

APPENDIX 4 – HERITAGE

Heritage Reports



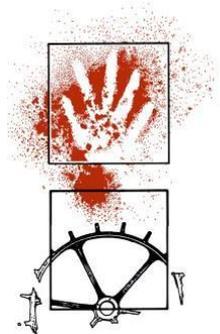
Wilpinjong Coal Mine

Aboriginal Cultural Heritage Clearance Works



Area 20 and Area BJ

August 2017



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EXECUTIVE SUMMARY

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

The following report explains the results of pre-clearance archaeological survey and surface salvage of Areas 20 and BJ and due diligence survey of Area BJ.

Area 20

Thirteen previously lodged site recordings occur in Area 20:

WCP163 - possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP164 – rock shelter with potential archaeological deposit (NOHC 2005). This site is listed in the ACHMP.

WCP165 – rock shelter with potential archaeological deposit (NOHC 2005). This site is listed in the ACHMP.

WCP166 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP167 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP168 – rock shelter with potential archaeological deposit (NOHC 2005). This site is listed in the ACHMP.

WCP170 - possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP171 - possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP584 – rock shelter with potential archaeological deposit (South East Archaeology 2014)

WCP585 – rock shelter with potential archaeological deposit (South East Archaeology 2014)

WCP586 – rock shelter with potential archaeological deposit (South East Archaeology 2014)

WE68 – rock shelter with artefacts and potential archaeological deposit (Kayandel 2006)

WE69 – rock shelter with potential archaeological deposit (Kayandel 2006)

Eleven of these sites were re-found and re-assessed. WE69 and WE68 were not relocated.

Seven new sites were recorded in Area 20, WCP 686 (possible Aboriginal scarred tree), WCP 687 (possible Aboriginal scarred tree), WCP 688 (possible Aboriginal scarred tree), WCP 689 (possible Aboriginal scarred tree), WCP 682 (possible Aboriginal scarred tree), WCP684 (waterhole and grinding grooves), and WCP 685 (artefact scatter).

Recommendations:

1. Newly recorded Aboriginal sites WCP682, WCP684, WCP689, WCP688, WCP687, WCP686, WCP685, and WCP84 should be entered in the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:



- WCP164 GDA 774291.6418299
- WCP165 GDA 774313.6418177
- WCP166 GDA 774322.6418171
- WCP167 GDA 774320.6418151
- WCP168 GDA 774398.6418054
- WCP170 GDA 774269.6418015
- WCP171 GDA 774274.6418010
- WCP584 GDA 774487.6417712
- WCP585 GDA 774616.6417631

3. Waterhole and grinding grooves WCP684; and rock shelters WCP164, WCP165, WCP168, WCP584, WCP585 and WCP586, and the buffer areas shown in Figure 24 are not cleared for impact and must be managed in accordance with the current ACHMP.
4. Scarred tree sites WCP167, WCP166, WCP171, WCP170, WCP163, WCP686, WCP687, WCP688, WCP689, and WCP690 must be fenced off before any clearance work can commence and then must be salvaged in accordance with the current ACHMP.
5. Area 20 is cleared for impact relative to Figure 24 with buffer zones around waterhole and grinding grooves WCP684 and rock shelters WCP164, WCP165, WCP168, WCP584, WCP585 and WCP586.

Area BJ

Area BJ Clearance Survey

Two previously lodged site recordings occur in Area BJ:

WCP448 – artefact scatter (South East Archaeology 2014)

WCP64 – possible Aboriginal scarred tree (NOHC 2005)

WCP448 site was re-located and salvaged by the current survey program. WCP64 was determined to be outside Area BJ in a previously cleared area.

One new site was recorded in Area BJ, WCP 683 (isolated find).

Recommendations:

1. Newly recorded Aboriginal site WCP683 should be entered on the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:
 - WCP448 GDA 774433.6415988
 - WCP64 GDA 774411.6415946
3. Area BJ is cleared for impact relative to Figure 36

Area BJ Due Diligence

Two new sites, WCP680 (isolated find) and WCP681 (artefact scatter) were recorded in Area BJ.

Recommendations:

1. Aboriginal sites WCP680 and WCP681 should be entered on the Wilpinjong Aboriginal sites database.



2. Surface salvage should be conducted on the area prior to impact to collect the two new sites found



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BACKGROUND

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

In 2006 Project Approval was granted under Section 75J of the *Environmental Planning and Assessment Act 1979* (Project Approval 05-0021). In the same year, the mine was purchased by Peabody Energy. The conditions of the Project Approval included the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) and a range of specified requirements in relation to identified heritage sites (WCPL 2006).

The ACHMP includes an Ancillary Disturbance Area Protocol which includes:

1. Pre-clearance archaeological survey (conducted with the assistance of Aboriginal representatives). This survey would include consideration of the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage.
2. Avoidance of the identified Aboriginal object/sites by realigning or adjusting infrastructure/disturbance area if practicable.

If the object/site cannot be avoided:

1. Consider surface salvage (advice from Aboriginal representatives and/or an archaeologist will be sought).
2. If relevant, consider the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage (subject to review of the ACHMP and consultation with Aboriginal representatives and/or an archaeologist).
3. Conduct surface salvage (and subsurface salvage if necessary) with the assistance of Aboriginal representatives and an archaeologist.
4. Store salvaged artefacts in the "Keeping Place".
5. Post-rehabilitation, replace artefacts onto the rehabilitated landform.

Surface Salvage

The ACHMP specifies that surface salvage will involve the systematic recovery of all evident surface artefacts from a representative sample of open artefact scatters and from selected isolated finds at known sites within the project disturbance area. Surface collections will occur on a progressive basis prior to the commencement of ground surface disturbance works within an area.

A basic level of recording will be conducted on all recovered artefactual surface material including location, technological traits, and stone type. This analysis has been conducted by a qualified lithic specialist, Dr Oliver Macgregor.

This Report

This report presents the results of a pre-clearance archaeological survey and surface salvage of Areas 20 and BJ inside the project approval boundary, and a due diligence survey of Area BJ outside the project approval boundary.

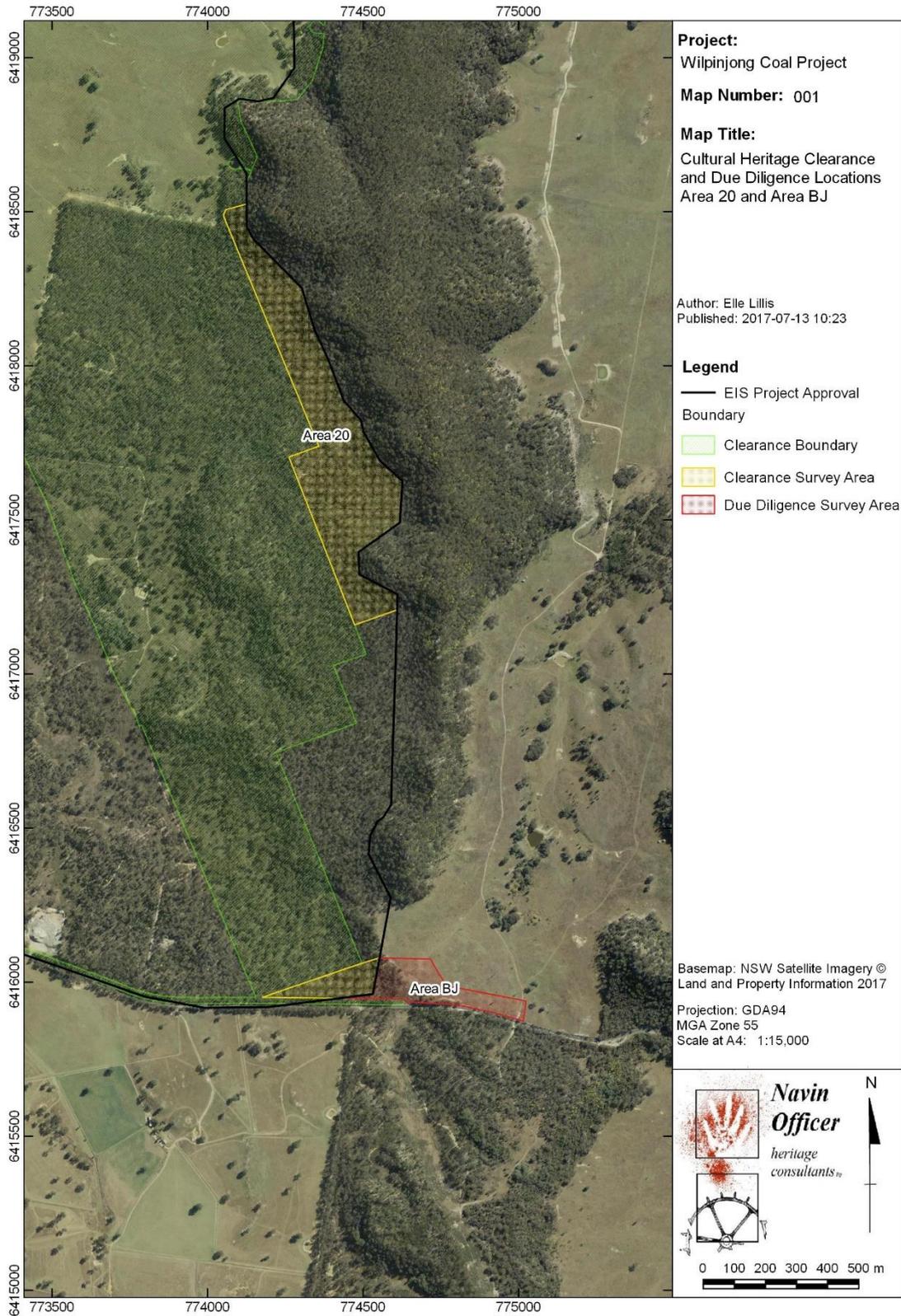


Figure 1 Location of Areas 20 and BJ



SURFACE SALVAGE

AREA 20

Area 20 is shown in yellow in Figure 2 and was surveyed as part of this clearance work program on 16 and 17 May 2017.

Clearance Survey Results

Summary

Fourteen previously lodged site recordings occur in or adjacent to Area 20:

WCP163 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP164 – rock shelter with PAD (NOHC 2005). This site is listed in the ACHMP.

WCP165 – rock shelter with PAD (NOHC 2005). This site is listed in the ACHMP.

WCP166 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP167 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP168 – rock shelter with PAD (NOHC 2005). This site is listed in the ACHMP.

WCP170 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP171 – possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP583 – rock shelter with PAD (South East Archaeology 2014) This site is listed in the ACHMP.

WCP584 – rock shelter with PAD (South East Archaeology 2014) This site is listed in the ACHMP.

WCP585 – rock shelter with PAD (South East Archaeology 2014) This site is listed in the ACHMP.

WCP586 – rock shelter with PAD (South East Archaeology 2014) This site is listed in the ACHMP.

WE68 – rock shelter with artefacts and PAD (Kayandel 2006) This site is listed in the ACHMP.

WE69 – rock shelter with PAD (Kayandel 2006) This site is listed in the ACHMP.

Sites WCP163, WCP164, WCP165, WCP166, WCP167, WCP168, WCP170, WCP171, WCP584, WCP585 and WCP586 were all relocated and re-recorded by the current clearance survey. WCP583, WE68 and WE69 were not relocated.

Seven new sites were recorded in/adjacent to Area 20 by the current assessment, WCP686 (probable Aboriginal scarred tree), WCP687 (possible Aboriginal scarred tree), WCP688 (possible Aboriginal scarred tree), WCP689 (possible Aboriginal scarred tree), WCP682 (possible Aboriginal scarred tree), WCP684 (waterhole grinding grooves), WCP685 (artefact scatter).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

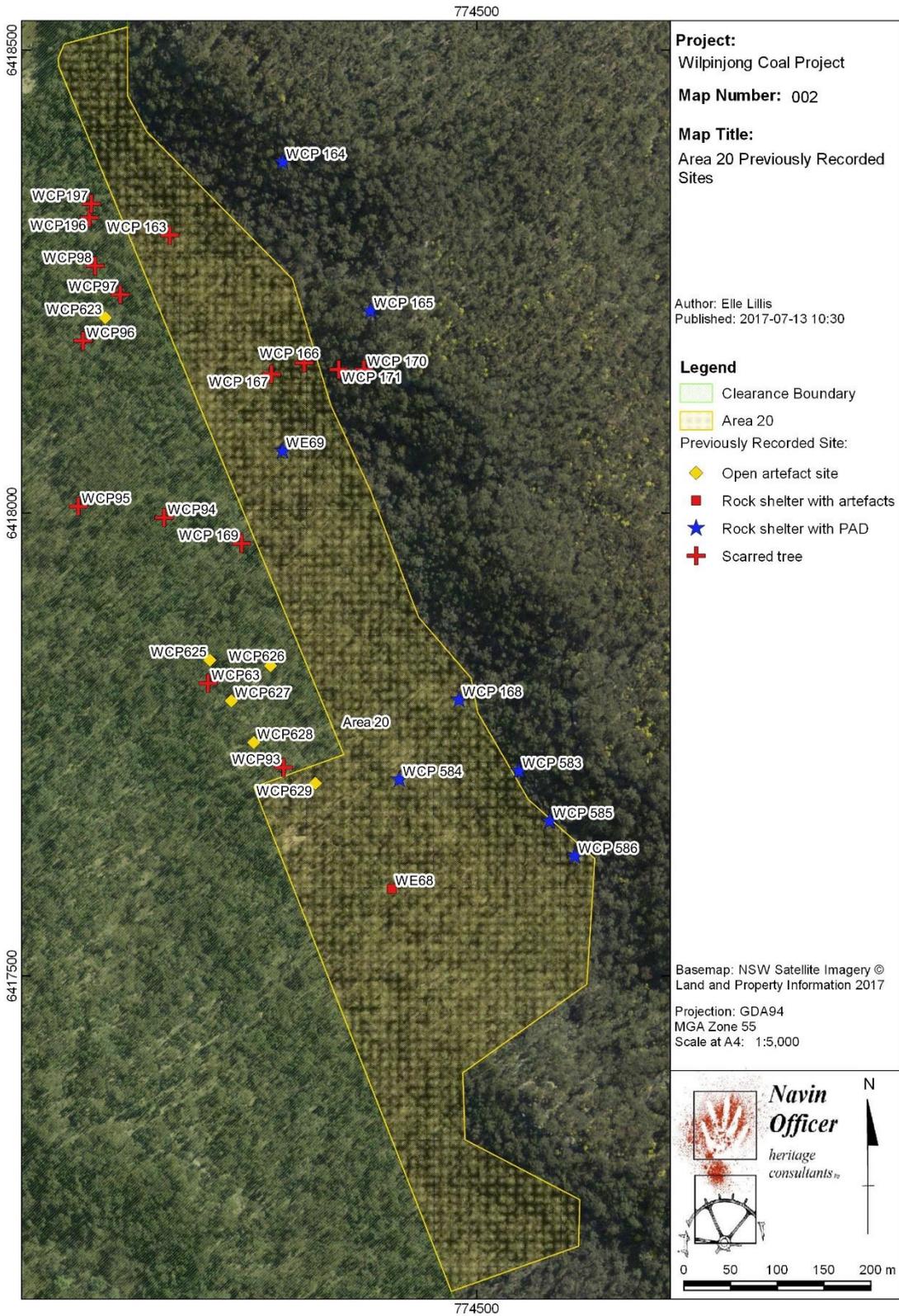


Figure 2: Previously recorded sites in Area 20



Previously Recorded Sites

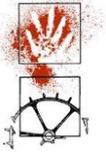
WCP163

GDA (Zone 55): 774170.6418298

WCP163 scarred tree was relocated during this assessment (Figure 3). An assessment of WCP163 was undertaken by NOHC (2005) who determined scar may be Aboriginal in origin. The previously recorded location is correct.



Figure 3: WCP163 looking east



WCP164

GDA (Zone 55): 774291.6418299

WCP164 Rock shelter with PAD was relocated during this assessment (Figure 4).

New location data was recorded for WCP164 during current survey from GDA 774291.6418377 to GDA 774291.6418299



Figure 4: WCP164 looking north east



WCP165

GDA (Zone 55): 774313.6418177

WCP165 Rock shelter with PAD was relocated during this assessment (Figure 5).

New location data was recorded for WCP165 during current survey from GDA 774385.641216 to GDA 774313.6418177



Figure 5: WCP165 looking east



WCP166

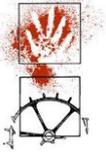
GDA (Zone 55): 774322.6418171

WCP166 scarred tree was relocated during this assessment (Figure 6). An assessment of WCP166 was undertaken by NOHC (2005) who determined scar may be Aboriginal in origin.

New location data was recorded for Modified Tree WCP166 during current survey from GDA 774314.6418160 to GDA 774322.6418171



Figure 6: WCP166 looking east



WCP167

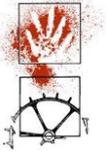
GDA (Zone 55): 774320.6418151

WCP167 scarred tree was relocated during this assessment (Figure 7). An assessment of WCP167 was undertaken by NOHC (2005) who determined scar may be Aboriginal in origin.

New location data was recorded for Modified Tree WCP167 during current survey from GDA 774279.6418148 to GDA 774320.6418151



Figure 7: WCP167 looking south west



WCP168

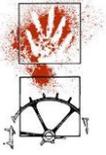
GDA (Zone 55): 774398.6418054

WCP168 rock shelter with PAD was relocated during this assessment (Figure 8).

New location data was recorded for WCP168 during current survey from GDA 774580.6417796 to GDA 774398.6418054



Figure 8: WCP168 looking north east



WCP170

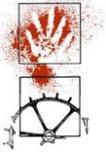
GDA (Zone 55): 774269.6418015

WCP170 scarred tree was relocated during this assessment (Figure 9). An assessment of WCP170 was undertaken by NOHC (2005) who determined scar may be Aboriginal in origin.

New location data was recorded for Modified Tree WCP170 during current survey from GDA 774247.6417965 to GDA 774269.6418015



Figure 9: WCP170 looking north



WCP171

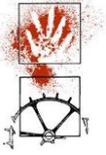
GDA (Zone 55): 774274.6418010

WCP171 scarred tree was relocated during this assessment (Figure 10). An assessment of WCP171 was undertaken by NOHC (2005) who determined scar may be Aboriginal in origin.

New location data was recorded for Modified Tree WCP171 during current survey from GDA 74247.6417965 to GDA 774274.6418010



Figure 10: WCP171 looking west



WCP584

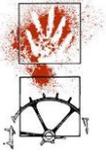
GDA (Zone 55): 774487.6417712

WCP584 rock shelter with PAD (South East Archaeology 2014) was relocated during this assessment (Figure 11).

New location data was recorded for rock shelter WCP584 during current survey from GDA 774417.6417712 to GDA 774487.6417712



Figure 11: WCP584 looking east



WCP 585

GDA (Zone 55): 774616.6417631

WCP585 rock shelter with PAD (South East Archaeology 2014) was relocated during this assessment (Figures 13 and 14).

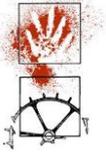
New location data was recorded for rock shelter WCP585 during current survey from GDA 774578.6417667 to GDA 774616.6417631



Figure 12: WCP 585 looking east



Figure 13: WCP 585 looking west



WCP586

GDA (Zone 55): 774605. 6417629

WCP586 rock shelter with PAD (South East Archaeology 2014) was relocated during this assessment (Figure 12). The previously recorded location is correct.



Figure 14: WCP586 looking north



Sites Recorded in the Current Assessment

Seven new sites were found during the current assessment. One of these was an artefact scatter which was subsequently collected. This site has been designated WCP685. Another one of the new sites was a waterhole with grinding grooves with the designated site number of WCP684. The other five sites were possible Aboriginal scarred trees designated with the site numbers WCP686, 687, 688, 689, and 682.

WCP684

GDA (Zone 55): 774456.6417894

WCP684 is a waterhole with grinding grooves (Figures 15 and 16). The waterhole was north facing and in a boulder with grinding grooves at the base. The waterhole dimensions are 78cm h x 40cm w x 2m d. The site was not disturbed.

The site is located in open forest on a slope with a moderate gradient and southerly aspect.



Figure 15: WCP 684 grinding grooves



Figure 16: WCP684 waterhole looking south



WCP685 (Artefact Scatter)

GDA (Zone 55): 774303.6418175

This site is an artefact scatter. Two lithic items were collected in a 1mx1m area (Figure 17).

This site consists of two lithic items consisting of quartzite. The site was located in open forest on a moderate gradient with a westerly aspect.

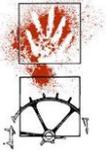
Ground surface disturbance consisted of previous clearing, animal and farming activity and sheet erosion. The disturbance incidence was 90% with 50% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low.

The lithic items were two anvils which conjoined (see table 1).



Figure 17: WCP685 looking west



WCP686

GDA (Zone 55): 774403.6417973

This site consists of one possible Aboriginal scarred tree (Figure 18).

Tree condition: Poor

Tree height: 15m

Tree species: Eucalyptus albens

Original scar length: 2.63m; with regrowth: 2.93m

Original scar width: 80cm; with regrowth: 1.30m

Depth of regrowth: 15cm

Height above ground: 0

Tree Girth: 2.96m

WCP686 was identified by RAP field representatives as a culturally significant modified tree.

Further mitigation actions required prior to impacts based upon an assessment of its Aboriginal cultural heritage value and origin.



Figure 18: WCP686 looking south



WCP687

GDA (Zone 55): 774450.6417835

This site consists of one possible Aboriginal scarred tree with two visible steel axe marks at base (Figure 19).

Tree condition: Good

Tree height: 15m

Tree species: *Eucalyptus albens*

Original scar length: 1.9m; with regrowth: 2.5m

Original scar width: 90cm; with regrowth: 1.8m

Depth of regrowth: 15cm

Height above ground: 0

Tree Girth: 2.46m

WCP687 was identified by RAP field representatives as a culturally significant modified tree.

Further mitigation actions required prior to impacts based upon an assessment of its Aboriginal cultural heritage value and origin.



Figure 19: WCP687 looking south



WCP688

GDA (Zone 55): 774422.6417750

This site consists of one probable Aboriginal scarred tree with one steel axe mark at base (Figure 20).

Tree condition: Good

Tree height: 20m

Tree species: Eucalyptus albens

Original scar length: 2.20m; with regrowth: 2.45m

Original scar width: 65cm; with regrowth: 1.65m

Depth of regrowth: 10cm

Height above ground: 0

Tree diameter: 2.95m

WCP688 was identified by RAP field representatives as a culturally significant modified tree.

Further mitigation actions required prior to impacts based upon an assessment of its Aboriginal cultural heritage value and origin.



Figure 20: WCP688 looking north west



WCP689

GDA (Zone 55): 774271.6418026

This site consists of one probable Aboriginal scarred tree (Figure 21).

Tree condition: Good

Tree height: 15-20m

Tree species: Eucalyptus albens

Original scar length: 2.35m; with regrowth: 2.60m

Original scar width: 45cm; with regrowth: 1.60m

Depth of regrowth: 20cm

Height above ground: 0

Tree Girth: 4m

WCP689 was identified by RAP field representatives as a culturally significant modified tree.

Further mitigation actions required prior to impacts based upon an assessment of its Aboriginal cultural heritage value and origin.



Figure 21: WCP689 looking north east



WCP682

GDA (Zone 55): 774229.6418077

This site consists of one probable Aboriginal scarred tree with two steel axe marks at base of scar (Figure 22).

