand. The pH was uniformly neutral throughout the deposit (6 1/2).

Interpretation – The stratigraphy is consistent with a highly mechanically disturbed context to c. 30 cm with soils below appearing to be a relatively intact lower soil profile (Plate 17). The area is clearly highly disturbed and assessed to be of very low, if not negligible archaeological potential.



Plate 16 Square 5, bottom of Spit 1.



Plate 17 Square 5 north section.

3.1.2 Monitoring/Survey– Phase 1

A systematic survey was carried out over an area of the Project Site measuring approximately 200 by 150 metres (Plates 18 & 19). The area was chosen as it revealed subsoil (Figure 3). No Aboriginal objects were located. The area contained an extensive spread of introduced gravels, electric cabling, broken insulator porcelain, concrete, brick, plastic and other debris. The subsoil was clearly highly disturbed.



Plate 18 Surveyed area, looking east.



Plate 19 Surveyed area, looking west. Note high density broken porcelain insulators.

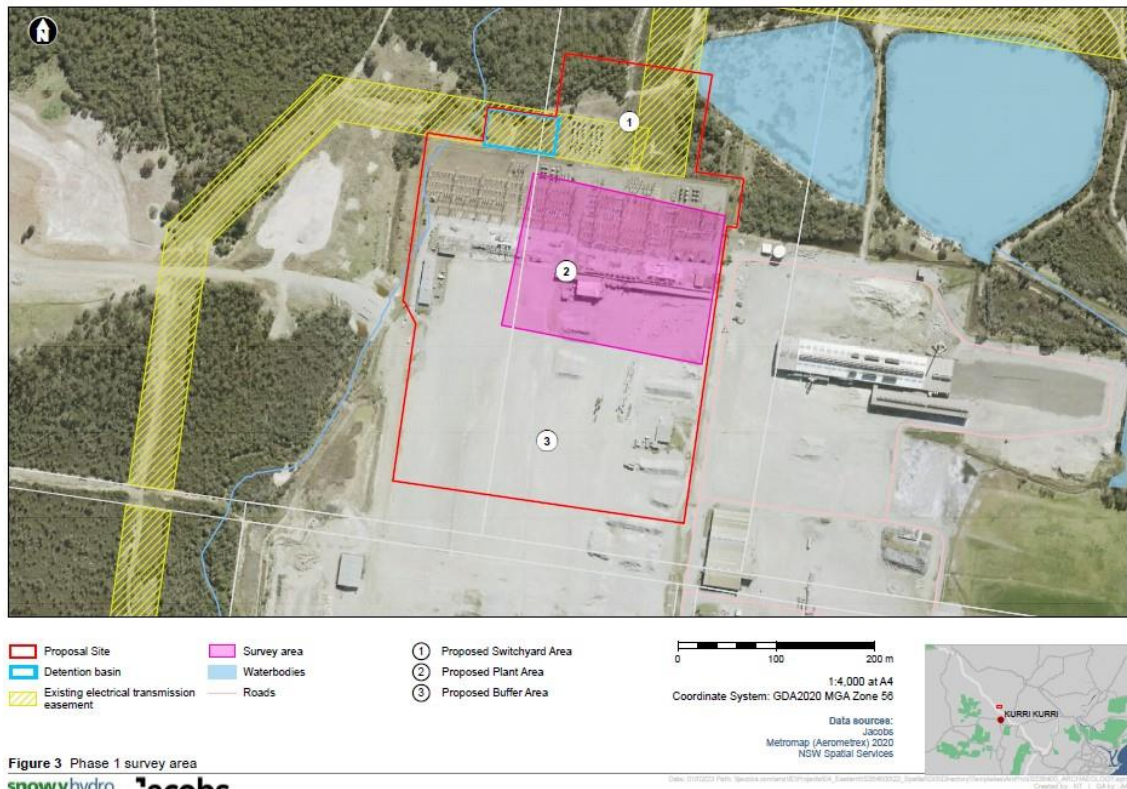


Figure 3 Location of Phase 1 survey/monitoring.

3.2 Test Excavation and Monitoring of Mid Depth Layers

The second round of mid depth test excavations was conducted in the week ending 22 July 2022 and took place in the vicinity of the proposed stormwater basin in the northwestern area of the Project Site (Figure 4). The excavation was conducted in the vicinity of previously excavated Test Squares 3 and 4 and sought to test the archaeological potential of the soils at a depth between 1.5 and 4.5 m below the current ground surface.