Tree condition: Good

Tree height: 3.26m

Tree species: Eucalyptus albens

Original scar length: 1.75m; with regrowth: 2.25m

Original scar width: 80cm; with regrowth: 1.85m

Depth of regrowth: 20cm

Height above ground: 65cm

Tree Girth: 3.26m

WCP682 was identified by RAP field representatives as a culturally significant modified tree.

Further mitigation actions required prior to impacts based upon an assessment of its Aboriginal cultural heritage value and origin.



Figure 22: WCP682

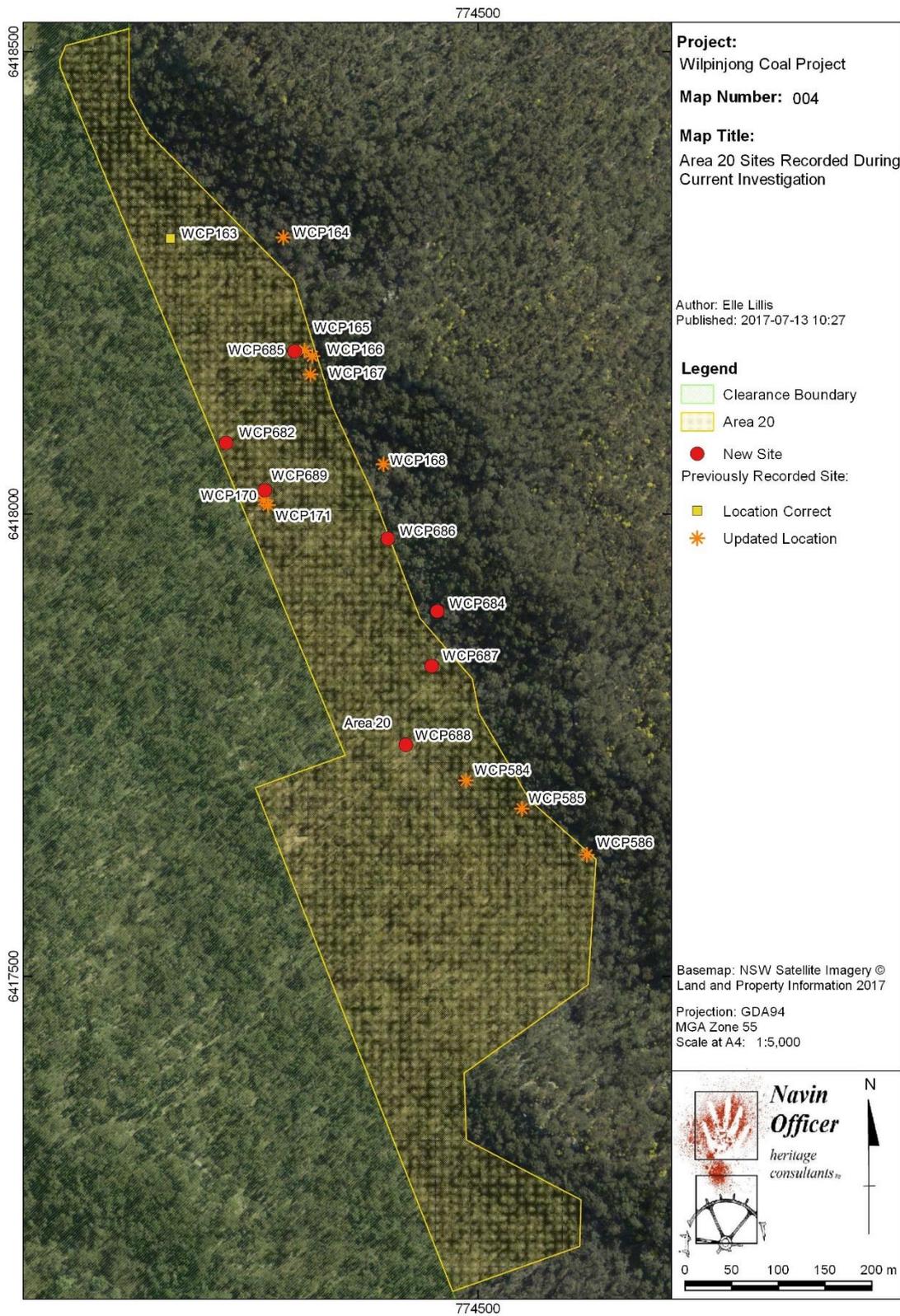


Figure 23: Locations of newly recorded sites and WCP Aboriginal Site Database previously recorded sites with corrected locations – Area 20

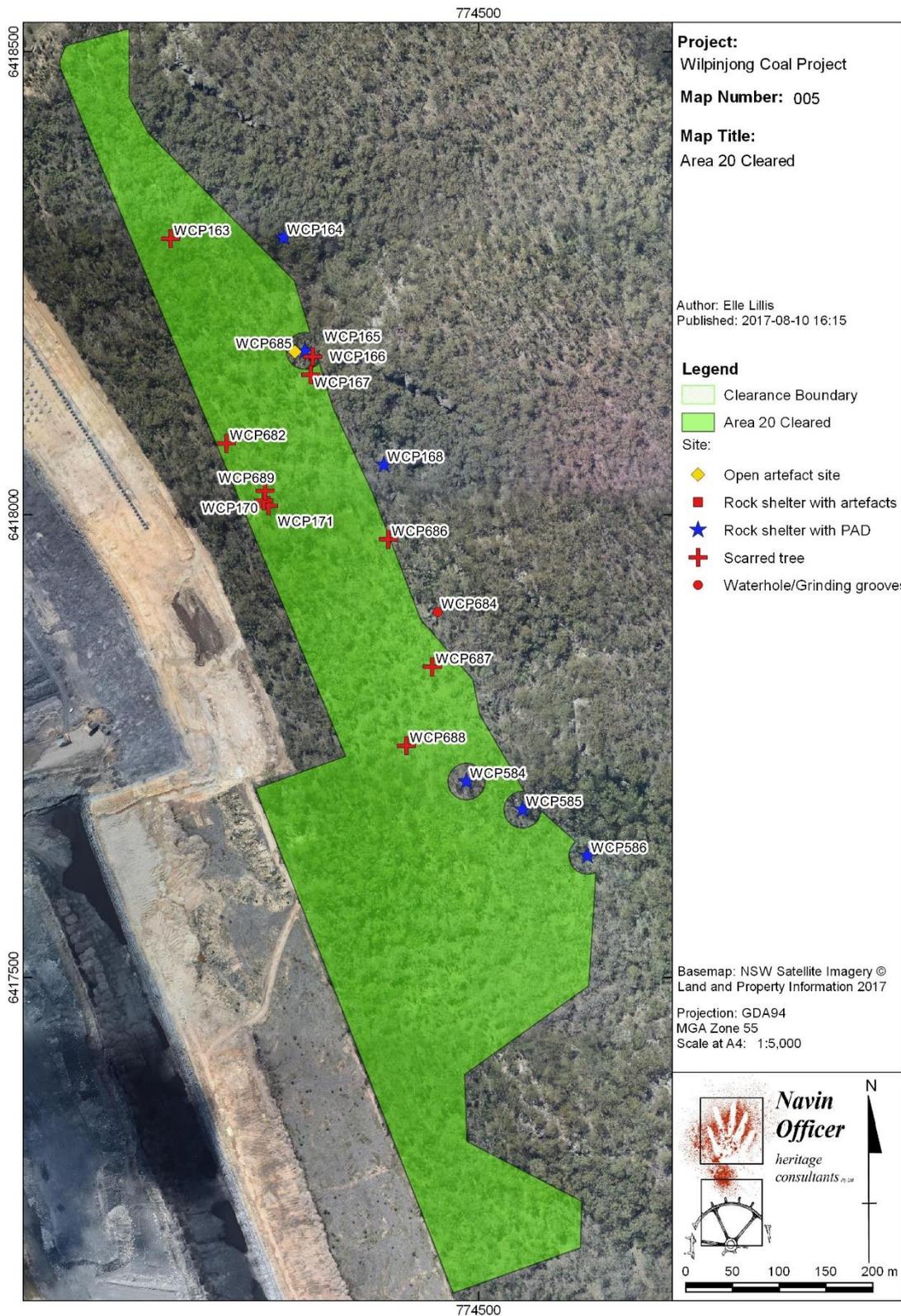


Figure 24: Locations of required site buffers – Area 20



AREA BJ

Area BJ shown in yellow in Figure 25 had clearance salvage and was surveyed as part of this clearance work program on 18th May 2017. Area BJ shown in red in Figure 25 is outside the project approval boundary, a due diligence survey of this area was undertaken on 18th May 2017.

Clearance Survey Results

Summary

Two previously lodged site recordings occur in the Area BJ clearance survey area:

WCP448 – artefact scatter (South East Archaeology 2014)

WCP64 – possible Aboriginal scarred tree (NOHC 2005)

WCP448 was re-located and salvaged by the current survey program. WCP64 was determined to be outside Area BJ in a previously cleared area.

One new site was recorded, WCP683 (artefact scatter).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

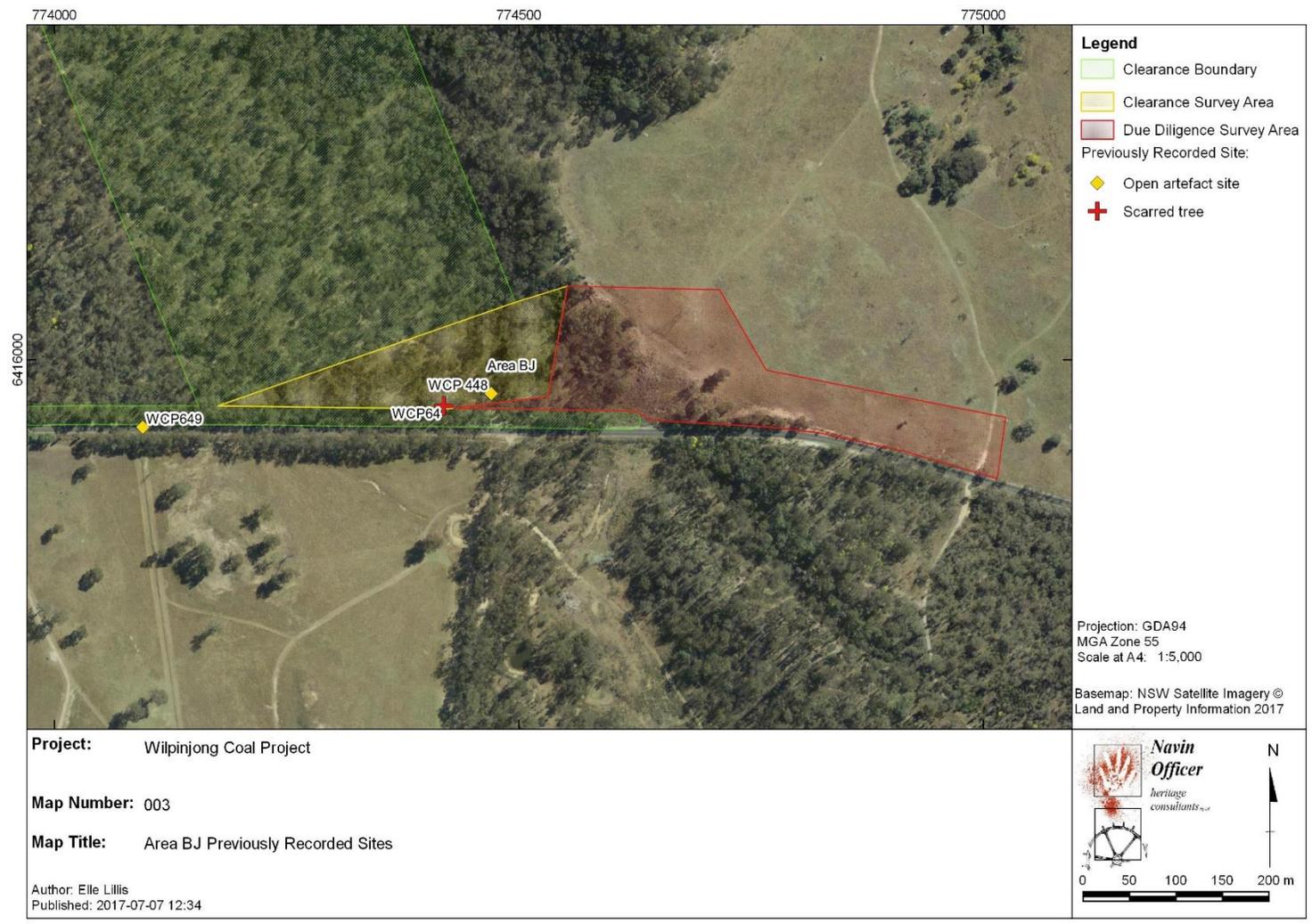


Figure 25: Previously recorded sites in Area BJ



Previously Recorded Sites

WCP448

GDA (Zone 55) 774433.6415988

This site is listed as an artefact scatter. Six lithic items (three confirmed artefacts) were collected.

New location data was recorded for WCP448 during current survey from GDA 774470.6415964 to GDA 774433.6415988

This site consists of six lithic items including three confirmed artefacts located on a vehicle track in open forest on the valley floor (Figure 25).

Ground surface disturbance consisted of sheet erosion, vehicle activity and animal tracks. The disturbance incidence was 40% with 60% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low.

Three confirmed artefacts including two unretouched flakes and a flaked piece were collected from this site (see Table 1).



Figure 26: WCP448 looking east



Sites Recorded in the Current Assessment

WCP683

GDA (Zone 55): 774308.6415997

This site is an isolated find and consists of one lithic item of quartz vein material located in an erosion scald in open forest on the valley floor (Figure 27).

Ground surface disturbance consisted of sheet erosion, vehicle activity and animal tracks. The disturbance incidence was 40% with 50% visibility within exposures. There is low to moderate potential for subsurface material.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low, the likelihood of intact deposits is extremely low.

One unretouched flake was collected from this site (see Table 1).



Figure 27: WCP683 looking north



Collection Location 6

GDA (Zone 55): 774369.6416008

This site is an isolated find. One lithic item of non-artefact origin was collected.

This site consists of one lithic item that was not a confirmed artefact located in an erosion scald in open forest on the valley floor (Figure 28).

Ground surface disturbance consisted of sheet erosion and animal tracks. The disturbance incidence was 30% with 60% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low, the likelihood of intact deposits is extremely low.

A non-artefact was collected from this site (see Table 1).



Figure 28: Collection Location 6 looking north east



Due Diligence Survey Results

Summary

Area BJ Due Diligence site was surveyed as part of the clearance work program on 18th May 2017 (shown in Figure 25). The BJ due diligence area is located in the south west of slate gully adjacent to the road reserve. This area falls within the Wilpinjong Coal Mine extension areas and has been previously surveyed by South East Archaeology (2015).

The area is characterized by low spur lines and drainage lines. Soils are typically derived from bedrock sandstones and conglomerates. Vegetation within the proposed area consists of open (agricultural) grasslands, with pockets of regenerating and open forest.

Ground surface disturbance evident across the area includes forest clearance, agricultural ploughing and pasture improvement, erosion scalds from stock animals and surface water erosion, vehicle track construction and powerline easement.

No previously recorded sites occurred in the Area BJ due diligence survey area.

Two previously unrecorded sites were identified during the current assessment:

WCP680 – artefact scatter

WCP681 – artefact scatter

The locations of recorded artefacts are shown in Figure 35



Sites Recorded in the Current Assessment

WCP680

GDA (Zone 55): 774769.6415943

This site is listed as an artefact scatter in an area of 5m x 2m. Two lithic items were recorded and not collected due to being outside the project approval boundary.

This site consists of two lithic items consisting of quartz and crystal quartz located in an erosion scald (Figure 31). The site is in slate gully on a flat gradient at the top of the gully on a sandy ridge that had been cleared for farming.

Ground surface disturbance consisted of sheet erosion and stock damage. The disturbance incidence was 85% with 70% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed. The two artefacts included one unretouched flake and a core that were not collected from this site (Figure 29 and 30).



Figure 29: lithic item from WCP680



Figure 30: lithic item from WCP680



Figure 31: WCP680 facing west



WCP681

GDA (Zone 55): 774661.6415959

This site is an artefact scatter in a 1m x 35m area. Two lithic items were recorded and not collected due to being out of the clearance project boundary.

This site consists of two lithic items consisting of quartz located in an erosion scald in native understory vegetation. The site is located on a slope with a south west aspect and a steep gradient. The lithic artefacts consisted of an unretouched quartz flake and a quartz core.

Ground surface disturbance consisted of sheet erosion. The disturbance incidence was 70% with 70% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.

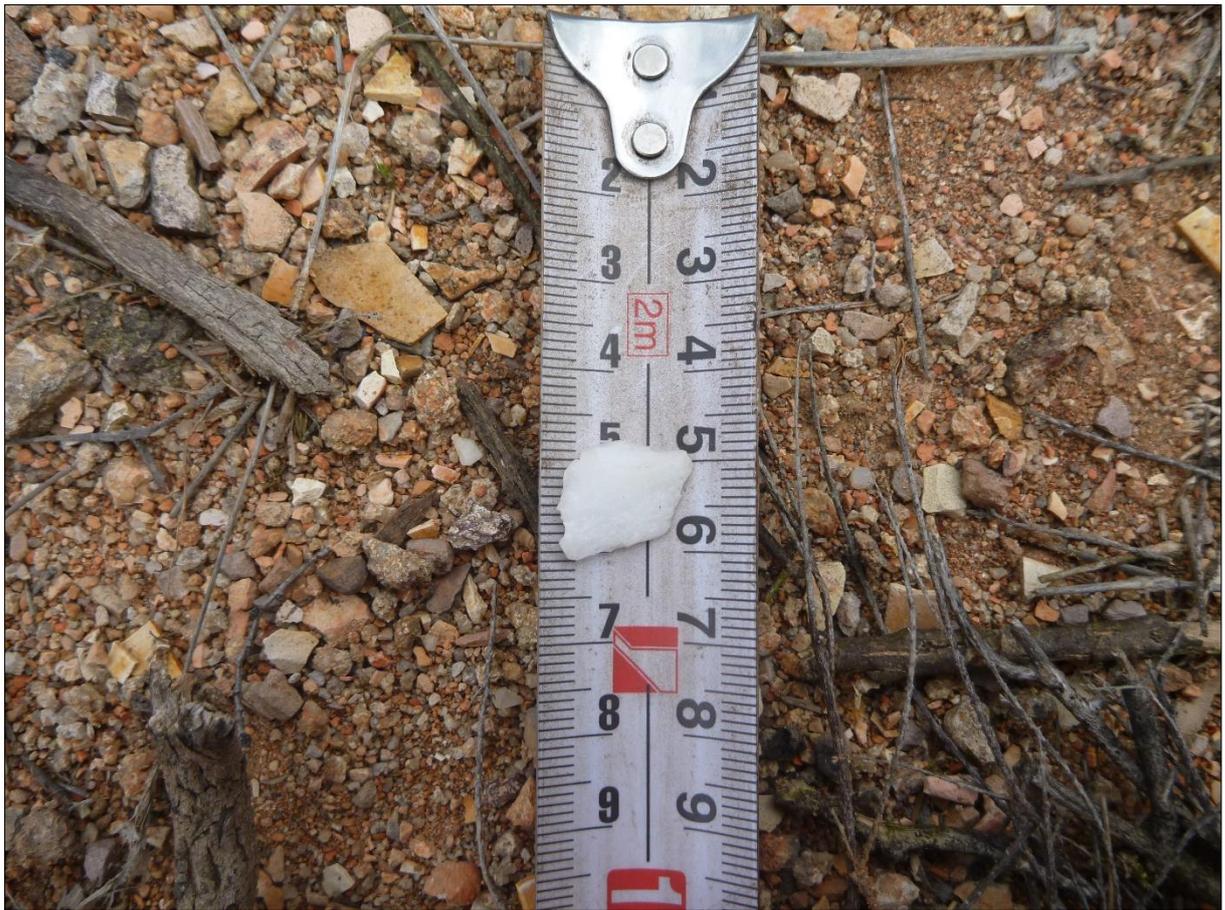


Figure 32: lithic item from WCP681



Figure 33: lithic item from WCP681



Figure 34: WCP681 facing east

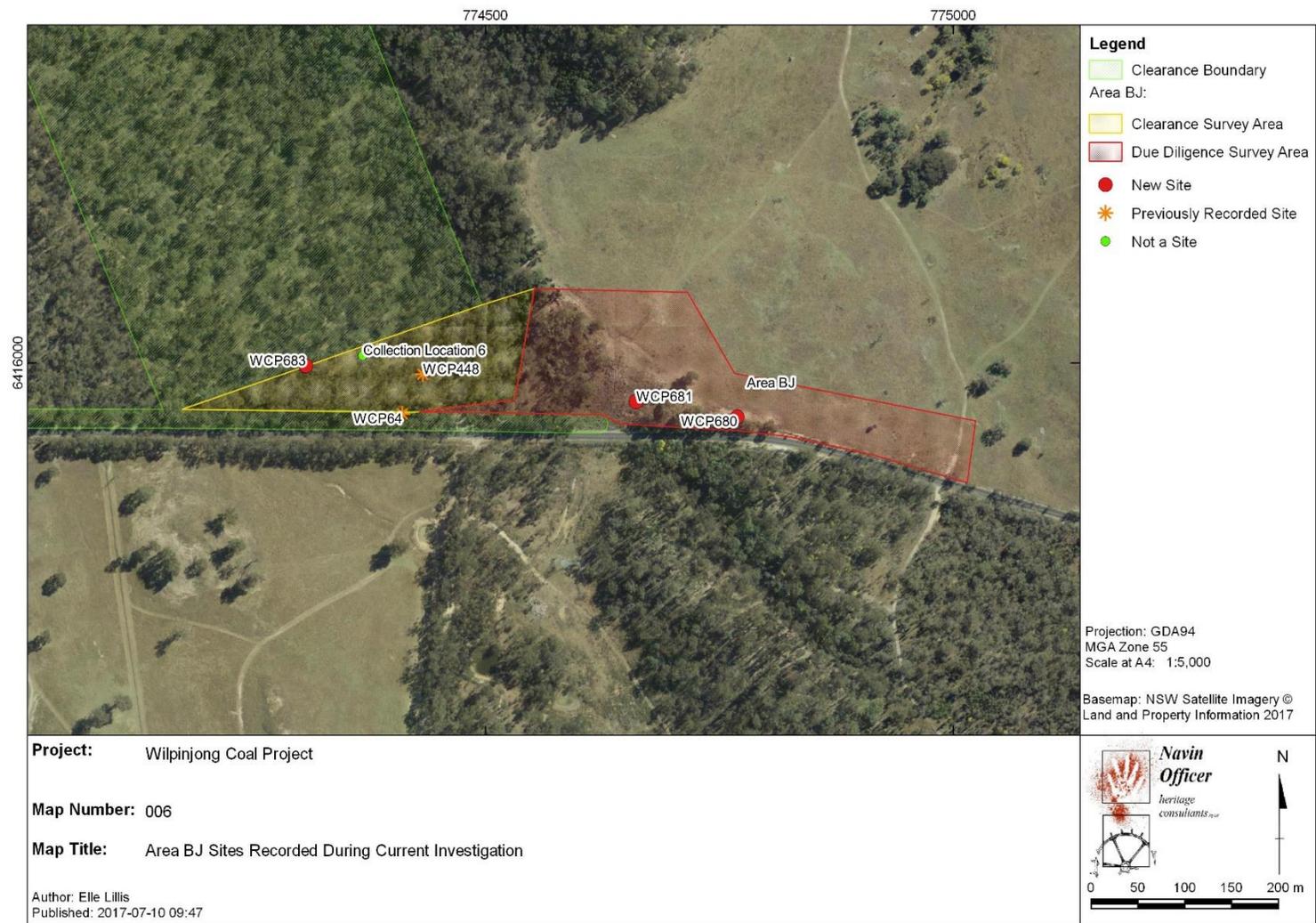


Figure 35: Locations of new sites and WCP Aboriginal Site Database previously recorded sites with corrected locations – Area BJ



Figure 36: Location of cleared areas – Area BJ



LITHIC DATA

Table 1: Lithic Item descriptions with site names and locations

ID	Revised Site Name	Area	Find #	GPS Easting	GPS Northing	Unit	Type	Weight	Material	Completeness	Initiation type	Platform type
216428	WCP685	Area 20	1	774303	6418176	Surface	Anvil	417.58	Quartzite	Broken		
216429	WCP685	Area 20	2	774303	6418176	Surface	Anvil	65.06	Quartzite	Broken		
216430	CL6	Area BJ	CL6	774369	6416008	Surface	Non-artefact	190.58	Quartzite			
216431	WCP448	Area BJ	CL5	774433	6415989	Surface	Unretouched flake	5.3	Mudstone	Distal fragment	None	None
216432	WCP448	Area BJ	CL4	774433	6415988	Surface	Non-artefact	25.21	Quartz, vein			
216433	WCP448	Area BJ	CL3	774436	6415988	Surface	Unretouched flake	103.57	Mudstone	Medial fragment	None	None
216434	WCP448	Area BJ	CL2	774427	6415992	Surface	Flaked piece	14.67	Quartz, vein	Complete		
216435	WCP448	Area BJ	CL1	774433	6415989	Surface	Non-artefact	3.66	Quartz, vein			
Pending	WCP683	WCP	CL7	774369	6416008	Surface	Unretouched flake		Quartz, vein	LCS right	Hertzian	



Table 1 continued.

ID	Termination type	Cortex proportion	Dorsal scar direction	Length	Width	Thickness	Platform width	Platform thickness	Crazing	Crenated fracture	Potlidding	Exfoliation	Comments
216428		80	Same	87.8	85.72	42.21			0	0	0	1	Anvil damage on both broad surfaces of rounded oblate spheroid cobble. Truncated by exfoliation surface.
216429		50	Same and opposite	76.17	41.73	12.83			0	0	0	1	Anvil damage on broad cortical surface. Truncated by exfoliation fracture, along which this artefact conjoins to artefact 1 (id 216428)
216430		40	Same	53.21	44.84	46.79			0	0	0	0	
216431	Feather	0	Same	21.32	21.19	6.15			0	0	0	0	
216432			Same	35.73	28.04	19.69			0	0	0	0	
216433	None	30	Same	59.61	52.33	22.16			0	0	0	0	Fresh breakage on distal end. Fresh Hertzian scars on right margin, interpreted as natural post-depositional damage.
216434		0		31.99	25.87	12.9			0	0	0	0	2 clear negative scars and 1 ambiguous fracture surface.
216435		0		23.03	20.3	6.72			0	0	0	0	
Pending	feather	0		8	6	2			0	0	0	0	



ABORIGINAL CONSULTATION

Wilpinjong Coal Mine (WCM) and Peabody Energy conduct an ongoing consultation program with Aboriginal stakeholders regarding cultural heritage management within the Wilpinjong mining lease (ML 1573). There are currently eight organisations or individuals registered as Aboriginal stakeholders (also known as 'registered Aboriginal parties' or RAPs). The registration process is a standard protocol defined by the NSW Office of Environment and Heritage (OEH). Navin Officer Heritage Consultants contacted each stakeholder to invite a representative of each group to be involved in the site visits for this assessment. This was done via email on 28 February 2017. Three stakeholders responded to the invitation and their representatives attended the fieldwork.

Field Participation

The following representatives from three registered stakeholder groups responded to invitations and participated in the fieldwork program conducted over three days, 16-18 May 2017:

- Christine Maynard Mudgee Local Aboriginal Land Council;
- Coral Williams Warrabinga Native Title Claimants Aboriginal Corporation; and
- Larry Foley Murrong Gillinga.
- Steven Flick Murrong Gillinga
- Debbie Foley Murrong Gillinga

NOHC FIELDWORK PERSONNEL

Archaeologists Elle Lillis and Jo Dibden undertook the survey, recording and artefact collection.

Dr Oliver Macgregor undertook the artefact description.

CONCLUSIONS AND RECOMMENDATIONS

Two clearances areas, Areas 20 and BJ, have been surveyed as part of an Aboriginal cultural clearance heritage clearance works program. A portion of Area BJ was located outside the project approval boundary, and a due diligence survey was undertaken of this area.

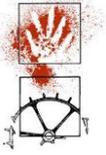
Thirteen previously recorded sites were located in Area 20 and Area BJ and have been reassessed by the report.

A total of ten new Aboriginal sites, WCP680 to WCP689 have been recorded within the Wilpinjong project boundary as a result of this assessment, seven in Area 20 and three in Area BJ.

Area 20

Thirteen previously recorded sites are located in Area 20, eleven of which (WCP163, WCP164, WCP165, WCP166, WCP167, WCP168, WCP170, WCP171, WCP584, WCP585, and WCP586) were relocated and re-assessed by this cultural heritage clearance works survey. WE68 and WE69 were not able to be relocated. Seven new sites (WCP682, WCP684, WCP685, WCP686, WCP687, WCP688 and WCP689) were recorded in Area 20.

Artefact scatter WCP685 was collected and is now cleared for impact.



Scarred tree sites WCP167, WCP166, WCP171, WCP170, WCP163, WCP686, WCP687, WCP688, WCP689, and WCP690 should be discussed with Aboriginal representatives regarding their cultural heritage management.

Consistent with the WCPL ACHMP waterhole and grinding grooves site WCP684 and rock shelter sites WCP164, WCP165, and WCP168 should be avoided by the project.

Waterhole and grinding grooves WCP684; and rock shelters WCP164, WCP165, WCP168, WCP584, WCP585 and WCP586 are not cleared for impact and must be managed in accordance with the current ACHMP

Scarred tree sites WCP167, WCP166, WCP171, WCP170, WCP163, WCP686, WCP687, WCP688, WCP689, and WCP690 must be fenced off before any clearance work can commence and then must be salvaged in accordance with the current ACHMP.

Area 20 is cleared for impact in the area shown in Figure 24, this area avoids rock shelters WCP164, WCP165, and WCP168 and waterhole and grinding grooves WCP684. These sites should be fenced during the life of operations in Area 20 when mining operations come within 20 metres of these sites. Impacting these sites must be avoided.

Recommendations:

1. Newly recorded Aboriginal sites WCP682, WCP684, WCP685, WCP686, WCP687, WCP688 and WCP689 should be entered on the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:
 - WCP164 GDA 774291.6418299
 - WCP165 GDA 774313.6418177
 - WCP166 GDA 774322.6418171
 - WCP167 GDA 774320.6418151
 - WCP168 GDA 774398.6418054
 - WCP170 GDA 774269.6418015
 - WCP171 GDA 774274.6418010
 - WCP584 GDA 774487.6417712
 - WCP585 GDA 774616.6417631
3. Waterhole and grinding grooves WCP684; and rock shelters WCP164, WCP165, WCP168, WCP584, WCP585 and WCP586, and the buffer areas shown in Figure 24 are not cleared for impact and must be managed in accordance with the current ACHMP.
4. Scarred tree sites WCP167, WCP166, WCP171, WCP170, WCP163, WCP686, WCP687, WCP688, WCP689, and WCP690 must be fenced off before any clearance work can commence and then must be salvaged in accordance with the current ACHMP.
5. Area 20 is cleared for impact relative to Figure 24 with buffer zones around waterhole and grinding grooves WCP684 and rock shelters WCP164, WCP165, WCP168, WCP584, WCP585 and WCP586.

Area BJ

Two previously recorded sites are located in Area BJ, WCP448 artefact scatter was relocated and re-assessed by this cultural heritage clearance works survey, WCP64 scarred tree was determined to be outside Area BJ in a previously cleared area. One new site (WCP683) was recorded in Area BJ.



Previously recorded artefact scatter WCP448 and new site WCP683 were collected and are now cleared for impact.

Area BJ is cleared for impact in the area shown in Figure 36.

Recommendations:

1. Newly recorded Aboriginal sites WCP680, WCP681 and WCP683 should be entered on the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:
 - WCP448 GDA 774433.6415988
 - WCP64 GDA 774411.6415946
3. Area BJ is cleared for impact relative to Figure

Area BJ Due Diligence

Two new sites (WCP680, and WCP681) were recorded in Area BJ.

Recommendations:

1. Aboriginal sites WCP689 and WCP681 should be entered on the Wilpinjong Aboriginal sites database.
2. Surface salvage should be conducted on the area prior to impact to collect the two new sites found



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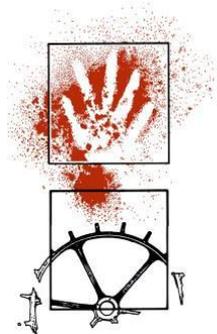
Wilpinjong Coal Mine

Aboriginal Cultural Heritage Clearance Works



Areas 8, 8 adjacent north-west and 22

September 2017



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EXECUTIVE SUMMARY

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

The following report explains the results of pre-clearance archaeological survey and surface salvage of Areas 8 and 22. A survey to the north west of Area 8 is also included as sites were located in that area, which had been previously cleared. This area has been designated the name “Area 8 adjacent north west” for the purposes of this report.

Area 8

Nine previously lodged site recordings occur in Area 8:

WCP79 - possible water hole (NOHC 2004). This site is listed in the ACHMP.

WCP82 - rock shelter with PAD (NOHC 2004). This site is listed in the ACHMP.

WCP160 - possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP162 - open artefact site (South East Archaeology 2014). This site is listed in the ACHMP.

WCP187 - open artefact site (Saunders 2004). This site is listed in the ACHMP.

WCP540 - rock shelter with PAD (South East Archaeology 2014). This site is not listed in the ACHMP.

WCP541 - isolated artefact (South East Archaeology 2014). This site is not listed in the ACHMP.

BTEA006 - isolated find (BTEA 2012). This site is listed in the ACHMP.

BTEA008 - isolated find (BTEA 2012). This site is listed in the ACHMP.

Seven of these sites were re-found and re-assessed. BTEA006 and WCP541 (both open artefact sites) were not able to be re-found by the current survey.

Two new sites were recorded in Area 8, WCP667 (isolated find) and WCP668 (rock shelter with PAD and isolated find).

Area 8 adjacent north-west

Three previously lodged site recordings occur in Area 8 (adjacent north west). They are:

WCP84 - open artefact site (NOHC 2004). This site is listed in the ACHMP.

WCP85 - rock shelter with artefacts (NOHC 2004). This site is listed in the ACHMP.

WCP86 - open artefact site (NOHC 2004). This site is listed in the ACHMP.

These three sites were all re-assessed by the current survey program. No new sites were recorded in the area designated as Area 8 adjacent north west.



Area 22

There are no previously recorded sites located in the Area 22 survey area. Six new sites were recorded during the current assessment including four new rock shelter sites and two isolated finds:

WCP669 - isolated find

WCP670 - isolated find

WCP671 - rock shelter with PAD

WCP672 - rock shelter with PAD

WCP673 - rock shelter with PAD

WCP674 - rock shelter with PAD

Recommendations

Recommendations:

1. Newly recorded Aboriginal sites WCP667 to WCP674 should be entered on the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:

WCP79 - **770895.6416691**

WCP82 - **770834.6416614**

WCP86 - **770595.6416348**

WCP160 - **771674.6416978**

WCP187 - **771217.6416804**

WCP540 - **770626.6416276**

BTEA008 - **770769.6416542**

3. No further action is required for site WCP160. This has been assessed as not an Aboriginal modified tree.
4. Water hole site WCP79 and rock shelter sites WCP82, WCP85, WCP540, WCP543, WCP668, WCP671, WCP672, WCP673 and WCP674 should be avoided by the project. If avoidance is not feasible at these rock shelters and/or the water hole site, then the extent and type of further work for rock shelter and/or water hole sites within the WCPL ACHMP needs to be resolved prior to their impact.



5. Area 8 is cleared for impact relative to Figure 17 which illustrates required buffer zones around rock shelter sites WCP82, WCP540 and WCP668 and water hole site WCP79. WCP543 outside of the Area 8 project boundary should also be avoided with the nominal buffer zone which extends into the Area 8 project boundary (Figure 17).
6. Area 8 adjacent north west is re-cleared for impact relative to the required buffer zone around rock shelter site WCP85 as shown in Figure 25.
7. Area 22 is cleared for impact relative to Figure 33 which illustrates required buffer zones around rock shelter sites WCP671, WCP672, WCP673 and WCP674.



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BACKGROUND

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

In 2006 Project Approval was granted under Section 75J of the *Environmental Planning and Assessment Act 1979* (Project Approval 05-0021). In the same year, the mine was purchased by Peabody Energy. The conditions of the Project Approval included the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) and a range of specified requirements in relation to identified heritage sites (WCPL 2006).

The ACHMP includes an Ancillary Disturbance Area Protocol which includes:

1. Pre-clearance archaeological survey (conducted with the assistance of Aboriginal representatives). This survey would include consideration of the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage.
2. Avoidance of the identified Aboriginal object/sites by realigning or adjusting infrastructure/disturbance area if practicable.

If the object/site cannot be avoided:

1. Consider surface salvage (advice from Aboriginal representatives and/or an archaeologist will be sought).
2. If relevant, consider the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage (subject to review of the ACHMP and consultation with Aboriginal representatives and/or an archaeologist).
3. Conduct surface salvage (and subsurface salvage if necessary) with the assistance of Aboriginal representatives and an archaeologist.
4. Store salvaged artefacts in the “Keeping Place”.
5. Post-rehabilitation, replace artefacts onto the rehabilitated landform.

Surface Salvage



The ACHMP specifies that surface salvage will involve the systematic recovery of all evident surface artefacts from a representative sample of open artefact scatters and from selected isolated finds at known sites within the project disturbance area. Surface collections will occur on a progressive basis prior to the commencement of ground surface disturbance works within an area.

A basic level of recording will be conducted on all recovered artefactual surface material including location, technological traits, and stone type. This analysis has been conducted by a qualified lithic specialist, Dr Oliver Macgregor.

This Report

This report presents the results of a pre-clearance archaeological survey and surface salvage of Areas 8 and 22. An area to the northwest of Area 8 ("Area 8 adjacent north-west") was also surveyed (Figure 1). While undertaking the survey of Area 8 it became apparent that three previously recorded sites were still identifiable within a cleared area to the north-west of Area 8. As a result, survey and recording was undertaken of this area outside of Area 8 and it was designated the name "Area 8 adjacent north-west" for the purposes of this report. All areas are situated within the boundaries of the approved project area (05-0021) and are thus subject to the ACHMP.



Figure 1 Location of Areas 8, Area 8 adjacent north-west and 22



AREA 8

Area 8 is shown in yellow in Figure 2 and was surveyed as part of this clearance work program on 8 and 9 March 2017.

Clearance Survey Results

Summary

Nine previously lodged site recordings occur in Area 8 (Figure 2):

WCP79 - possible water hole (NOHC 2004). This site is listed in the ACHMP.

WCP82 - rock shelter with PAD (NOHC 2004). This site is listed in the ACHMP.

WCP160 - possible Aboriginal scarred tree (NOHC 2005). This site is listed in the ACHMP.

WCP162 - open artefact site (South East Archaeology 2014). This site is listed in the ACHMP.

WCP187 - open artefact site (Saunders 2004). This site is listed in the ACHMP.

WCP540 - rock shelter with PAD (South East Archaeology 2014). This site is not listed in the ACHMP.

WCP541 - isolated artefact (South East Archaeology 2014). This site is not listed in the ACHMP.

BTEA006 - isolated find (???) 2012). This site is listed in the ACHMP.

BTEA008 - isolated find (???) 2012). This site is listed in the ACHMP.

Sites WCP79, WCP82, WCP60, WCP162, WCP187, WCP540, and BTEA008 were all re-found and re-recorded by the current clearance survey (Figures 2, 15 and 16). BTEA006 was not able to be re-found. A lithic item was collected from WCP541, however, analysis identified this item to be non-artefactual and therefore WCP541 was also not re-found by the current assessment.

One site, WCP543, which has been previously recorded as outside the Area 8 project boundary has implications for Area 8. WCP543, a rock shelter with PAD is recorded approximately 13 metres from the edge of the boundary. The nominal buffer zone around this site will extend into Area 8 project boundary (Figure 17).

Two new sites, WCP667 (isolated find) and WCP668 (rock shelter with PAD and isolated find) were recorded in/near Area 8 by the current assessment (Figures 15 and 16). WCP668 was recorded approximately 8 metres outside of the Area 8 project boundary, however the nominal buffer zone around WCP668 will extend into the Area 8 project boundary (Figure 17).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

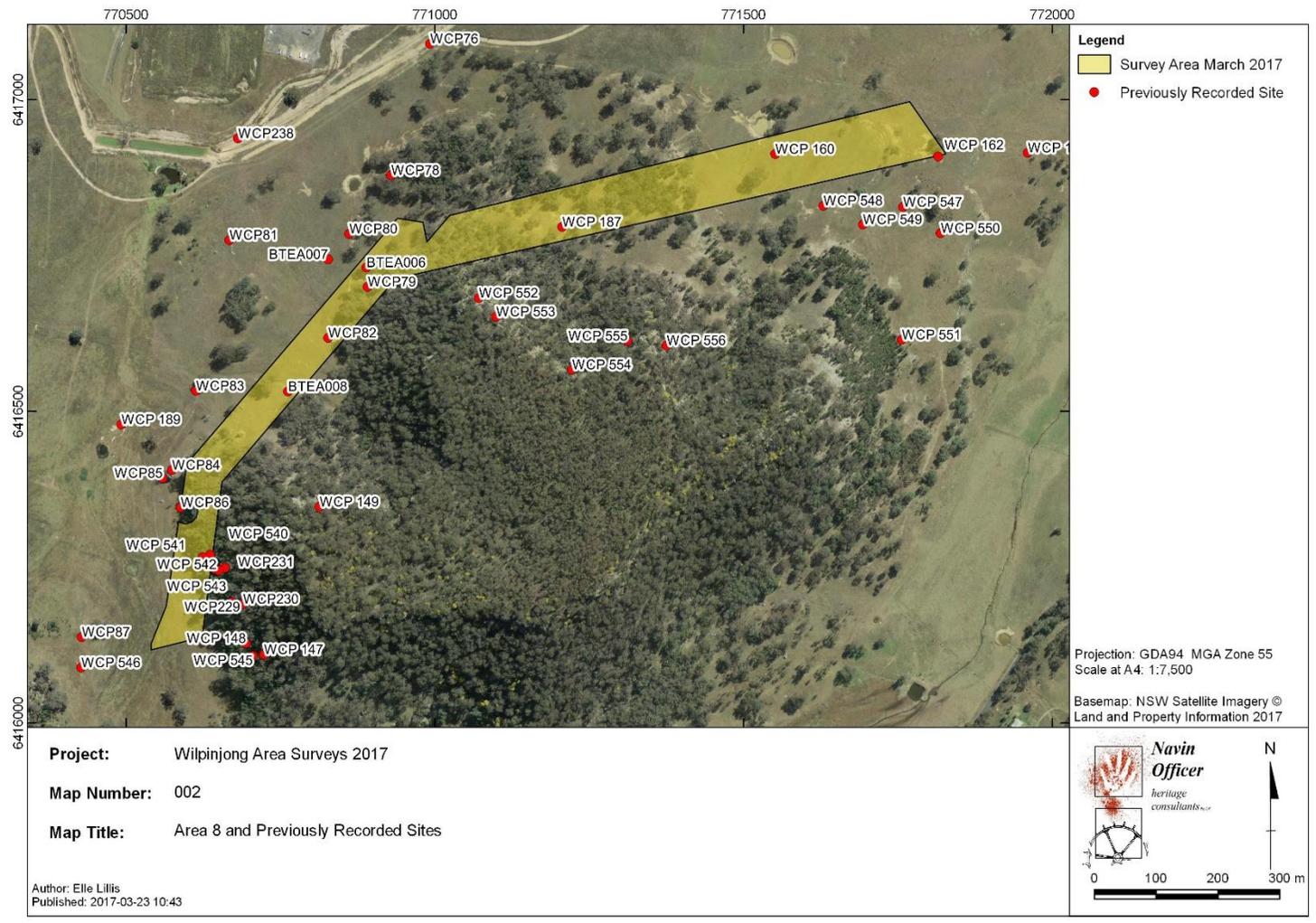


Figure 2 Previously recorded sites in Area 8



Previously Recorded Sites

WCP79

GDA (Zone 55): 770895.6416691

WCP79, a waterhole, was re-found by the current survey. This site is located on the spur of a basal slope within outcropping conglomerate. The waterhole measured approximately 100 x 80 x 25 centimetres and was situated in a conglomerate bolder which measured 2.3 x 1.1 x 1.1 metres (Figure 3). There was no clear anthropogenic modification to the bolder and mossy vegetation is growing inside the waterhole feature.



Figure 3 WCP79 looking west

WCP82

GDA (Zone 55): 770834.6416614

WCP82 was recorded as a rock shelter with PAD (Figure 4). This site was re-found by the current clearance survey and is located on the top of a small spur. The shelter measures 3 x 3.5 metres and has a height of 1.2 metres. The PAD is located inside the shelter and appears to have suffered some disturbance from animal burrows. The rock shelter had no associated surface artefacts.



Figure 4: WCP82 looking south

WCP160

GDA (Zone 55): 771674.6416978

WCP160 was recorded by NOHC in 2005 as a possible culturally modified scarred tree. The GPS location of this tree has been corrected in this assessment. The corrected point is located in an already cleared area just beyond the boundary of Area 8. WCP160 has been re-assessed to not be an Aboriginal modified scarred tree. The scar has experienced considerable regrowth in the past twelve years (Figures 5 and 7) which is one of the key factors in this re-assessment.

RAPs present during the survey did not assess this tree to be culturally modified.

The original scar was recorded with the following measurements (NOHC 2005):

Tree and Scar Description:

Tree Type:	Eucalypt sp.
Tree Circumference:	3.2 m
Tree Condition:	poor with die back, crown damage, stock damage, natural scars, and unstable
Scar length:	40 cm
Scar length with regrowth:	63 cm
Scar width:	14 cm
Scar width with regrowth:	33 cm
Regrowth max:	12 cm
Description:	scar does not extend to the ground, scar edges are even and regular, scar outline is uniform and roughly symmetrical



Figure 5: WCP160 as recorded in 2005

The tree, as observed in 2017, was not in as poor condition as described in 2005. The tree has suffered from some minor limb loss, stock damage and insect damage, but the crown damage noted in 2005 was not evident (Figure 6).



Figure 6: Condition of WCP160



The visible scar was considerably different to the 2005 recording. Only a very small surface area of the original scar was visible and this was heavily damaged (Figure 7).

Tree and Scar Description:

Tree Type:	Eucalypt sp.
Tree Circumference:	3.2 m
Tree Condition:	good, some minor limb loss, stock damage and insect damage
Scar length:	10 cm
Scar length with regrowth:	indeterminate due to tree damage
Scar width:	2 cm
Scar width with regrowth:	33 cm
Regrowth max:	12 cm
Description:	scar surface is barely visible, heavy insect damage on the scar surface, tree is damaged below the original scar.