The top 1.5m was removed from the surface by means of an excavator. Thereafter, three 1 metre layers were systematically excavated and sampled, reaching depths of 2.5 metres, 3.5 metres and 4.5 metres respectively. Over 300 litres of material was retrieved from each layer, of which 30 buckets were sieved. The deposits were assessed to be of very low archaeological potential and no Aboriginal objects were retrieved. The excavation is described below.

Layer 1 – depth - 1.5 – 2.5 m below ground surface.

A 1 m x 1 m x 1 m bulk sample was retrieved and sieved. The soil was a yellow/orange and light grey mixed clayey sand (Plate 20). The pH was 6.

Layer 2 – depth - 2.5 – 3.5 m below ground surface.

A 1 m x 1 m x 1 m bulk sample was retrieved and sieved. The soil was a yellow/orange and light grey mixed sand containing small nodules of iron rich hardened sand. The pH was 6.

Layer 3 – depth - 3.5 – 4.5 m below ground surface.

A 1 m x 1 m x 1 m bulk sample was retrieved and sieved. The soil was a yellow/orange and light grey mixed sand containing small nodules of iron rich hardened sand. The pH was 6.

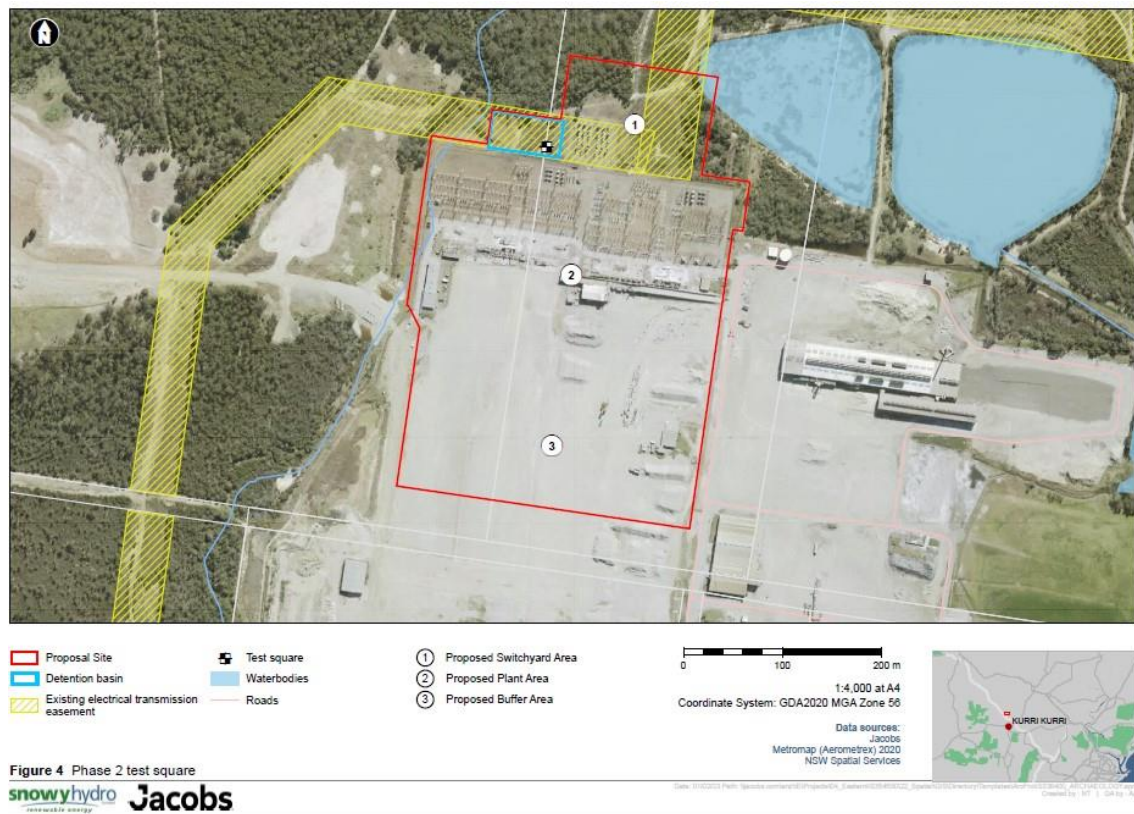
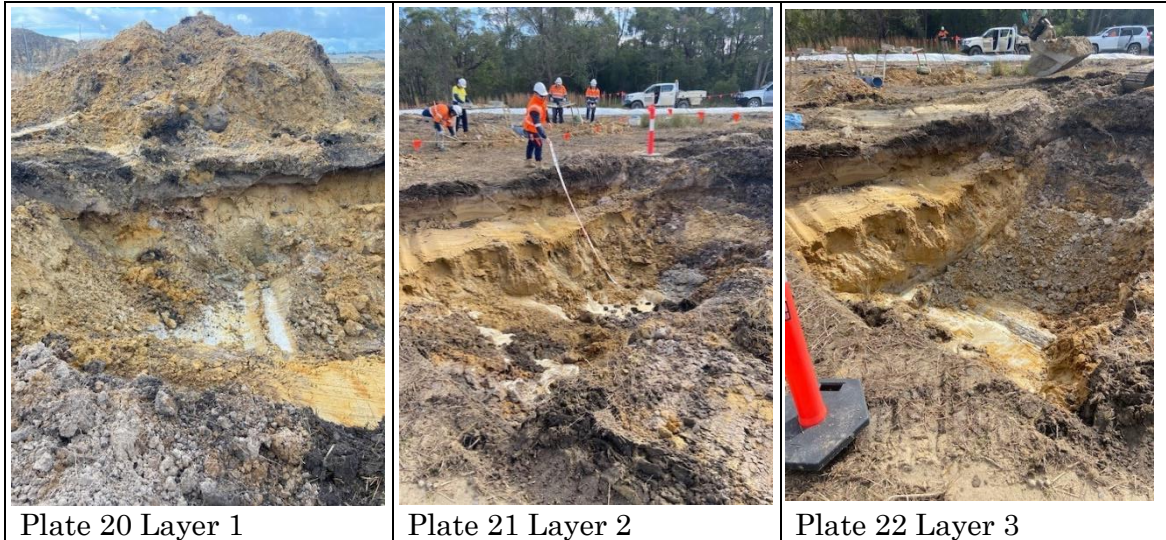


Figure 4 Location of Phase 2 test excavation.

3.4 Monitoring of Deep Piles

A third round of monitoring of material from the deep piles was undertaken in October 2023 to test the archaeological potential of these very deep contexts. Based on the findings of the geotechnical report (Jacobs 2021), it is understood that the alluvium will extend to a maximum depth of 6 metres and that a layer of archaeological sterile material (degraded bedrock) will be present below the alluvium.

Testing of the deep material (from some 3 metres to 13 metres below the current surface) was undertaken. Based on a risk assessment some refinements to the proposed process was required. The material was removed from each sampling horizon by the drilling auger with an excavator and placed carefully into piles. The material was transported to the sieving area and the requisite number of buckets (30 per horizon per pile site) were filled and sieved. The material was retrieved two pile locations (Figure 5).

The material was retrieved from: -32.7852459, 151.4785789. Piles 13 and 20 were sampled, with 4 horizons from each provided for sieving. The horizons sampled from Pile 13 were H4 (4-5m), H3 (6-7m), H2 (8-9m), and H1 (10-12m). The horizons sampled from Pile 20 were H4 (3-4m), H3 (6-7m), H2 (9-10m) and H1 (12-13m). 30 buckets per horizon per pile – ie $30 \times 4 \times 2 = 240$ buckets being a total of 2400 litres was sieved through 5 mm mesh. No Aboriginal objects were retrieved. It was concluded that the lower layers at the Project Site were of very low/negligible archaeological potential. The RAPs were all of adamant agreement that the potential for artefacts was negligible and did not see any need for further investigation.

The following describes the materials recovered:

Pile 13

Depth: 4-5 m. A dark greyish brown sandy clay. Included introduced road base/granite fill. All road base gravels present in deposits originate from the surface layers (Plate 23).

Depth: 6-7 m. A dark greyish brown sandy clay. Included fewer introduced road base/granite fill. Inclusions of red clay.

Depth: 8-9 m. Mid yellowish brown sandy clay with 'coffee rock' like inclusions. Slightly reduced clay content. Small numbers of road base inclusions.. Included fewer introduced road base/granite fill. Inclusions of red clay (Plate 24).

Depth: 10-12 m. Mid yellowish brown sandy clay with very dark greyish brown clay (Plate 25).



Plate 23 Pile 13. 4-5 m



Plate 24 Pile 13. 8-9 m



Plate 25 Pile 13 10-12m

Pile 20

Depth: 3-4 m. Dark brown greyish sandy clay with mid orange and dark red clay inclusions. Some road base gravels.

Depth: 6-7 m. Dark greyish brown sandy clay with mid orange clay inclusions. Some 'coffee rock' and road base gravels.