Figure 7: WCP160 as recorded in 2017

WCP160 has been re-assessed and is no longer considered to be a culturally modified scarred tree. The amount of regrowth the tree has experienced in the last 12 years would suggest that the original scar would not be of an age that would suggest Aboriginal origin. Extrapolating the amount of regrowth along the width of the scar (and assuming relatively stable regrowth through time) the scar would most likely not be more than 30 years old. It is generally accepted that last Aboriginal scars are usually at least 75 years old (Long 2005: 68).



The scar is considered to likely be the result of trauma. Trauma scars are caused when serious trauma to the tree occurs. This can include the loss of a major limb or crown section (Long 2005: 37). The loss of the crown and the poor condition of the tree was noted in 2005 and it is possible that the scar may be related to the poor condition of the tree at this time. Other natural scars were also recorded on the tree in the 2005 recording. These scars were not visible in the 2017 assessment.

The unweathered nature of the scar in the 2005 photograph compared the highly weathered and insect damaged scar observed in 2017 also suggests that the scar may have been relatively fresh when recorded in 2005. This further demonstrates that the scar is likely not to be of an age that would indicate Aboriginal origin.

WCP162

GDA (Zone 55): 771815.6416909 (center point)

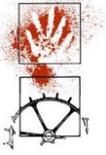
Seventeen lithic items were collected from ten different collection points at WCP162. Ten of these lithic items were confirmed to be artefactual and seven following analysis were classified as non-artefactual (Table 1).

WCP162 is located in an erosional scour on the base of a basal slope. Exposure was estimated to be 90% with 90% visibility in exposures (Figure 8). The artefact scatter was approximately 40 x 40 metres in size and extended just beyond the Area 8 boundary to the south.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 8: WCP162 looking west



WCP187

GDA (Zone 55): 771218.6416804

WCP187 was recorded as an isolated find. This find was recorded as a core and the material type was not noted. The current survey identified an isolated artefact (distal fragment of a chert flake) in close proximity (approximately 14 metres) to the location of WCP187.

WCP187 is located adjacent to a drainage line, low on a basal slope (Figure 9). The exposure incidence was estimated to be 90 % with 90 % visibility in exposures. The site has been moderately disturbed due to erosion associated with the drainage line.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low, the likelihood of intact deposits is extremely low.



Figure 9: WCP187 looking north

WCP540

GDA (Zone 55): 770626.6416276

WCP540 was recorded as a rock shelter with PAD by South East Archaeology in 2014. WCP540 is located on a steep slope in an open forest environment. The shelter measures 4 x 4.2 metres and is approximately 1.8 metres high (Figure 10).

The PAD is approximately 3 x 2.5 metres and is of indeterminate depth. There were no visible surface artefacts associated with WCP540. The PAD appears to have been disturbed from both erosion and animal burrows.

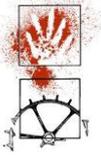


Figure 10: WCP540 looking east

WCP541

GDA (Zone 55): 770624.641266

One lithic item (quartz) was collected approximately 20 metres from the recorded location of WCP541. Analysis determined that this lithic item was non-artefactual (Table 1). Therefore, WCP541 is considered to not have been re-found.

BTEA008

GDA (Zone 55): 770769.6416542 (center point of scatter)

BTEA008 was recorded in 2012 as an isolated find. Twelve lithic items were identified and subsequently collected at and near this location by the current study, following analysis ten of these were confirmed to be artefactual (Table 1). BTEA008 has been updated by this assessment and is now considered an artefact scatter, rather than an isolated find.

BTEA008 is located in a drainage/ erosional gully on a moderate gradient basal slope (Figure 11). The exposure incidence was estimated to be 90 % with 80 % visibility in exposures. The site has been moderately disturbed due to erosional processes associated with the drainage line/ gully. The site measures approximately 70 metres x 20 metres in size.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low.

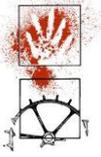


Figure 11: BTEA008 looking west

Previously Recorded Sites in Close Proximity to Area 8 with Implications for Area 8

One site, WCP543, is located in close proximity to the Area 8 project boundary. As this site is a rock shelter the nominally required 20 metre buffer zone will extend within the Area 8 project boundary.

WCP543

GDA (Zone 55): 770650.6416245

WCP543, a rock shelter with PAD, was recorded by South East Archaeology in 2014 (Figure 12).

The shelter was recorded as 5 x 3 metres in size with a height of 1.9 metres. The PAD associated with the shelter was compact and the approximate depth was not able to be determined. The PAD was recorded as 2.5 x 2.5 metres in size.

This site is located approximately 13 metres outside the project boundary. However, the nominal 20 metre buffer around rock shelter sites will extend into Area 8 project boundary. As this site is located outside of the Area 8 project boundary it was not re-assessed by the current survey. All descriptive information is drawn from the details provided by South East Archaeology in 2014. The GPS point location has not been updated by this assessment.



Figure 12: WCP543 (photo from South East Archaeology 2014)

Sites Recorded in the Current Assessment

Two new sites were found during the current assessment. One of these was an isolated find which was subsequently collected. This site has been designated WCP667. The other site newly recorded site was a rock shelter with PAD and an associated isolated surface artefact. This site has been designated WCP668.

WCP667 (Isolated find)

GDA (Zone 55): 770813.6416598

WCP667 is an isolated find located on the flat top a small spur in a cleared grazing land (Figure 13). Exposure incidence was estimated to be 30 % with 30 % visibility in exposures. There is some stock damage evident near the site. WCP667 comprises of a quartz bipolar core (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 13: WCP667 looking south

WCP668 (Rock shelter and PAD)

GDA (Zone 55): 770656.6416331

WCP668 consists of a rock shelter with PAD (Figure 14). An isolated artefact was recorded approximately 2 metres from the opening of this rock shelter and is also encompassed by the site name WCP668. The site is relatively undisturbed and is located on a moderate gradient slope in an open forest environment.

The rock shelter is approximately 4.2 x 2.2 metres and has a maximum height of 2 metres and a minimum height of 60 cm at the back of the shelter. The PAD is approximately 3 x 2.2 metres in size and has an estimated depth of at least 50 cm. Heat shattered stone was visible inside the shelter.

A quartz core was recorded and collected 2 metres to the west of the opening of the rock shelter and is encompassed by this site recording (Table 1).



Figure 14: WCP668 looking north

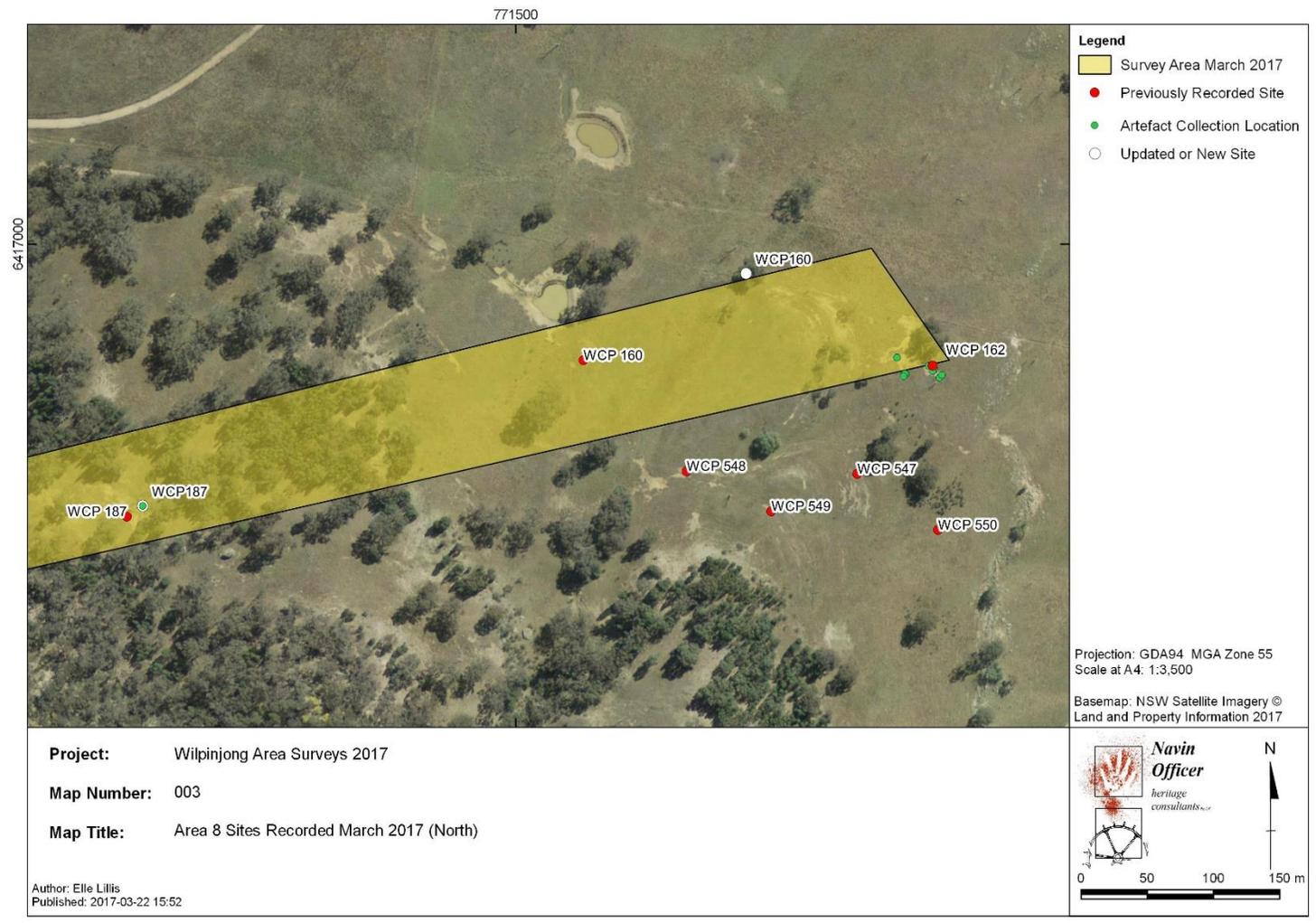


Figure 15 Locations of newly recorded sites and WCP Aboriginal Site Database previously recorded sites with corrected locations – Area 8 (northern portion)

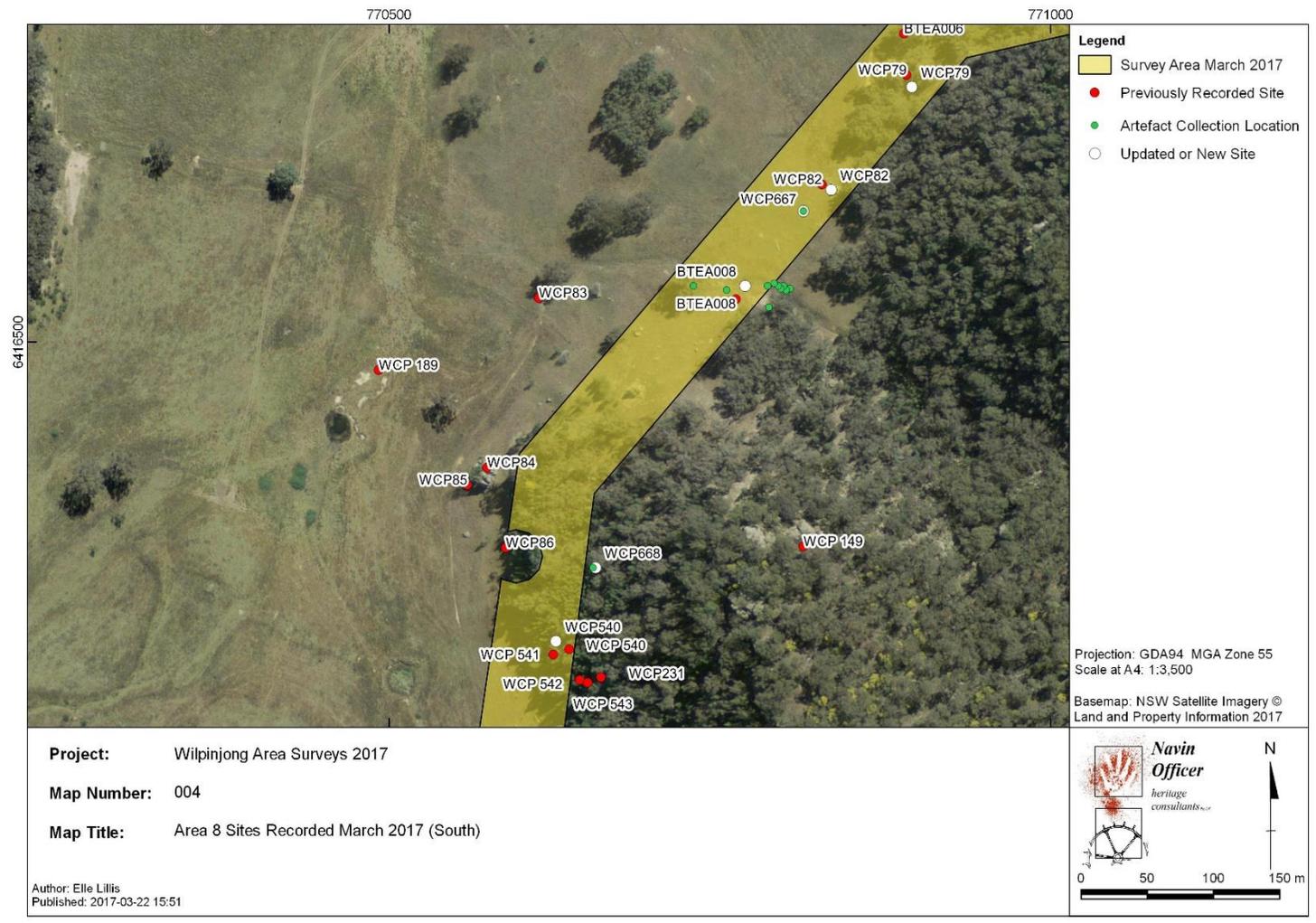


Figure 16 Locations of newly recorded sites and WCP Aboriginal Site Database previously recorded sites with corrected locations – Area 8 (southern portion)

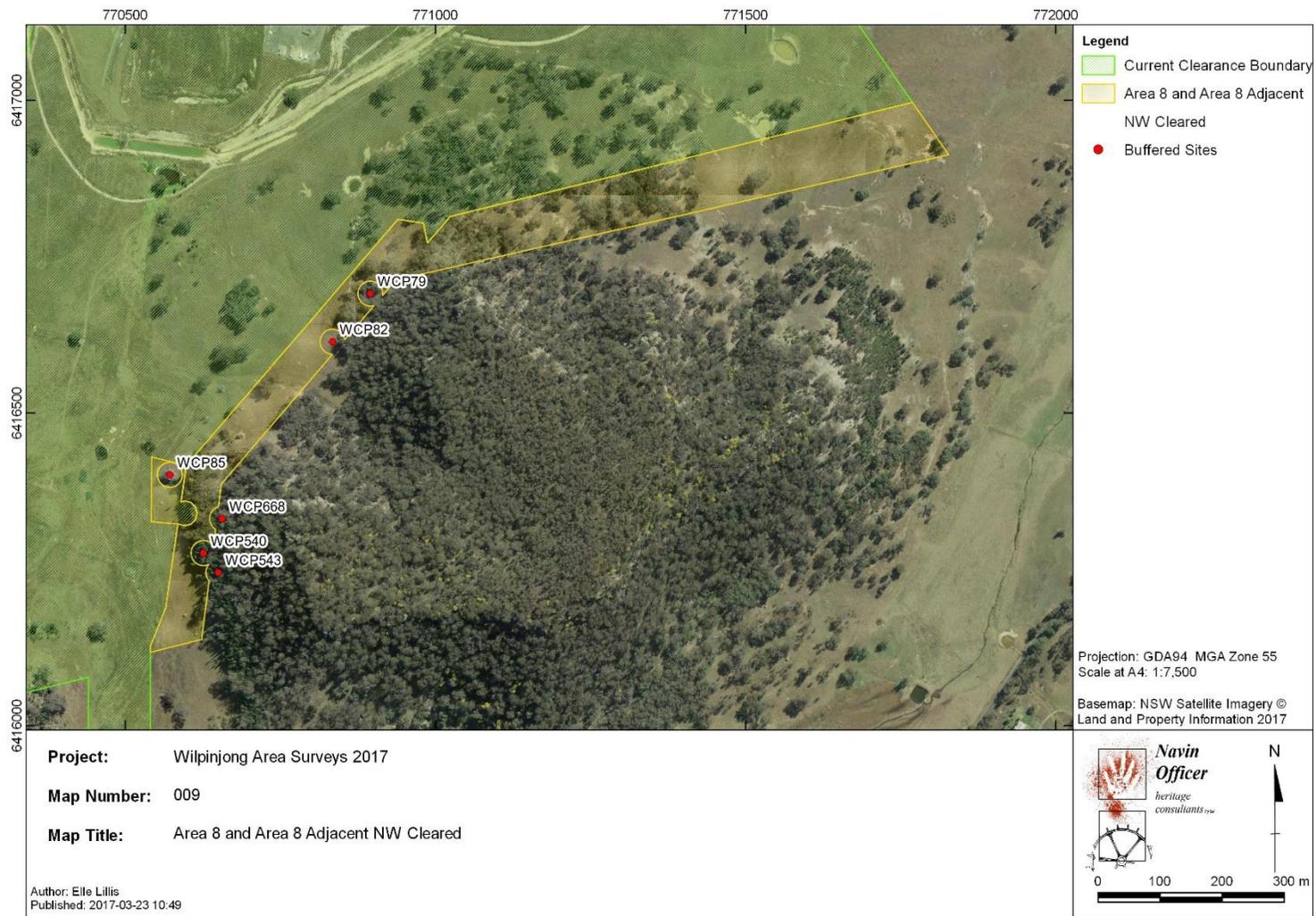


Figure 17 Locations of required buffers around rock shelter and water hole sites – Area 8



AREA 8 ADJACENT NORTH-WEST

Area 8 adjacent north-west is shown in Figure 18 and was surveyed as part of this clearance work program on 8 and 9 March 2017. This area had previously been cleared during prior Aboriginal Cultural Heritage Clearance work surveys. While undertaking the survey of Area 8 it became apparent that three previously recorded sites were still identifiable within this cleared area. As a result, survey and recording was undertaken of this area outside of Area 8 and it has been designated the name “Area 8 adjacent north-west” for the purposes of this report.

Clearance Survey Results

Summary

Three previously lodged site recordings occur in Area 8 adjacent north-west (Figure 18). They are:

WCP84 - open artefact site (NOHC 2004). This site is listed in the ACHMP.

WCP85 - rock shelter with artefacts and PAD (NOHC 2004). This site is listed in the ACHMP.

WCP86 - open artefact site (NOHC 2004). This site is listed in the ACHMP.

No new sites were recorded in Area 8 adjacent north west. A buffer zone will be required around rock shelter site WCP85 (Figure 25).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

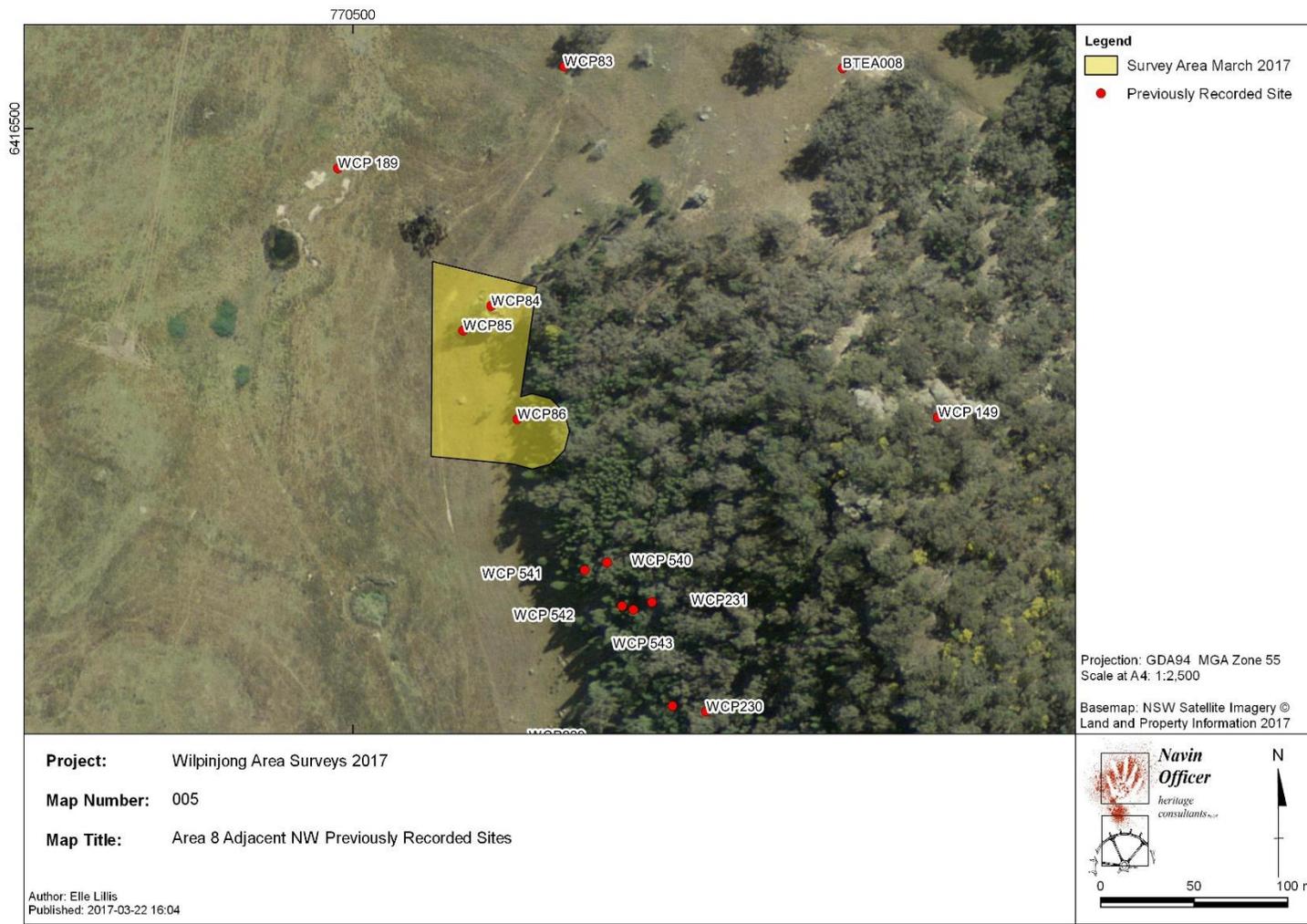


Figure 18: Previously recorded sites in Area 8 adjacent north west



Previously Recorded Sites

WCP84

GDA (Zone 55) 770574.6416406

This site is listed as an isolated find and a possible association with WCP85 (rock shelter with artefacts and PAD) was also noted (NOHC 2005: 93). Four lithic items (all confirmed artefacts) were collected within 5 metres of the previously recorded point of WCP84.

The site is associated with a large heavily weathered sandstone boulder (approximately 10 x 10 metres in size and 10 metres high) and is located on the boulder's northern side (Figure 19). The site is located at where the basal slopes intersect with the valley floor. Disturbance from animal burrows was noted at WCP84.

WCP84 and WPC85 are likely representative of one site complex. Further information on WCP85 is provided below.



Figure 19: WCP84 looking south

WCP85

GDA (Zone 55) 770559.6416393

WCP85 was previously recorded as a rock shelter with PAD and artefacts by NOHC in 2004. The site was re-found by the current assessment and recorded. WCP85 and WCP84 (discussed above) are likely part of the same site complex and are associated with a very large, heavily weathered, sandstone bolder which is located at the intersection of the basal slopes and the valley floor environments.



Twenty-five lithic items were collected as part of the artefact scatter component of the site. Twenty of these were confirmed to be artefactual. Artefacts primarily comprised of quartz (16), followed by chert (2) and silcrete (1) and FGS (1). No artefacts were found directly within the rock shelter with PAD component of the site (Figure 20).

The artefact scatter is primarily located to the west of the large boulder along an eroded vehicle track in an area approximately 10 x 10 metres in size. Two artefacts were located on the southern side of the boulder near the opening of the rock shelter. Exposure was estimated to be 90 % with 70 % visibility in exposures.



Figure 20: WCP85 (artefact scatter) looking north east

The rock shelter is located on the southern side of the large boulder and is elevated approximately 1.5 metres above the ground surface (Figure 21). The shelter and PAD sit inside the boulder itself (Figure 22).

The shelter is approximately 3.3 x 4 metres in size and has a maximum height of 2.6 metres. An opening in the rock is located on the western side of the shelter. The base of the shelter is slightly rocky towards the back on the western side and consists of a soft silt towards the front. The PAD associated with the shelter measures approximately 4 x 2.5 metres in size. The potential/approximate PAD depth was not able to be determined during survey.

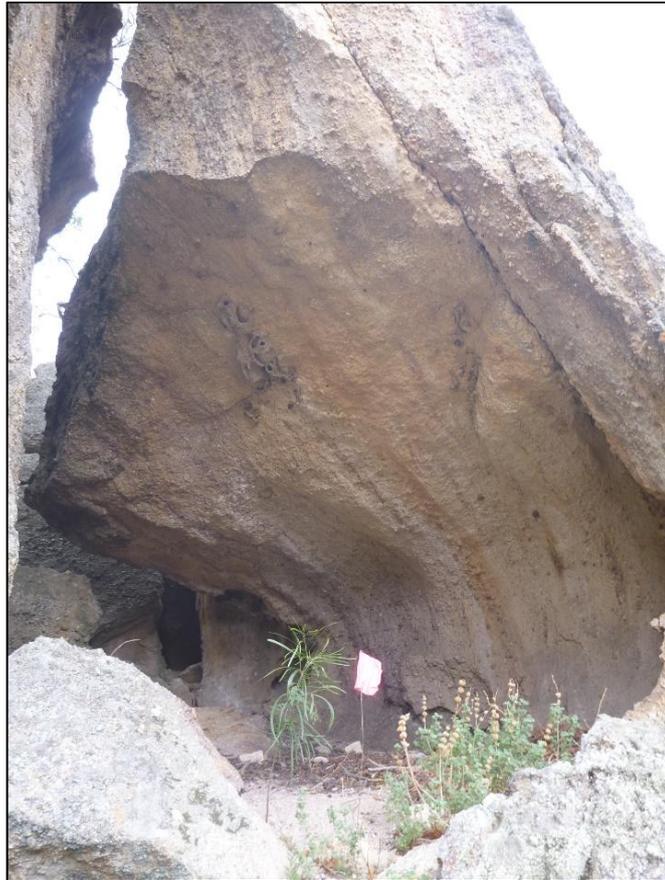


Figure 21: WCP85 (rock shelter with PAD) looking north east

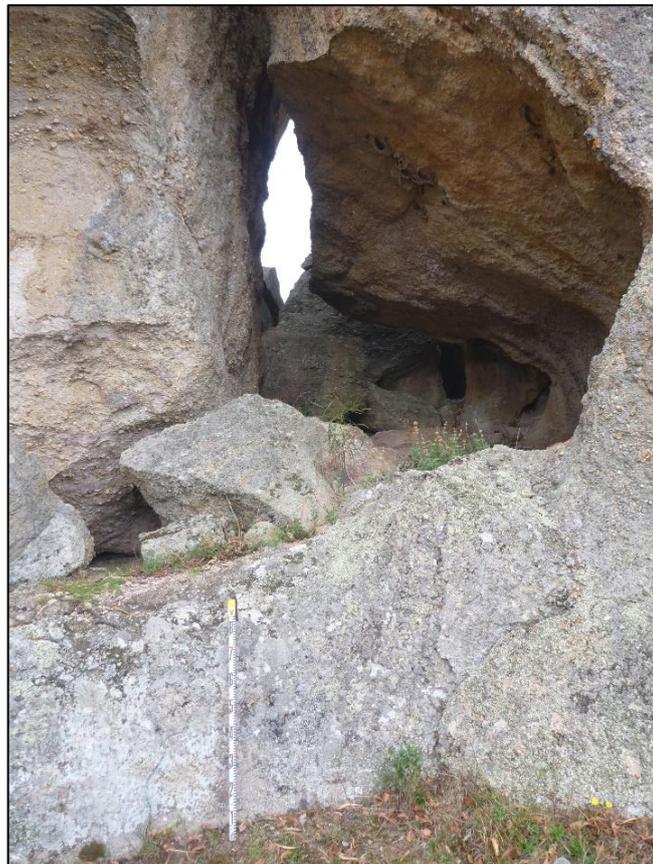


Figure 22: WCP85 (showing elevation) looking north east



WCP86

GDA (Zone 55) 770595.6416348 (center point of scatter)

WCP86 was previously recorded by NOHC in 2004 as a small artefact scatter comprising of two quartz flakes.

WCP86 was re-found by the current survey and is located on a moderate gradient slope at the edge of an open forest environment (Figure 23). Exposure was estimated to be 80 % with 70 % visibility in exposures. Two unretouched quartz flakes were collected (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low due to the presence of very thin soils on the moderate gradient slope, the likelihood of intact deposits is low.



Figure 23: WCP86 looking west

Sites Recorded in the Current Assessment

No new sites were recorded in Area 8 adjacent north west during the current assessment.

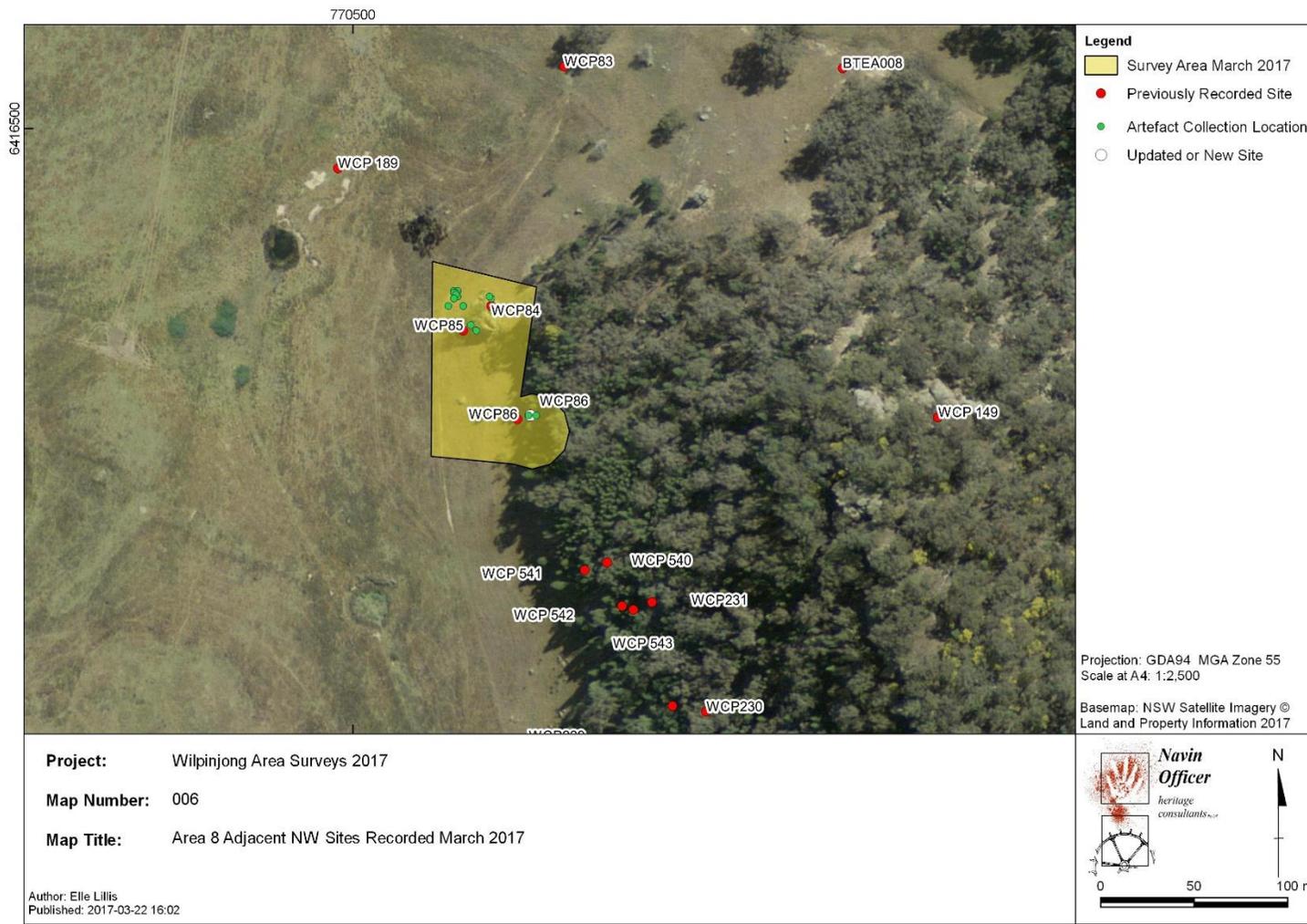


Figure 24 Locations of WCP Aboriginal Site Database previously recorded sites with corrected locations – Area 8 adjacent north west

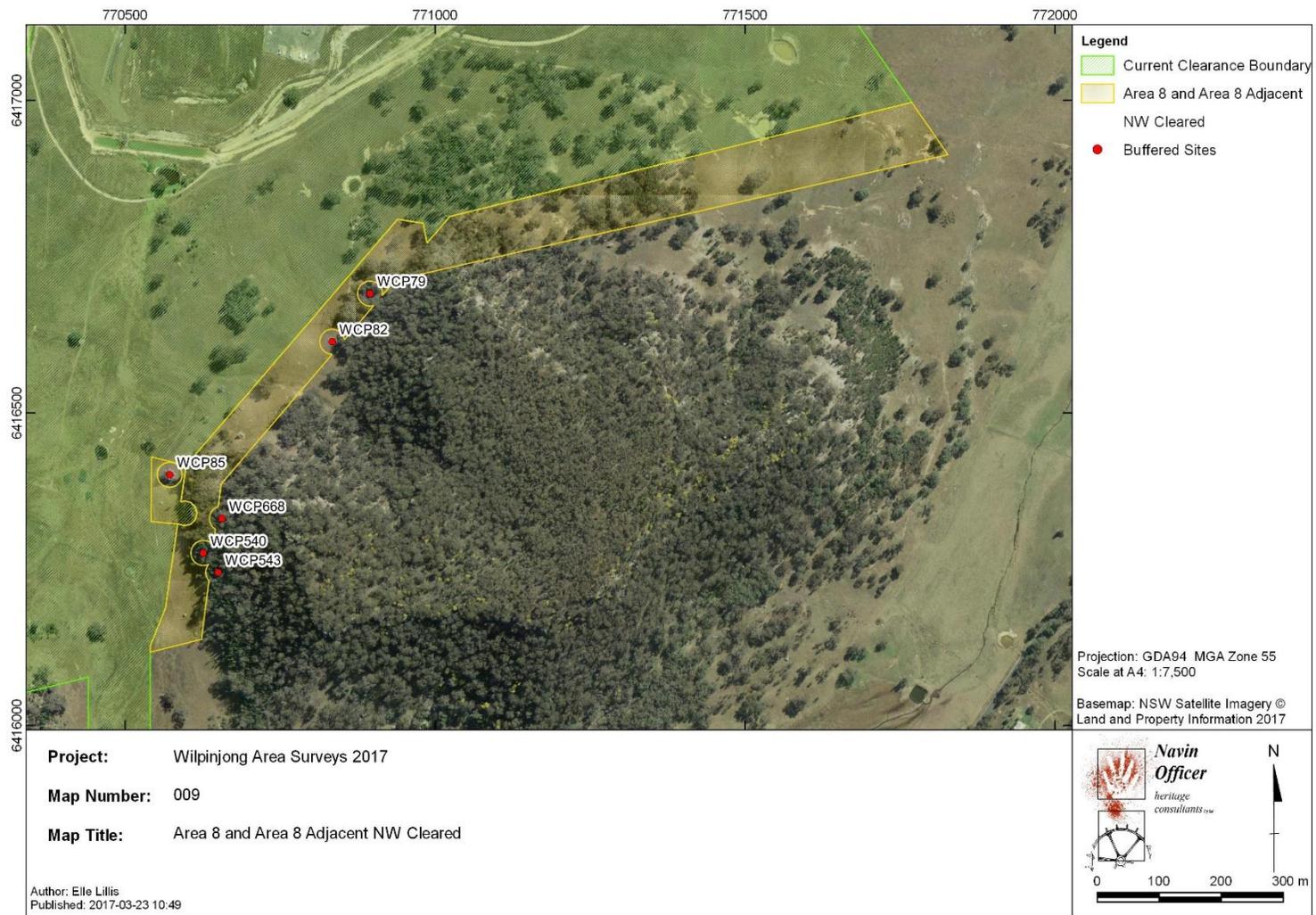


Figure 25 Locations of required buffers around rock shelter site WCP85– Area 8 adjacent north west



AREA 22

Area 22 is shown in yellow in Figure 26 and was surveyed as part of this clearance work program on 9 March 2017.

Clearance Survey Results

Summary

Two isolated finds and four rock shelters with PAD were recorded by the current investigation (Figure 32). One of these rock shelters (WCP672) is located approximately 11 metres outside of the boundary of Area 22 but the nominal 20 metres buffer will extend into the Area 22 project boundary. Buffer zones will be required around all rock shelter sites in/near Area 22 (Figure 33).

There are no previously recorded sites located in the Area 22 survey area. All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

Previously Recorded Sites

There are no previously recorded sites located in the Area 22 survey area (Figure 26).

Sites Recorded in the Current Investigation

WCP669 (Isolated find)

GDA (Zone 55): 767664.6417600

WCP669 is an isolated find consisting of a single unretouched quartz flake (Table 1). The site was located near (approximately 12 metres to the west) rock shelter site WCP671. Exposure was estimated to be 50 % with 50 % visibility in exposures. The site was located on a high gradient slope in an open forest environment.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low due to the presence of very thin to no soils on the high gradient slope, the likelihood of intact deposits is extremely low.

WCP670 (Isolated find)

GDA (Zone 55): 767848.6417514

WCP670 was located on a low gradient sloping valley floor environment. One retouched quartz flake was collected which was visible in an eroding vehicle track. Exposure was estimated to be 90 % with 90 % visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low due to the disturbed location of the site.

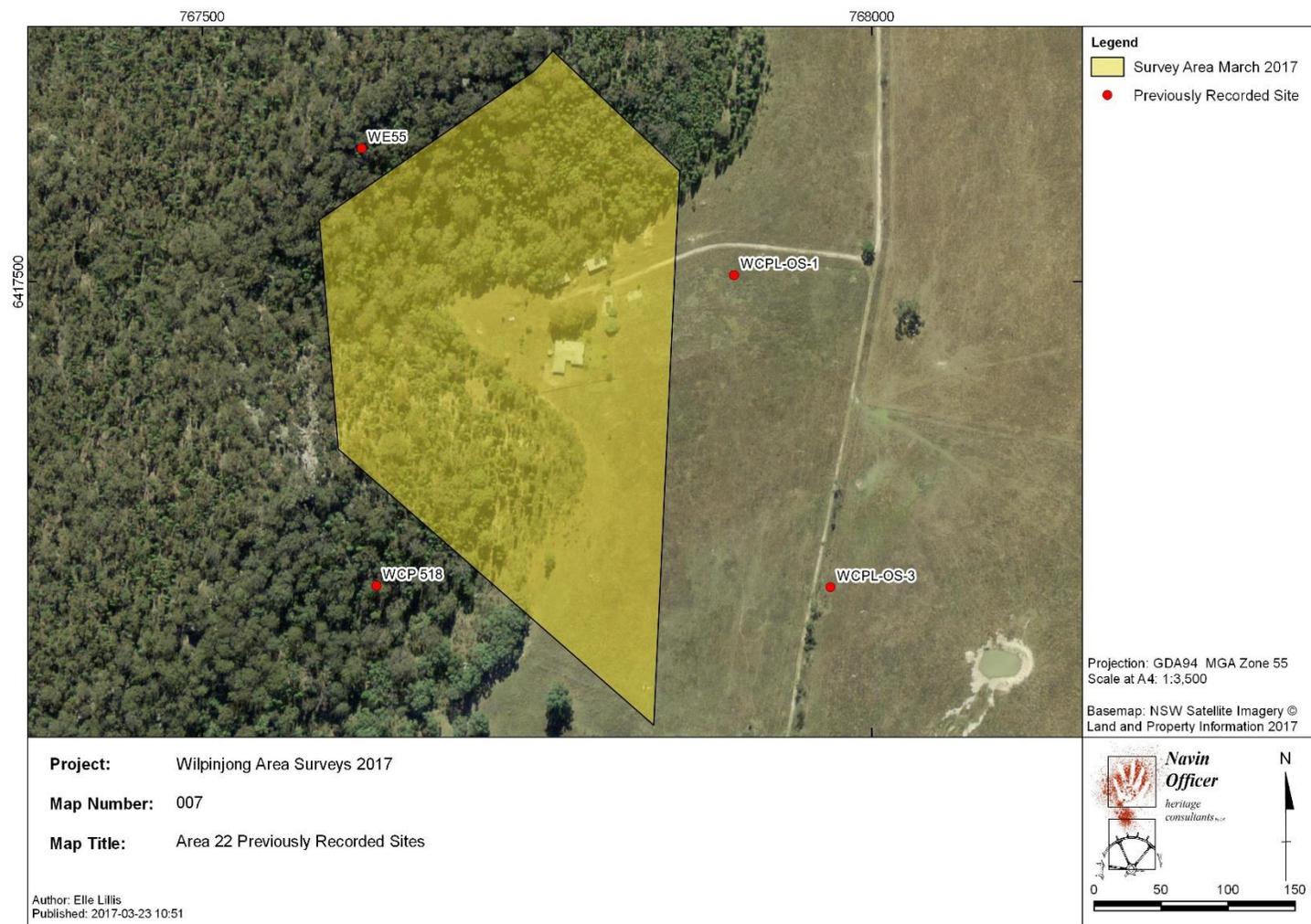
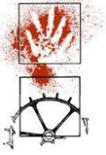


Figure 26: Previously recorded sites near Area 22



WCP671 (Rock shelter and PAD)

GDA (Zone 55): 767677.6417604

WCP671 is a rock shelter with PAD that was identified on high gradient upper slopes. The shelter is approximately 4.1 x 3.3 metres in size with a maximum height of 2.2 metres (Figure 27). The rock shelter has a slight overhang and opens to the east.

The shelter has a rocky shelf at the rear and becomes a soft silty deposit from the edge of the shelf to just beyond the overhang area. The silty deposit has been identified as PAD and is approximately 4.1 x 1.2 metres in size with a minimum depth of 40 cm.



Figure 27: WCP671 looking south west

WCP672 (Rock shelter and PAD)

GDA (Zone 55): 767681.6417624

WCP672 is located outside the of the Area 22 boundary and to the north west of WCP671. However, the nominal 20 metres buffer zone will extend into Area 22. This shelter opens to the south and the PAD and shelter are approximately the same size (Figure 28).

The shelter and PAD measures 3.5 x 2.5 metres and has a maximum height of 1.5 metres. The potential/ approximate PAD depth was not able to be determined.



Figure 28: WCP672 looking north

WCP673 (Rock shelter and PAD)

GDA (Zone 55): 767618.6417558

WCP673 was recorded on a moderate to steep gradient upper slope in an open forest environment. This shelter opens to the south east and the PAD and shelter are approximately the same size (Figure 29).

The shelter and PAD measures 3.5 x 2 metres and has a maximum height of 1.6 metres. The potential/ approximate PAD depth was not able to be determined.



Figure 29: WCP673 looking west

WCP674 (Rock shelter and PAD)

GDA (Zone 55): 767601.6417530

WCP674 is located on the upper slopes of a moderate to steep gradient crest. The rock shelter has experienced severe roof collapse at its opening and due to this a complete recording was not able to be undertaken (Figures 30 and 31).

The shelter was estimated to be at least 4 metres in height and 15 metres deep. The width was not able to be determined. It is not known if the rock shelter is associated with PAD as survey of the interior was not able to be completed due to the aforementioned collapse.