Depth: 9-10 m. Very dark greyish brown clayey loam with red and orange clay inclusions with mid orange clay inclusions. Some 'coffee rock' and road base gravels.

Depth: 12-13 m. Very dark greyish brown clay and mid orange sandy clay. Small numbers of road base gravels.



Plate 26 Pile 20. 3-4 m



Plate 27 Pile 20. 9-10 m



Plate 28 Pile 20 12-13 m

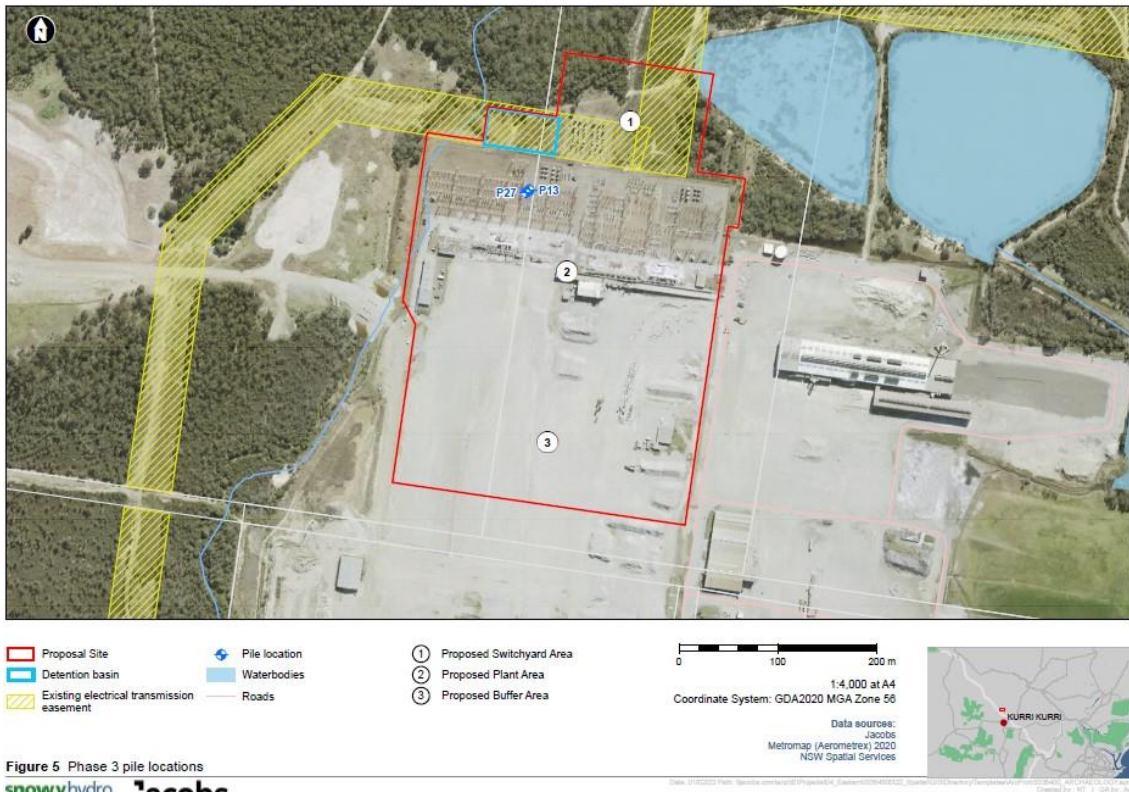


Figure 5 Location of Deep Pile excavation.

4. CONCLUSIONS AND RECOMMENDATIONS

The CHMP has provided an effective, iterative and practical guide to the process of impact mitigation for the Project. The impact mitigation works undertaken demonstrate compliance with the guidance and methods as set out in the CHMP.

The Project Site had been identified to be highly disturbed and of likely low archaeological sensitivity during the initial cultural heritage assessment prepared for the EIS. The impact mitigation measures have been effective in clarifying the archaeological status of the Project site.

Given that no Aboriginal objects have been retrieved during the test excavations/monitoring, the Project Area is assessed to be of very low to negligible archaeological potential. No further archaeological assessment is required.

If in the unexpected event that Aboriginal objects are found while undertaking the activity the proponent must implement the Unexpected Finds protocol for the project.

5. REFERENCES

Jacobs 2021 Aboriginal Cultural Heritage Assessment. Prepared for Snowy Hydro Limited. Reference IS354500, Revision 0, 13 April 2021.

New South Wales Department of Environment, Climate Change and Water 2010a
Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010.

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