Figure 30: WCP674 looking west



Figure 31: WCP674 looking north



Figure 33 Locations of required buffers around rock shelter sites– Area 22



LITHIC DATA

Table 1: Lithic Item descriptions with site names and locations

ID	Revised Site Name	Area	Find #	GPS Easting	GPS Northing	Unit	Type	Weight	Material	Completeness	Initiation type	Platform type
207437	WCP669	Area 22	1	767664	6417601	Surface	Unretouched flake	0.93	Quartz, vein	Distal fragment	None	None
207438	WCP670	Area 22	2	767849	6417515	Surface	Retouched flake	12.61	Quartz, vein	Complete	Hertzian	Single
207450	WCP667	Area 8	1	770813	6416598	Surface	Core	2.03	Quartz, vein	Complete		
207449	BTEA008	Area 8	2	770803	6416540	Surface	Unretouched flake	1.21	Quartz, vein	Proximal fragment	Hertzian	Multiple
207446	BTEA008	Area 8	3	770800	6416538	Surface	Unretouched flake	2.91	Quartz, vein	Distal fragment	None	None
207445	BTEA008	Area 8	4	770800	6416539	Surface	Unretouched flake	0.46	Quartz, vein	Distal fragment	None	None
207447	BTEA008	Area 8	5	770798	6416542	Surface	Unretouched flake	34.89	Quartz, vein	Complete	Hertzian	Multiple
207448	BTEA008	Area 8	6	770796	6416540	Surface	Unretouched flake	1.3	Quartz, vein	Complete	Hertzian	Single
207435	BTEA008	Area 8	7	770794	6416542	Surface	Unretouched flake	1.05	Quartz, vein	Margin missing	Hertzian	Shattered
207436	BTEA008	Area 8	7	770794	6416542	Surface	Non-artefactual	1.37	Quartz, vein			
207453	BTEA008	Area 8	8	770791	6416544	Surface	Unretouched flake	0.44	Quartz, vein	Margin missing	Hertzian	Shattered
207456	BTEA008	Area 8	9	770786	6416542	Surface	Flaked piece	4.19	Quartz, vein			
207457	BTEA008	Area 8	10	770787	6416526	Surface	Non-artefactual	6.07	Quartz, vein			
207458	BTEA008	Area 8	10	770787	6416526	Surface	Unretouched flake	1.74	Quartz, vein	Complete	Bending	Multiple
207461	BTEA008	Area 8	11	770755	6416539	Surface	Core	24.35	Quartz, vein	Complete		
207455	WCP668	Area 8	12	770654	6416331	Surface	Unretouched flake	0.18	Quartz, vein	Complete	Hertzian	Shattered
207451	WCP541	Area 8	13	770631	6416248	Surface	Non-artefactual	1.3	Quartz, vein			
207462	WCP86	8AdjacentNW	14	770594	6416348	Surface	Unretouched flake	4.6	Quartz, vein	Margin missing	Hertzian	Single
207440	WCP86	8AdjacentNW	15	770598	6416348	Surface	Unretouched flake	1.97	Quartz, vein	Complete	Hertzian	Single
207443	WCP84	8AdjacentNW	16	770573	6416411	Surface	Unretouched flake	0.58	Chert	Complete	Hertzian	Single
207444	WCP84	8AdjacentNW	16	770573	6416411	Surface	Unretouched flake	0.27	Quartz, vein	Complete	Hertzian	Single



ID	Revised Site Name	Area	Find #	GPS Easting	GPS Northing	Unit	Type	Weight	Material	Completeness	Initiation type	Platform type
207439	WCP85	8AdjacentNW	17	770566	6416393	Surface	Unretouched flake	10.99	FGS	Complete	Hertzian	Single
207460	WCP85	8AdjacentNW	18	770563	6416396	Surface	Core	6.58	Chert	Complete		
207464	BTEA008	Area 8	19	770730	6416542	Surface	Unretouched flake	0.44	Quartz, vein	Distal fragment	None	None
207463	WCP187	Area 8	20	771218	6416804	Surface	Unretouched flake	1	Chert	Distal fragment	None	None
207441	WCP162	Area 8	21	771795	6416903	Surface	Flaked piece	8.7	Quartz, vein			
207442	WCP162	Area 8	22	771793	6416901	Surface	Unretouched flake	2.58	Quartz, vein	Distal fragment	None	None
207459	WCP162	Area 8	23	771794	6416903	Surface	Unretouched flake	1.52	Quartz, vein	Distal fragment	None	None
207433	WCP162	Area 8	24	771788	6416915	Surface	Unretouched flake	2.51	Quartz, vein	Distal fragment	None	None
207434	WCP162	Area 8	25	771788	6416915	Surface	Unretouched flake	0.69	Quartz, vein	Medial fragment	None	None
207421	WCP162	Area 8	26	771812	6416909	Surface	Non-artefactual	158.26	Quartz, vein			
207422	WCP162	Area 8	26	771812	6416909	Surface	Non-artefactual	4.8	Quartz, vein			
207426	WCP162	Area 8	27	771816	6416907	Surface	Unretouched flake	1.62	Quartz, vein	Complete	Hertzian	Single
207427	WCP162	Area 8	27	771816	6416907	Surface	Non-artefactual	9.64	Quartz, vein			
207428	WCP162	Area 8	27	771816	6416907	Surface	Non-artefactual	9.42	Quartz, vein			
207423	WCP162	Area 8	28	771816	6416906	Surface	Unretouched flake	1.52	Quartz, vein	Proximal fragment	Hertzian	Single
207424	WCP162	Area 8	28	771816	6416906	Surface	Unretouched flake	0.89	Quartz, vein	Distal fragment	None	None
207425	WCP162	Area 8	28	771816	6416906	Surface	Non-artefactual	9.02	Quartz, vein			
207429	WCP162	Area 8	29	771815	6416905	Surface	Non-artefactual	1.54	Quartz, vein			
207430	WCP162	Area 8	29	771815	6416905	Surface	Non-artefactual	2.4	Quartz, vein			
207432	WCP162	Area 8	30	771822	6416902	Surface	Unretouched flake	0.59	Quartz, vein	Margin missing	Hertzian	Shattered
207431	WCP162	Area 8	31	771820	6416900	Surface	Retouched flake	8.04	FGS	Distal fragment	None	None
207467	WCP85	8AdjacentNW	32	770554	6416414	Surface	Core	8.16	Quartz, vein	Broken		
207468	WCP85	8AdjacentNW	33	770556	6416414	Surface	Unretouched flake	1.82	Quartz, vein	Complete	Hertzian	
207469	WCP85	8AdjacentNW	33	770556	6416414	Surface	Unretouched flake	0.69	Quartz, vein	Distal fragment	None	



ID	Revised Site Name	Area	Find #	GPS Easting	GPS Northing	Unit	Type	Weight	Material	Completeness	Initiation type	Platform type
207470	WCP85	8AdjacentNW	33	770556	6416414	Surface	Unretouched flake	1.85	Quartz, vein	Margin missing	Hertzian	
207483	WCP85	8AdjacentNW	34	770555	6416413	Surface	Flaked piece	32.98	Quartz, vein	Complete		
207484	WCP85	8AdjacentNW	34	770555	6416413	Surface	Unretouched flake	1.91	Quartz, vein	Complete	Hertzian	
207485	WCP85	8AdjacentNW	34	770555	6416413	Surface	Unretouched flake	2.94	Quartz, vein	Distal fragment	None	
207471	WCP85	8AdjacentNW	35	770554	6416413	Surface	Unretouched flake	1.11	Quartz, vein	Distal fragment	None	
207472	WCP85	8AdjacentNW	35	770554	6416413	Surface	Unretouched flake	5.44	Quartz, vein	Proximal fragment	Hertzian	
207473	WCP85	8AdjacentNW	35	770554	6416413	Surface	Non-artefactual	1.47	Quartz, vein			
207465	WCP85	8AdjacentNW	36	770555	6416412	Surface	Unretouched flake	0.5	Quartz, vein	Distal fragment	None	
207478	WCP85	8AdjacentNW	37	770556	6416411	Surface	Non-artefactual	32.43	Silcrete			
207479	WCP85	8AdjacentNW	37	770556	6416411	Surface	Non-artefactual	1.91	Quartz, vein			
207466	WCP85	8AdjacentNW	38	770555	6416412	Surface	Unretouched flake	0.11	Chert	Distal fragment	None	
207474	WCP85	8AdjacentNW	39	770554	6416410	Surface	Non-artefactual	0.64	Quartz, vein			
207482	WCP85	8AdjacentNW	40	770554	6416410	Surface	Unretouched flake	0.16	Quartz, vein	Medial fragment	None	
207475	WCP85	8AdjacentNW	41	770551	6416406	Surface	Unretouched flake	2.99	Chert	Proximal fragment	Hertzian	
207476	WCP85	8AdjacentNW	41	770551	6416406	Surface	Unretouched flake	3.5	Quartz, vein	Complete	Hertzian	
207477	WCP85	8AdjacentNW	41	770551	6416406	Surface	Non-artefactual	0.13	Quartz, vein			
207452	WCP85	8AdjacentNW	42	770559	6416406	Surface	Unretouched flake	0.76	Quartz, vein	Distal fragment	None	
207454	WCP85	8AdjacentNW	43	770559	6416406	Surface	Unretouched flake	1.2	Quartz, vein	Complete	Hertzian	
207480	WCP84	8AdjacentNW	44	770574	6416410	Surface	Unretouched flake	0.14	Quartz, vein	Distal fragment	None	
207481	WCP84	8AdjacentNW	44	770574	6416410	Surface	Unretouched flake	0.57	Quartz, vein	LCS right	Hertzian	



Table 1 continued.

ID	Termination type	Cortex proportion	Dorsal scar direction	Length	Width	Thickness	Platform width	Platform thickness	Crazing	Crenated fracture	Potlidding	Exfoliation	Comments
207437	Feather	0	Same	15.49	13.3	3.84			0	0	0	0	
207438	Feather	0	Same	31.21	21.91	12.25	14.88	8.71	0	0	0	0	Region of retouch onto dorsal face on flake's distal left margin.
207450		0		15.83	16.54	4.33			0	0	0	0	Bipolar core. Flaking on front and back surfaces, from the proximal and distal ends of the core. Crushing on proximal and distal ends.
207449	None	0	Same	16.81	12.46	2.75	8.21	3.63	0	0	0	0	
207446	Feather	0	Same and opposite	16.68	21.15	3.33			0	0	0	0	
207445	Feather	0	Same	12.92	8.76	3.04			0	0	0	0	
207447	Hinge	0	Same	32.33	48.3	14.2	47.14	21.01	0	0	0	0	
207448	Feather	0	Same	13.77	13.53	5.13	9.2	3.75	0	0	0	0	
207435	Feather	0	Same	15.72	13.94	3.8			0	0	0	0	
207436									0	0	0	0	
207453	Feather	0	Same	18.1	9.14	1.69			0	0	0	0	
207456				18.57	15.63	7.59			0	0	0	0	
207457									0	0	0	0	
207458	Feather	0	Same	10.41	17.69	4.85			0	0	0	0	
207461		0							0	0	0	0	Double ended core.
207455	Feather	0	Same	11.77	8.07	1			0	0	0	0	
207451									0	0	0	0	
207462	Feather	0	Same	25.95	16.47	7.05			0	0	0	0	
207440	Feather	0	Same	13.86	21.96	3.82			0	0	0	0	
207443	Feather	0	Same	19.95	8.8	1.61	7.58	1.69	0	0	0	0	



ID	Termination type	Cortex proportion	Dorsal scar direction	Length	Width	Thickness	Platform width	Platform thickness	Crazing	Crenated fracture	Potlidding	Exfoliation	Comments
207444	Feather	0	Same	8.9	7.56	2.94			0	0	0	0	
207439	Feather	20	Oblique	36.1	17.43	6.63	9.9	3.47	0	0	0	0	
207460		0		19.96	25.61	9.08			0	0	0	0	Bipolar core. Flaking on front and back surfaces, from proximal and distal ends. Crushing on both proximal and distal end.
207464	Feather	0	Same	9.92	8.5	2.44			0	0	0	0	
207463	Hinge	0	Same	11.18	24.5	3.27			0	0	0	0	
207441				37.74	16.79	9.85			0	0	0	0	
207442	Feather	0	Same	21.42	14.1	3.64			0	0	0	0	
207459	Feather	0	Same	21.72	12.73	3.86			0	0	0	0	
207433	Feather	0	Same	21.77	13.9	5.87			0	0	0	0	
207434	None	0	Same	11.87	12.04	3.09			0	0	0	0	
207421									0	0	0	0	
207422									0	0	0	0	
207426	Step	0	Indeterminate	15.98	15.62	5.74			0	0	0	0	
207427									0	0	0	0	
207428									0	0	0	0	
207423	None	0	Same	15.06	11.78	5.37	8.42	3.94	0	0	0	0	
207424	Step	0	Indeterminate	10.36	9.28	4.51			0	0	0	0	
207425									0	0	0	0	
207429									0	0	0	0	
207430									0	0	0	0	
207432	Feather	0	Same	12.97	7.37	4.88			0	0	0	0	
207431	Feather	0	Indeterminate	31.27	22.82	6.55			0	0	0	0	Region of retouch onto ventral face on flake's right margin.



ID	Termination type	Cortex proportion	Dorsal scar direction	Length	Width	Thickness	Platform width	Platform thickness	Crazing	Crenated fracture	Potlidding	Exfoliation	Comments
207467		0		19.43	17.95	14.78			0	0	0	0	Two platform core, one flaked area truncated by breakage.
207468	Feather	0	Same	12.43	9.3	8.23	7.59	6.7	0	0	0	0	
207469	Feather	0	Same	10.54	10.56	2.83			0	0	0	0	
207470	Feather	0	Same	18.03	11.18	4.01			0	0	0	0	
207483				48.37	27.54	18.4			0	0	0	0	
207484	Feather	0	Same	14.69	17.4	3.7			0	0	0	0	
207485	Feather	60	Indeterminate	18.23	12.37	5.87			0	0	0	0	
207471	Feather	0	Same	10.6	19.17	3.6			0	0	0	0	
207472	None	0	Same	24.83	19.46	10.05			0	0	0	0	
207473									0	0	0	0	
207465	Feather	0	Same	9.41	11.44	3.14			0	0	0	0	
207478									0	0	0	0	
207479									0	0	0	0	
207466	Feather	0	Same	5.96	4.65	1.86			0	0	0	0	
207474									0	0	0	0	
207482	None	0	Same	8.9	8.92	1.39			0	0	0	0	
207475	None	80	Oblique	14.24	19.84	5.42			0	0	0	0	
207476	Feather	0	Same	25.69	12.18	6.98	2.98	1.24	0	0	0	0	
207477				9.81	4.73	2.94			0	0	0	0	
207452	Feather	0	Same	14.33	11.18	2.82			0	0	0	0	
207454	Feather	0	Same	13.94	14.39	3.26	10.74		0	0	0	0	
207480	Feather	0	Same	9.57	5.57	1.98			0	0	0	0	
207481	Feather	0	Same	15.58	6.75	3.65			0	0	0	0	



Area 8

Nine previously recorded sites are located in Area 8, seven of which (WCP79, WCP82, WCP160, WCP162, WCP187, WCP540, BTEA008) were re-found and re-assessed by this cultural heritage clearance works survey. BTEA006 and WCP540 were not able to be re-found. Two new sites (WCP667 and WCP668) were recorded in/near Area 8.

Previously recorded isolated finds and/or artefact scatters WCP162, WCP187, BTEA008 and newly recorded WCP667 were collected and these are now cleared for impact. Open artefact sites BTEA006 and WCP540 which were not able to be re-found are also cleared for impact.

WCP160 has been re-assessed as not a culturally modified tree. Due to this the scarred tree salvage methodology, does not need to be employed. WCP160 was also re-located in an area that has been previously cleared. There are no implications to revise this cleared area following this re-assessment of WCP160.

Consistent with the WCPL ACHMP rock shelters WCP82, WCP540 and WCP668, as well as, water hole WCP79 should be avoided by the project. Additionally, WCP543 outside of the Area 8 project boundary should be avoided with the nominal 20 metre buffer. This buffer will extend into the Area 8 project boundary.

If avoidance is not feasible at rock shelters WCP82, WCP540, WCP543, WCP668 and water hole, WCP79, then the extent and type of further work for rock shelter and water hole sites within the WCPL ACHMP needs to be resolved prior to their impact.

It is unclear if impacts to the water holes and rock shelters or the recommended salvage excavation is covered under the current WCPL ACHMP. If impacts are anticipated to the rock shelters or the water hole, then WCPL may require additional approvals from the Department of Planning.

Area 8 is cleared for impact in the area shown in Figure 17, this area avoids rock shelters WCP82, WCP540, WCP543 and WCP668 and water hole site, WCP79. Rock shelter and water hole sites WCP79, WCP82, WCP540, WCP543 and WCP668 should be fenced during the life of operations in Area 8 when mining operations come within 20 metres of these sites. Impacting these sites must be avoided.

Area 8 adjacent north west

Three previously recorded sites, WCP84, WCP85 and WCP86 are located in Area 8 adjacent north west. No new sites were recorded in this area.

Area 8 adjacent north west is re-cleared for impact excluding the area shown in Figure 25 as rock shelter site WCP85 must be avoided. Previously recorded isolated finds and/or artefact scatters WCP84, WCP85 (artefact scatter associated but outside the rock shelter component of WCP85) and WCP86 are re-cleared for impact excluding the buffer area around WCP85.

Consistent with the WCPL ACHMP rock shelter WCP85 should be avoided by the project. If avoidance is not feasible at rock shelter WCP85 then the extent and type of further work for rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.

It is unclear if impacts to the rock shelters or the recommended salvage excavation is covered under the current WCPL ACHMP. If impacts are anticipated to the rock shelters, then WCPL may require additional approvals from the Department of Planning.

Rock shelter site WCP85 should be fenced during the life of operations in Area 8 adjacent north west when mining operations come within the buffer zone area of this site. Impacting this site must be avoided until its significance is re-assessed by a qualified Archaeologist.



As WCP85 is located within a large weathering sandstone boulder a buffer extending 10 metres from the outermost point around the perimeter of the boulder should be used as the appropriate buffer zone. This is shown in Figure 25. Impacting WCP85 must be avoided.

Area 22

Six new sites, WCP669 to WCP674, comprising of four rock shelters and two isolated finds were recorded in Area 22. No previously recorded sites fall within Area 22.

Isolated find sites, WCP669 and WCP670 were collected during survey of Area 22 and are now cleared for impact.

Consistent with the WCPL ACHMP rock shelters WCP671, WCP672, WCP673 and WCP674 should be avoided by the project. If avoidance is not feasible at rock shelters WCP671, WCP672, WCP673 and WCP674, then the extent and type of further work for rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.

It is unclear if impacts to the rock shelters or the recommended salvage excavation is covered under the current WCPL ACHMP. If impacts are anticipated to the rock shelters, then WCPL may require additional approvals from the Department of Planning.

Area 22 is cleared for impact in the area shown in Figure 33, this area avoids rock shelters WCP671, WCP672, WCP673 and WCP674. Rock shelter sites WCP671, WCP672, WCP673 and WCP674 should be fenced during the life of operations in Area 22 when mining operations come within 20 metres of these sites. Impacting these sites must be avoided.

Recommendations:

1. Newly recorded Aboriginal sites WCP667 to WCP674 should be entered on the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:

WCP79 - 770895.6416691

WCP82 - 770834.6416614

WCP86 - 770595.6416348

WCP160 - 771674.6416978

WCP187 - 771217.6416804

WCP540 - 770626.6416276

BTEA008 - 770769.6416542

3. No further action is required for site WCP160. This has been assessed as not an Aboriginal modified tree.
4. Water hole site WCP79 and rock shelter sites WCP82, WCP85, WCP540, WCP543, WCP668, WCP671, WCP672, WCP673 and WCP674 should be avoided by the project. If avoidance is not feasible at these rock shelters and/or the water hole site, then the extent and type of further



work for rock shelter and/or water hole sites within the WCPL ACHMP needs to be resolved prior to their impact.

5. Area 8 is cleared for impact relative to Figure 17 which illustrates required buffer zones around rock shelter sites WCP82, WCP540 and WCP668 and water hole site WCP79. WCP543 outside of the Area 8 project boundary should also be avoided with the nominal buffer zone which extends into the Area 8 project boundary (Figure 17).
6. Area 8 adjacent north west is re-cleared for impact relative to the required buffer zone around rock shelter site WCP85 as shown in Figure 25.
7. Area 22 is cleared for impact relative to Figure 33 which illustrates required buffer zones around rock shelter sites WCP671, WCP672, WCP673 and WCP674.



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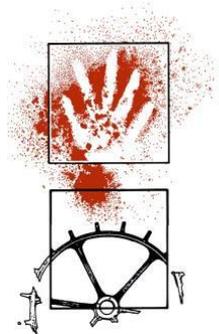
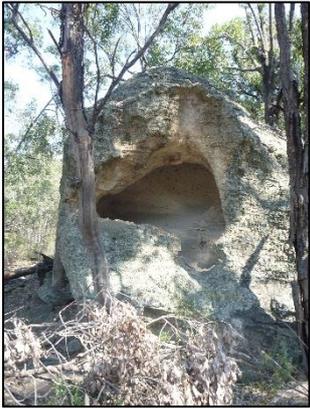
Wilpinjong Coal Mine

Aboriginal Cultural Heritage Clearance Works



September Clearance Areas and Powerline Easement

October 2017



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EXECUTIVE SUMMARY

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

This report documents Aboriginal cultural heritage clearance works for the Powerline and Areas 35, 34, 33, 31, 30, 29, 27, 26, 25, and Part of 12. The assessment includes locations within the Wilpinjong Coal Pty Ltd project approval boundary.

The Powerline and Areas 35, 34, 33, 31, 30, 29, 27, 26, 25, and Part of 12 are within the project approval boundary and are subject to the Wilpinjong Coal Mine Aboriginal Cultural Heritage Management Plan (ACHMP). Surface salvage and area clearance actions were undertaken at these sites.

Twelve new Aboriginal site recordings, WCP696 through to WCP707 were identified within the Wilpinjong project boundary in Areas Powerline, 12 (Part), 25, 26, 29, 31 and 35 as a result of this assessment.

Therefore, the recommendations for the following Areas are:

Powerline

One previously lodged site recording occurs in the Powerline Area:

WCP558 – Artefact Scatter (Kuskie 2013)

Five new sites (WCP696 to WCP699) were recorded in the Powerline Area.

Recommendations:

1. Newly recorded Aboriginal sites (WCP696, WCP697, WCP698 and WCP699) should be entered on the Wilpinjong sites database.
2. The Powerline is cleared for impact relative to Figure 2, excluding the Environmental Conservation Area.

Part of Area 12

There are eight previously lodged site recordings that occur in Area 12:

268 – Open Artefact Site (NOHC 2005)

269 – Open artefact Site (NOHC 2005)

270 – Open artefact Site (NOHC 2005)

271 – Open artefact Site (NOHC 2005)

272 – Open artefact Site (NOHC 2005)

One site (271) was not relocated by the current survey.

One new site (WCP700) was recorded in Area 12.



Recommendations:

1. Newly recorded Aboriginal site (WCP700) should be entered on the Wilpinjong sites database.
2. Area 12 (Part) is cleared for impact relative to Figure 10.

Area 25

There are no previously lodged site recordings that occur in Area 25.

One new site (WCP701) was recorded in Area 25.

Recommendations:

1. Newly recorded Aboriginal site (WCP701) should be entered on the Wilpinjong sites database.
2. Area 25 is cleared for impact relative to Figure 17.

Area 26

There are no previously lodged site recordings that occur in Area 26.

One new site (WCP702) was recorded in Area 26.

Recommendations:

1. Newly recorded Aboriginal site (WCP702) should be entered on the Wilpinjong sites database.
2. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the rock shelter site then the extent and type of further work for rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.
3. Area 26 is cleared for impact relative to Figure 19 with buffer zone around rock shelter site WCP702.

Area 27

There are no previously lodged site recordings that occur in Area 27.

No new sites were recorded in Area 27.

Recommendations:

1. Area 27 is cleared for impact relative to Figure 20.

Area 29

Six previously lodged site recordings occur in Area 29:

WCP162 – Artefact Scatter (NOHC 2005)

WCP547 – Artefact Scatter (Kuskie 2013)

WCP548 – Artefact Scatter (Kuskie 2013)

WCP549 – Artefact Scatter (Kuskie 2013)

WCP550 – Artefact Scatter (Kuskie 2013)



WCP551 – Artefact Scatter (Kuskie 2013)

Sites WCP551, WCP550 and WCP73 were not able to be relocated by the current survey.

One new site (WCP703) was recorded in Area 29.

Recommendations:

1. Newly recorded Aboriginal site (WCP703) should be entered on the Wilpinjong sites database.
2. Area 29 is cleared for impact relative to Figure 27.

Area 30

Two previously lodged site recordings occur in Area 30:

WCP71 – Isolated Find (NOHC 2005)

WCP73 – Isolated Find (NOHC 2005)

Sites WCP71 and WCP73 were not relocated in the current survey.

No new sites were recorded in Area 30.

Recommendations:

1. Area 30 is cleared for impact relative to Figure 28.

Area 31

No previously lodged site recordings occur in Area 31.

Three new sites (WCP704 to WCP706) were recorded in Area 31.

Recommendations:

1. Newly recorded Aboriginal site (WCP704, WCP705 and WCP706) should be entered on the Wilpinjong sites database.
2. Area 31 is cleared for impact relative to Figure 32.

Area 33

No previously lodged site recordings occur in Area 33:

No new sites were recorded in Area 33.

Recommendations:

1. Area 33 is cleared for impact relative to Figure 33.

Area 34

No previously lodged site recordings occur in Area 34.

No new sites were recorded in Area 34.

Recommendations:



1. Area 34 is cleared for impact relative to Figure 34

Area 35

No previously lodged site recordings occur in Area 35.

One new site (WCP707) was recorded in Area 35.

Recommendations:

1. Newly recorded Aboriginal site (WCP707) should be entered on the Wilpinjong sites database.
2. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the rock shelter site then the extent and type of further work for rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.
3. Area 35 is cleared for impact relative to Figure 36 with buffer zones around rock shelter site WCP707.



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BACKGROUND

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

In 2006 Project Approval was granted under Section 75J of the *Environmental Planning and Assessment Act 1979* (Project Approval 05-0021). In the same year, the mine was purchased by Peabody Energy. The conditions of the Project Approval included the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) and a range of specified requirements in relation to identified heritage sites (WCPL 2006).

The ACHMP includes an Ancillary Disturbance Area Protocol which includes:

1. Pre-clearance archaeological survey (conducted with the assistance of Aboriginal representatives). This survey would include consideration of the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage.
2. Avoidance of the identified Aboriginal object/sites by realigning or adjusting infrastructure/disturbance area if practicable.

If the object/site cannot be avoided:

1. Consider surface salvage (advice from Aboriginal representatives and/or an archaeologist will be sought).
2. If relevant, consider the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage (subject to review of the ACHMP and consultation with Aboriginal representatives and/or an archaeologist).
3. Conduct surface salvage (and subsurface salvage if necessary) with the assistance of Aboriginal representatives and an archaeologist.
4. Store salvaged artefacts in the "Keeping Place".
5. Post-rehabilitation, replace artefacts onto the rehabilitated landform.

Surface Salvage

The ACHMP specifies that surface salvage will involve the systematic recovery of all evident surface artefacts from a representative sample of open artefact scatters and from selected isolated finds at known sites within the project disturbance area. Surface collections will occur on a progressive basis prior to the commencement of ground surface disturbance works within an area.

A basic level of recording will be conducted on all recovered artefactual surface material including location, technological traits, and stone type. This analysis has been conducted by a qualified lithic specialist, Dr Oliver Macgregor.

This Report

This report presents the results of a pre-clearance archaeological survey and surface salvage of the Powerline and Areas 35, 34, 33, 31, 30, 29, 27, 26, 25, and Part of 12 inside the project approval boundary.

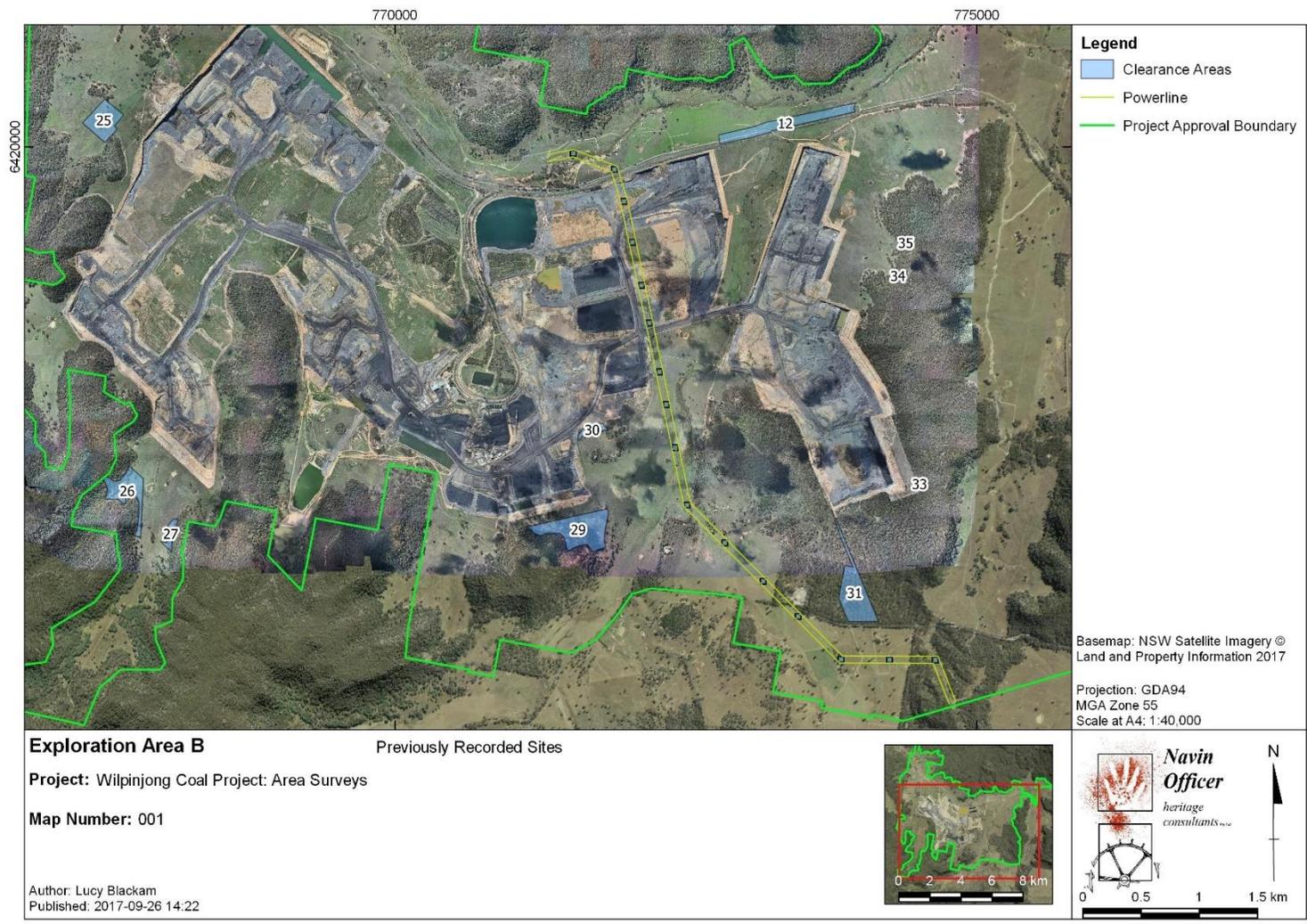


Figure 1 Location of the Powerline and Clearance Areas



SURFACE SALVAGE

POWERLINE

The Powerline shown in yellow in Figure 2 had clearance salvage and was surveyed as part of this exploration clearance work program on 20th September 2017.

Clearance Survey Results

Summary

One previously lodged site recordings occur in The Powerline.

WCP558 – Open Artefact Site (Kuskie 2013)

Five new sites were recorded in the Powerline.

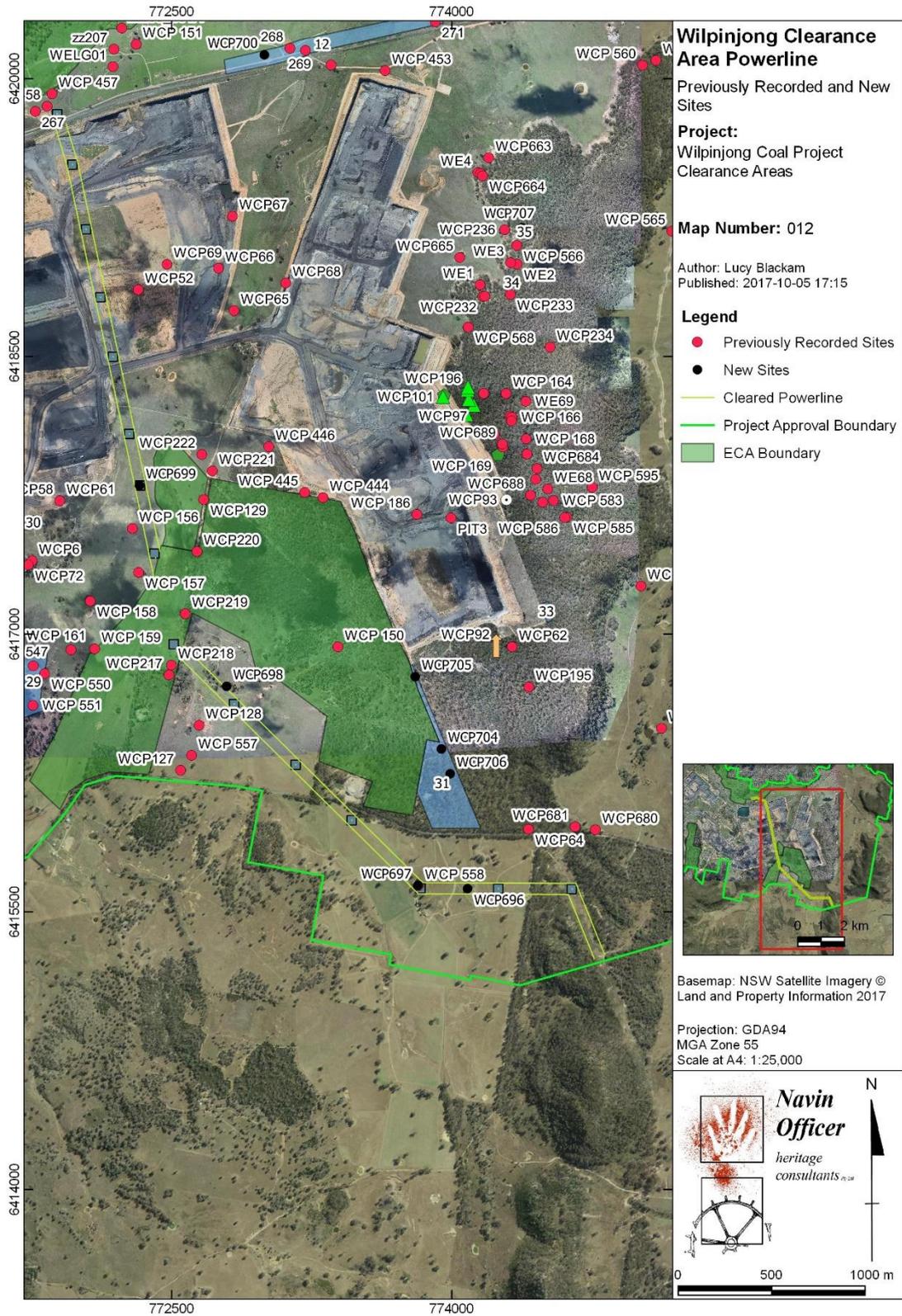
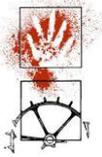


Figure 2 Previously Recorded Sites in Powerline Easement



Previously Recorded Sites

WCP558

GDA (Zone 55) 773820.6415640

WCP558 was recorded as an artefact scatter of two artefacts. During this investigation seven lithic items were collected in a 20 x 5 metre area (Figure 3). Four lithic items were determined to be artefactual, three lithic items were found to be non-artefactual.

The site consists of four unretouched flakes of quartz vein material (Table 1).

The site is located on an exposure. The erosional scour is on the top of a basal slope with an aspect to the west. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure was estimated to be 50% with 90% visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 3 WCP558 facing west



Sites Recorded in the Current Assessment

Four new sites were found during the current assessment. These sites were isolated finds and were designated WCP696, WCP697, WCP698 and WCP699.

WCP696

GDA (Zone 55) 774084.6415624

WCP696 is an isolated find located on a flat in a cleared paddock. The aspect of the site was open with a flat gradient (Figure 4). Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure incidence was estimated to be 30 % with 50 % visibility in exposures. WCP696 comprises of a broken quartzite core (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 4 WCP696 facing west



WCP697

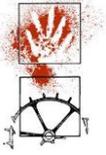
GDA (Zone 55) 773818.6415641

WCP697 is an isolated find located on a flat in a cleared paddock. The aspect of the site was open with a flat gradient (Figure 5). Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure incidence was estimated to be 30 % with 50 % visibility in exposures. WCP697 comprises of an unretouched flake of quartz vein material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 5 WCP697 facing west



WCP698

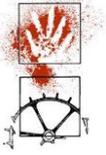
GDA (Zone 55) 772793.6416717

WCP698 is an isolated find located on exposure on a slope in a cleared paddock. The aspect of the site was south with a low gradient (Figure 6). Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure incidence was estimated to be 40 % with 60 % visibility in exposures. WCP698 comprises of a broken core of quartz vein material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 6 WCP698 facing west



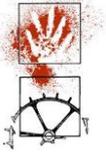
CL7

GDA (Zone 55)

CL7 is an isolated find located on an exposure scour on a slope. The aspect of the site was south with a low gradient (Figure 7). Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure incidence was estimated to be 30 % with 50 % visibility in exposures. CL7 comprises of a non-artefactual lithic item of quartz vein material (Table 1).



Figure 7 CL7 facing south



WCP699

GDA (Zone 55) 772326.6417802

WCP699 is an isolated find located on an exposure scour on a stream bank that has occurred when flooding of the nearby creek has arisen. The aspect of the site was east with a low gradient (Figure 8). Ground surface disturbance consisted of previous surface water wash, clearing, farming and stock animal activity. Exposure incidence was estimated to be 40 % with 80 % visibility in exposures. WCP699 comprises of an unretouched flake of quartzite material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 8 WCP699 facing north

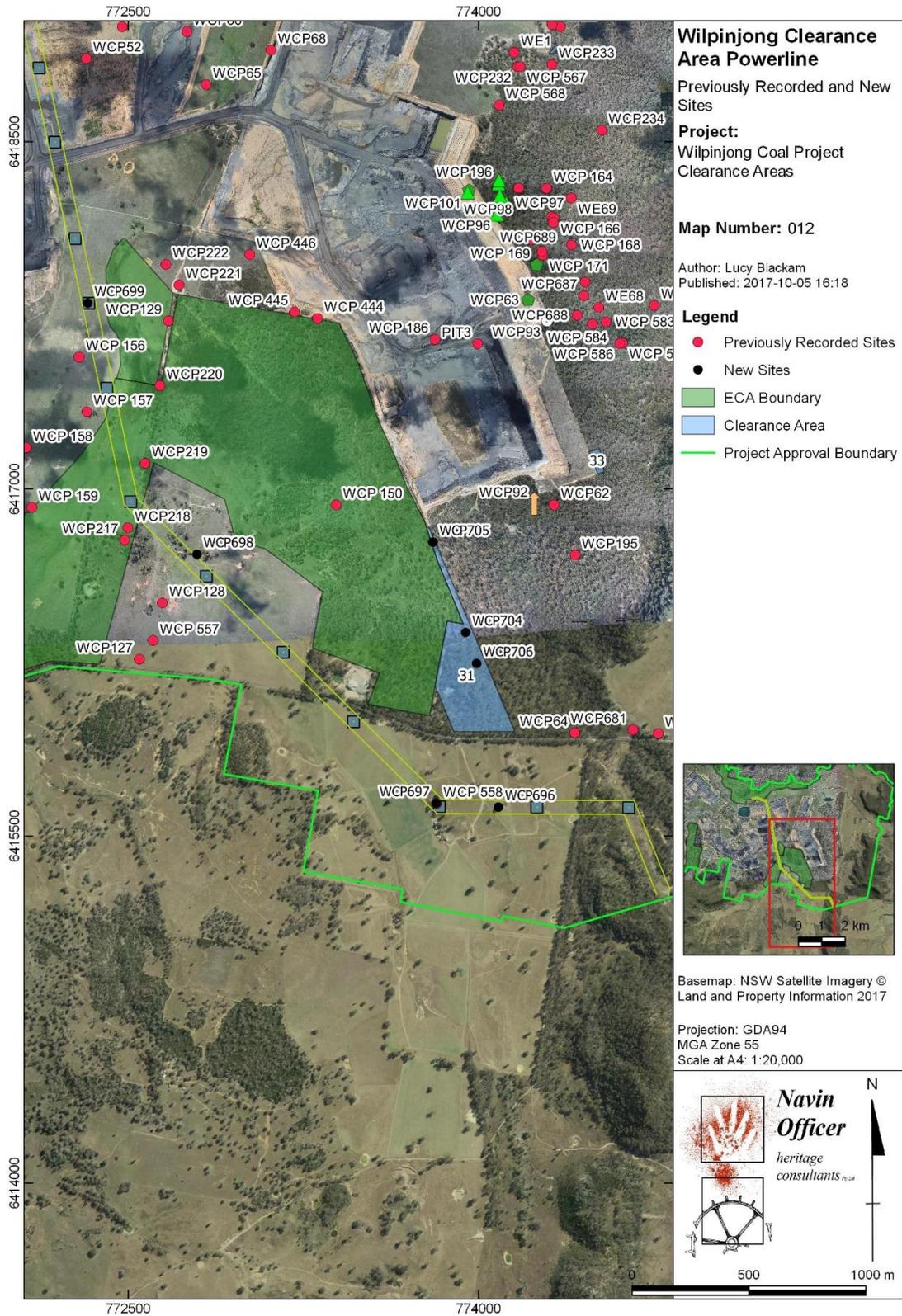
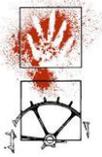


Figure 9 Previously Recorded and Newly Recorded Sites of Powerline Easement



PART OF AREA 12

Area 12 shown in blue in Figure 10 was surveyed as part of this exploration clearance work program on 22nd September 2017.

Clearance Survey Results

Summary

There are eight previously lodged site recordings that occur in Part of Area 12:

268 – Open Artefact Site (NOHC 2005)

269 – Open artefact Site (NOHC 2005)

270 – Open artefact Site (NOHC 2005)

271 – Open artefact Site (NOHC 2005)

272 – Open artefact Site (NOHC 2005)

One new site was recorded in Area 12,



Figure 10 Previously Recorded Sites of Area 12 (Part)



Previously Recorded Sites

WCP268

GDA (Zone 55) 773133.6420164

WCP268 was recorded as an isolated find. During this investigation one lithic items were collected in a 1 x 1 metre area (Figure 11). One lithic items was determined to be artefactual.

The site consists of one unretouched flake of quartz vein material (Table 1).

The site is located on the edge of an existing dam. The exposure was on a slope with an aspect to the north and a low gradient. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure was estimated be 40% with 80% visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 11 268 facing north



WCP269

GDA (Zone 55)773216.6420153

WCP269 was recorded as an artefact scatter. During this investigation nine lithic items were collected in a 5 x 3 metre area (Figure 12). Five lithic items were determined to be artefactual, four lithic items of quartz vein material were found to be non-artefactual.

The site consists of one core, and four unretouched flakes made of chert and quartz vein materials (Table 1).

The site is located on an exposure on a flat with an open aspect and a flat gradient. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure was estimated to be 50% with 70% visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 12 269 facing west north west



WCP270

GDA (Zone 55) 773795.6420344

WCP270 was recorded as an artefact scatter. During this investigation two lithic items were collected in a 5 x 2 metre area (Figure13). two lithic items were determined to be artefactual.

The site consists of one hammer and one unretouched flake, both artefacts were of quartz vein material (Table 1).

The site is located on an exposure on a stream channel with a low gradient and west aspect. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure was estimated be 40% with 80% visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 13 270 facing east



WCP272

GDA (Zone 55) 773879.6420362

WCP272 was recorded as an isolated find. During this investigation one lithic items was collected in a 1 x 1 metre area (Figure 14).

The site consists of one unretouched flake of quartz vein material (Table 1).

The site is located on an exposure on an existing access track with a flat gradient and open aspect. Ground surface disturbance consisted of previous clearing, vehicle activity, farming and stock animal activity. Exposure was estimated be 40% with 90% visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 14 272 facing east



Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an isolated find which was subsequently collected. This site has been designated WCP700.

WCP700

GDA (Zone 55) 772995.6420128

WCP700 is an isolated find located on a flat in a cleared paddock. The aspect of the site was open with a flat gradient (Figure 15). Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure incidence was estimated to be 30 % with 70 % visibility in exposures. WCP700 comprises of an unretouched flake of quartz vein material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 15 WCP700 facing north



AREA 25

Area 25 shown in blue in Figure 17 had clearance salvage and was surveyed as part of this exploration clearance work program on 22nd September 2017.

Clearance Survey Results

Summary

There are no previously lodged site recordings occur in Area 25.

One new site was recorded in Area 25.



Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an artefact scatter which was subsequently collected. This site has been designated WCP701

WCP701

GDA (Zone 55) 767563.6420124

WCP701 is an artefact scatter located on a slope with a low gradient and a north-east aspect (Figure 16). Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure incidence was estimated to be 30 % with 50 % visibility in exposures. WCP701 comprises of an unretouched flake of quartz vein material and a scraper flake of fine grained siliceous material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 16 WCP701 facing south west



Figure 17 Newly Recorded Sites in Area 25



AREA 26

Area 26 shown in blue in Figure 19 had clearance salvage and was surveyed as part of this exploration clearance work program on 21st September 2017.

Clearance Survey Results

Summary

There are no previously lodged site recordings occur in Area 26.

One new site was recorded in Area 26.



Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was a Rock shelter (Figure 18). This site has been designated WCP702.

The site is relatively undisturbed and is located on a low gradient slope with an easterly aspect in an open forest environment. The rockshelter is close to the valley floor of an area that has been disturbed by farming impacts.

The rock shelter is approximately 3 x 1.5 metres and has a maximum height of 4 metres and a minimum height of 60 cm at the back of the shelter.

WCP702

GDA (Zone 55) 767696.6417218



Figure 18 WCP702 facing south



Figure 19 New sites recorded in the current investigation in Area 26



AREA 27

Area 27 shown in blue in Figure 20 had clearance salvage and was surveyed as part of this clearance work program on 21st September 2017.

Clearance Survey Results

Summary

There are no previously lodged site recordings occur in Area 27.

No new sites were recorded in Area 27.

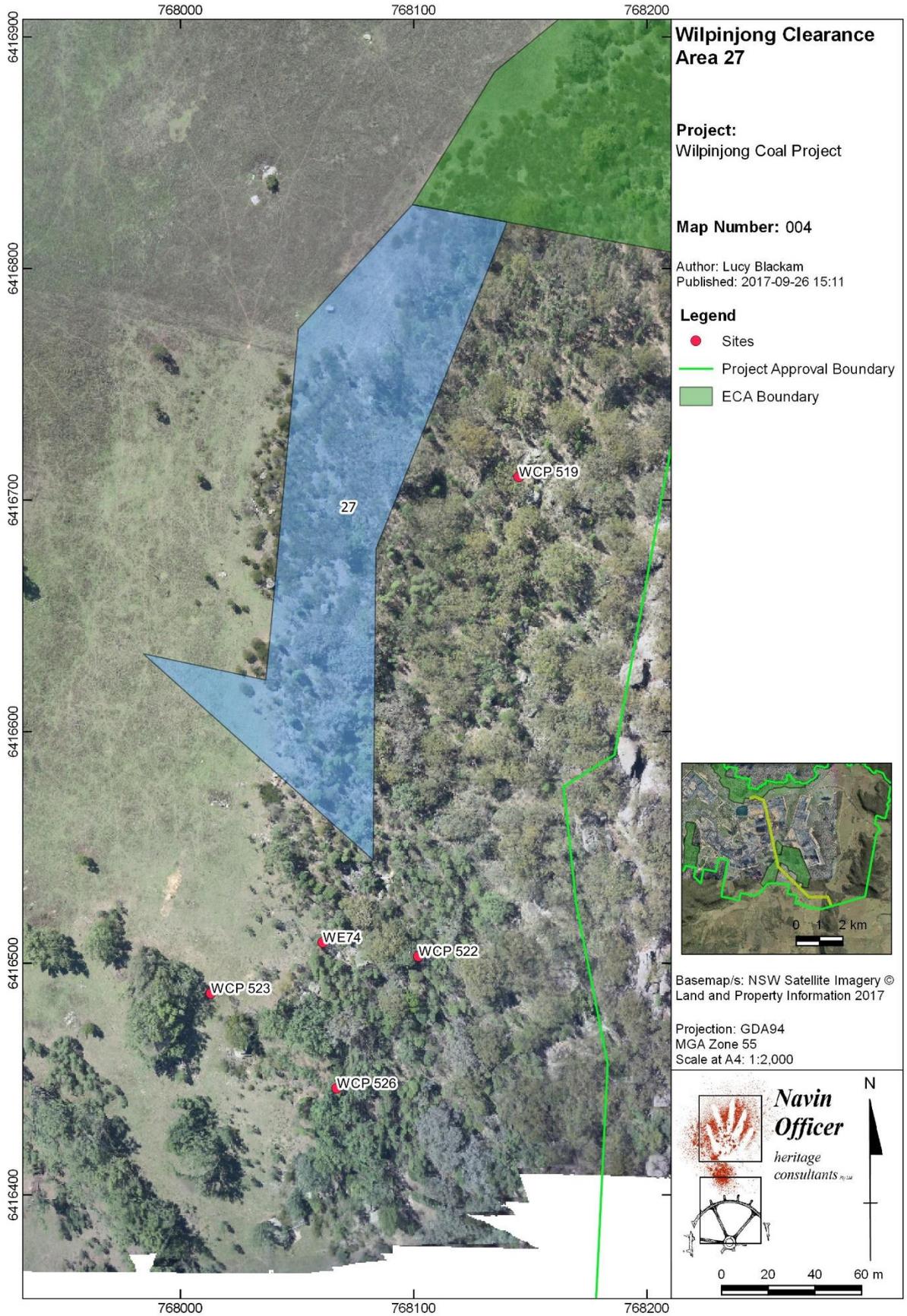


Figure 20 Area 27



AREA 29

Area 29 shown in blue in Figure 21 had clearance salvage and was surveyed as part of this exploration clearance work program on 21st September 2017.

Clearance Survey Results

Summary

Six previously lodged site recordings occur in Area 29.

WCP162 – Artefact Scatter (NOHC 2005)

WCP547 – Artefact Scatter (Kuskie 2013)

WCP548 – Artefact Scatter (Kuskie 2013)

WCP549 – Isolated Find (Kuskie 2013)

WCP550 – Artefact Scatter (Kuskie 2013)

WCP551 – Artefact Scatter (Kuskie 2013)

Sites WCP551, WCP550 and WCP73 were not able to be relocated by the current survey.

One new site was (WCP703) recorded in Area 29.

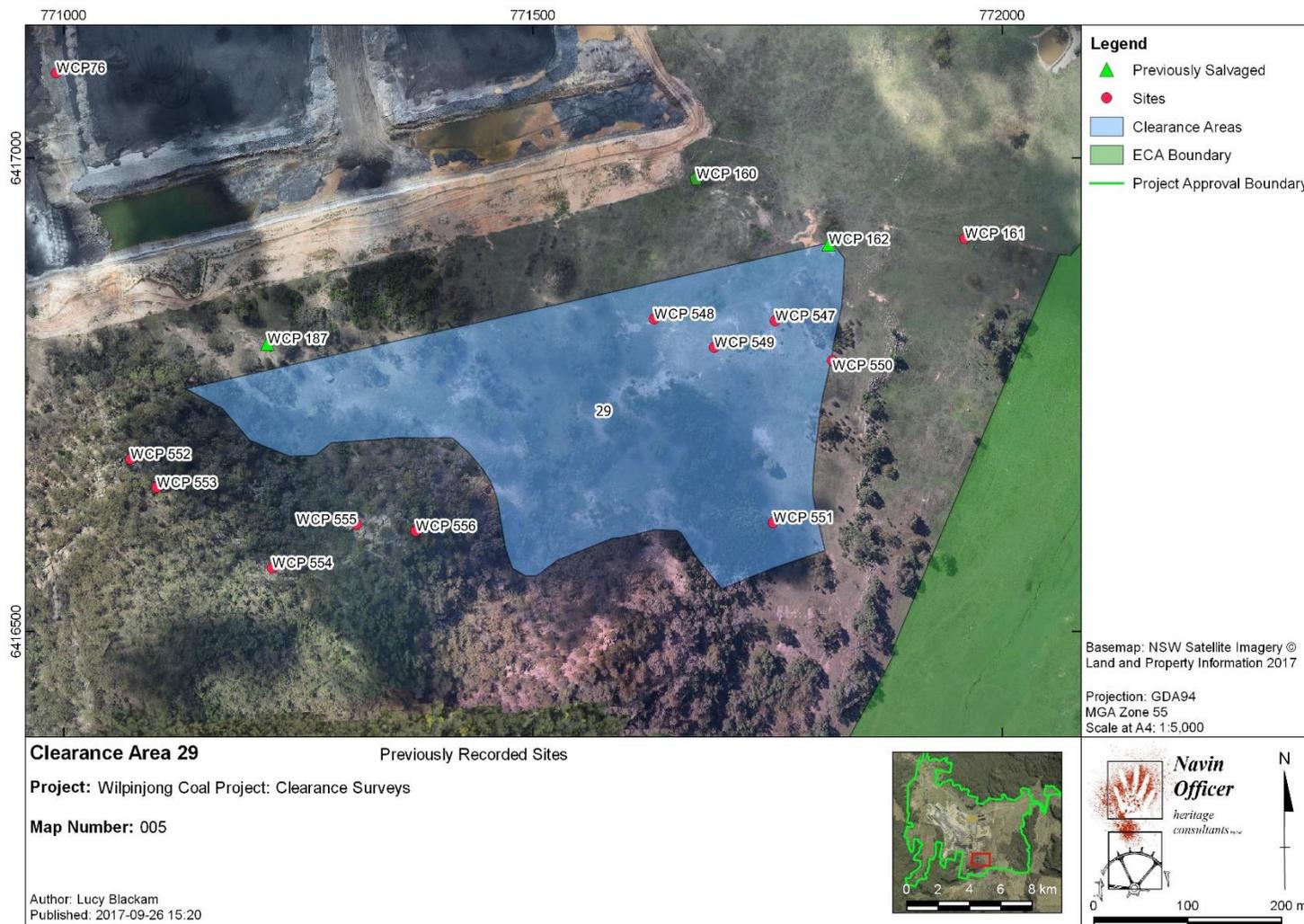


Figure 21 Previously recorded sites in Area 29



Previously Recorded Sites

WCP162

GDA (Zone 55) 771815.6416909

WCP162 was recorded as an artefact scatter of twelve artefacts. WCP162 was previously collected in NOHC (2017). During this investigation three lithic items were collected in a 40 x 40 metre area (Figure 22). Two lithic items were determined to be artefactual.

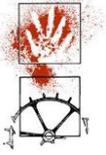
The site consists of one unretouched flake of chert material and one unretouched flake of quartz vein material (Table 1).

The site is located on an exposure and has been previously collected in other surveys. The erosional scour is on the base of a basal slope. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. Exposure was estimated be 90% with 90% visibility in exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 22 WCP162 facing north



WCP547

GDA (Zone 55) 771758.6416828

WCP547 was recorded as an artefact scatter of two artefacts. During this investigation two lithic items were collected in a 2 x 2 metre area (Figure 23). Two lithic items were determined to be artefactual.

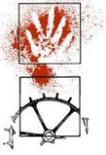
The site consists of two unretouched flakes of quartz vein material (Table 1).

The site is located on an exposure on a slope with a low gradient and a north-east aspect. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. The exposure incidence was 40% with 60% visibility within exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 23 WCP547 facing south west



WCP548

GDA (Zone 55) 771629.6416830

WCP548 was recorded as an artefact scatter of four artefacts. During this investigation sixteen lithic items were collected in a 10 x 5 metre area (Figure 24). Ten lithic items were determined to be artefactual, six lithic items of quartz vein material were found to be non-artefactual.

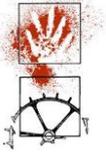
The site consists of ten unretouched flakes of quartz vein material (Table 1).

The site is located on an exposure on a slope with a low gradient and a south-east aspect. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. The exposure incidence was 40% with 70% visibility within exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 24 WCP548 facing north



WCP549

GDA (Zone 55) 771693.6416800

WCP549 was recorded as an isolated find. During this investigation six lithic items were collected in a 10 x 5 metre area (Figure 25). Two lithic items were determined to be artefactual, four lithic items of quartz vein material were found to be non-artefactual.

The site consists of one core of quartz vein material and one unretouched flake of quartz vein material (Table 1).

The site is located on an exposure on a crest with a moderate gradient and a south-east aspect. Ground surface disturbance consisted of previous clearing, farming and stock animal activity. The exposure incidence was 40% with 70% visibility within exposures.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low given the evident disturbance from erosion.



Figure 25 WCP549 facing west



Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an isolated find which was subsequently collected. This site has been designated WCP703.

CL19

CL19 is an isolated find located on a crest with a moderate gradient and an easterly aspect in an open forest (Figure 26). Ground surface disturbance consisted of surface water wash and animal tracks. Exposure incidence was estimated to be 30 % with 70 % visibility in exposures. CL19 was a non-artefactual lithic item.

WCP703

GDA (Zone 55) 771623.6416757

WCP703 is an isolated find located on a crest with a moderate gradient and an easterly aspect in an open forest (Figure 26). Ground surface disturbance consisted of surface water wash and animal tracks. Exposure incidence was estimated to be 30 % with 70 % visibility in exposures. WCP703 comprises of a quartz core (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 26 WCP703 facing west

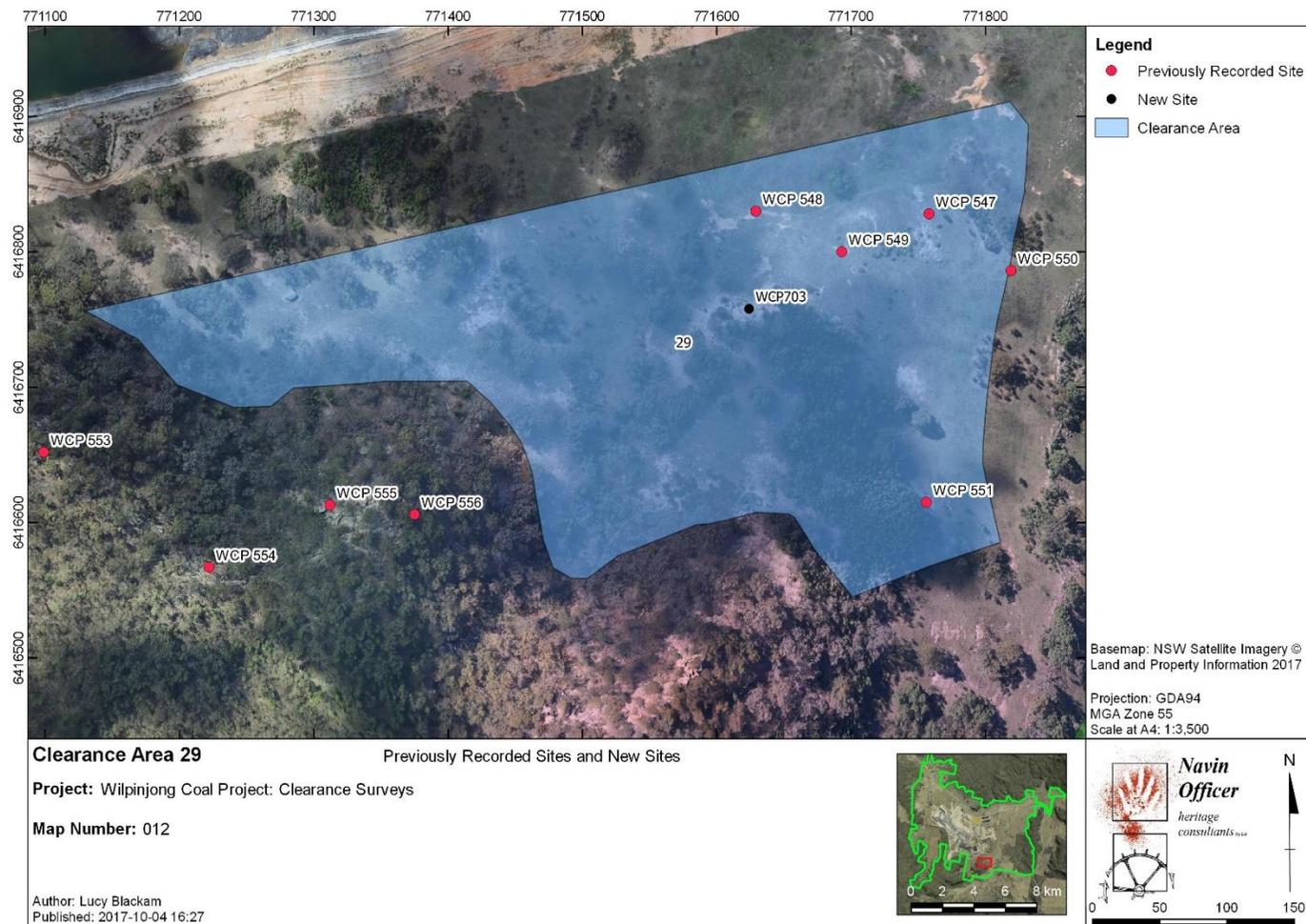


Figure 27 Previously recorded sites and new sites recorded in the current investigation in Area 29



AREA 30

Area 30 shown in blue in Figure 28 had clearance salvage and was surveyed as part of this exploration clearance work program on 21st September 2017.

Clearance Survey Results

Summary

Two previously lodged site recordings occur in Area 30.

WCP71 – Isolated Find (NOHC 2005)

WCP73 – Isolated Find (NOHC 2005)

Sites WCP71 and WCP73 were not relocated in the current survey.

No new sites were recorded in Area 30.



Figure 28 Previously recorded sites in Area 30



AREA 31

Area 31 shown in blue in Figure 32 had clearance salvage and was surveyed as part of this exploration clearance work program on 20th September 2017.

Clearance Survey Results

Summary

No previously lodged site recordings occur in Area 31.

Three new sites were recorded in Area 31.



Sites Recorded in the Current Assessment

Three new sites were found during the current assessment. These sites were all isolated finds and were subsequently collected. These sites have been designated WCP704, WCP705 and WCP706

WCP704

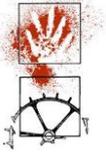
GDA (Zone 55) 773944.6416379

WCP704 is an isolated find located on the flat in an open forest on a possible road track. The aspect of the site was open (Figure 29). Exposure incidence was estimated to be 30 % with 90 % visibility in exposures. WCP704 comprises of an unretouched flake of quartz vein material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 29 WCP704 facing east



WCP705

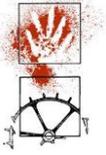
GDA (Zone 55) 773803.6416769

WCP705 is an isolated find located on the flat in an open forest on an existing road track. The aspect of the site was open (Figure 30). Exposure incidence was estimated to be 30 % with 70 % visibility in exposures. WCP705 comprises of an unretouched flake of chert material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 30 WCP705 facing north



WCP706

GDA (Zone 55) 773991.6416245

WCP706 is an isolated find located in a drainage line in an open forest. The gradient of the site was low and aspect of the site was north (Figure 31). Exposure incidence was estimated to be 40 % with 60 % visibility in exposures. WCP706 comprises of an unretouched flake of quartz vein material (Table 1).

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is low.



Figure 31 WCP706 facing north

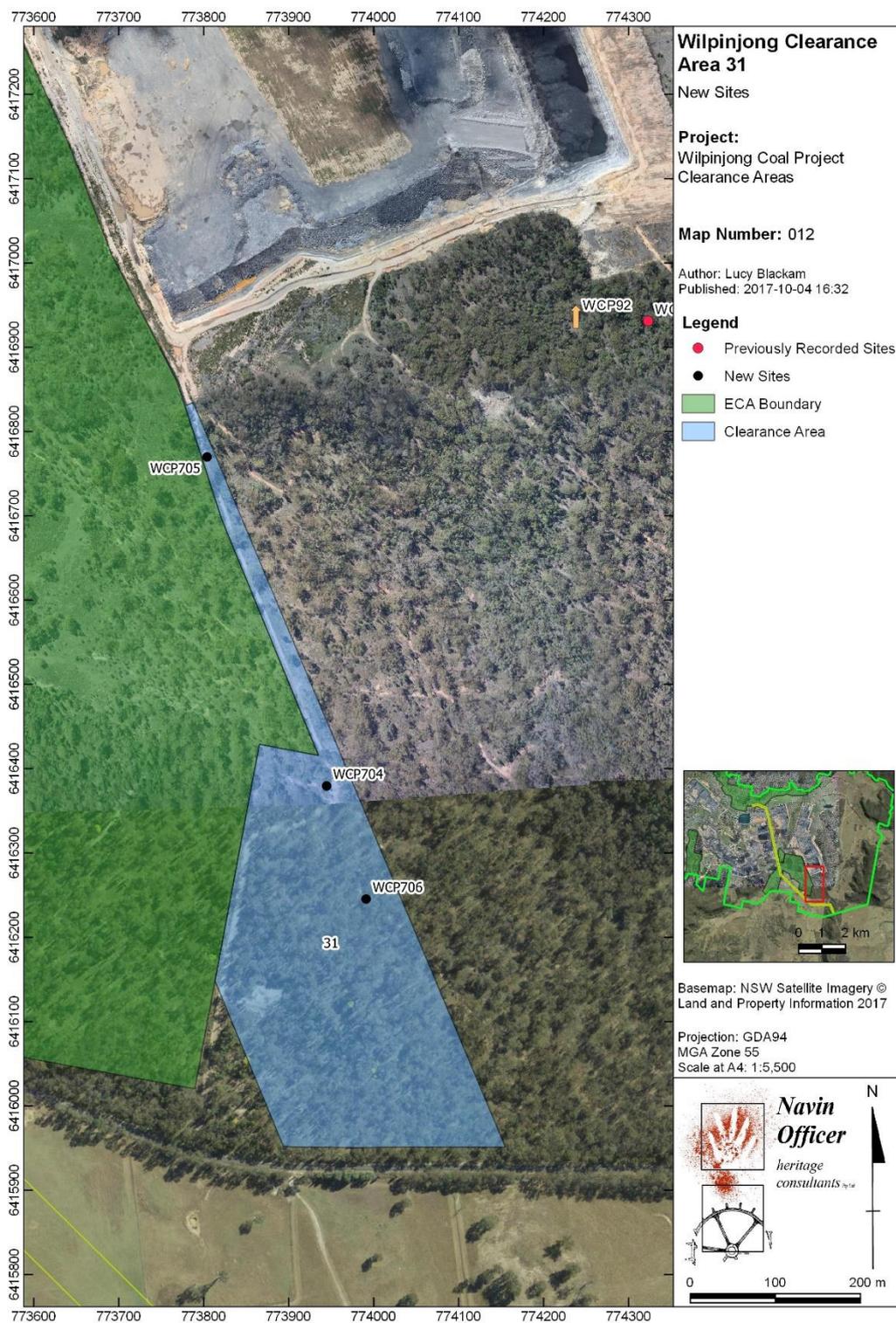


Figure 32 Previously recorded sites and new sites recorded in Area 31



AREA 33

Area 33 shown in blue in Figure 33 had clearance salvage and was surveyed as part of this exploration clearance work program on 21st September 2017.

Clearance Survey Results

Summary

No previously lodged site recordings occur in Area 33.

No new sites were recorded in Area 33.



Figure 33 Previously recorded sites and sites recorded in the current investigation in Area 33



AREA 34

Area 34 shown in blue in Figure 34 had clearance salvage and was surveyed as part of this exploration clearance work program on 21st September 2017.

Clearance Survey Results

Summary

No previously lodged site recordings occur in Area 34.

No new sites were recorded in Area 34.



Figure 34 Previously recorded sites and sites recorded in the current investigation in Area 34



AREA 35

Area 35 shown in blue in Figure 36 had clearance salvage and was surveyed as part of this exploration clearance work program on 21st September 2017.

Clearance Survey Results

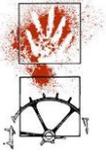
Summary

No previously lodged site recordings occur in Area 35.

One new site (WCP707) was recorded in Area 35.

Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was a rock shelter. This site has been designated WCP707



WCP707

GDA (Zone 55) 774374.6419194

WCP707 consists of a rock shelter (Figure 35). The site is relatively undisturbed and is located on a moderate gradient slope in an open forest environment and is surrounded by further sandstone outcropping formations of the same type of material.

The rock shelter is approximately 3 x 1.5 metres and has a maximum height of 4 metres and a minimum height of 60 cm at the back of the shelter.



Figure 35 R2 facing west

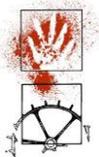


Figure 36 New sites recorded in the current investigation in Area 35

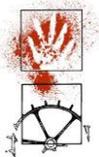


Table 1 Lithic Item descriptions with site names and locations

ID	Site	Find number	Area name	Pit	Unit	Weight	Type	Material	Completeness	Initiation type	Platform type	Termination type
216558	not yet allocated	CL9	31		Surface	9.46	Unretouched flake	Chert	Distal fragment	None	None	Feather
216559	not yet allocated	CL8	31		Surface	4	Unretouched flake	Quartz, vein	LCS left	Hertzian	Single	Feather
216560	not yet allocated	CL10	31		Surface	0.58	Unretouched flake	Quartz, vein	Medial fragment	None	None	None
216561	WCP162	A1	29		Surface	3.78	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216562	WCP162	A2	29		Surface	15.52	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216563	WCP162	A2	29		Surface	12.41	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216564	WCP547	CL11	29		Surface	1.58	Unretouched flake	Quartz, vein	Complete	Hertzian	Shattered	Step
216565	WCP547	CL11	29		Surface	0.51	Unretouched flake	Quartz, vein	Complete	Hertzian	Single	Feather
216566	WCP549	CL12	29		Surface	11.24	Non-artefactual	Slate				



216567	WCP549	CL12	29	Surface	0.64	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216568	WCP549	CL13	29	Surface	4.41	Core	Quartz, vein	Broken			
216569	WCP549	CL13	29	Surface	0.32	Non- artefactual	Quartz, vein				
216570	WCP549	CL13	29	Surface	0.73	Non- artefactual	Quartz, vein				
216571	WCP549	CL13	29	Surface	1.53	Non- artefactual	Quartz, vein				
216572	WCP548	CL14	29	Surface	2.2	Unretouched flake	Quartz, vein	Complete	Hertzian	Shattered	Feather
216573	WCP548	CL14	29	Surface	6.2	Non- artefactual	Quartz, vein				
216574	WCP548	CL15	29	Surface	4.19	Unretouched flake	Quartz, vein	Distal fragment	None	None	Hinge
216575	WCP548	CL15	29	Surface	0.26	Non- artefactual	Quartz, vein				
216576	WCP548	CL16	29	Surface	8.94	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216577	WCP548	CL17	29	Surface	15.81	Unretouched flake	Quartz, vein	Complete	Hertzian	Single	Feather



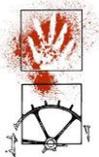
216578	WCP548	CL17	29	Surface	2.32	Unretouched flake	Quartz, vein	Complete	Hertzian	Single	Feather
216579	WCP548	CL17	29	Surface	14.54	Unretouched flake	Quartz, vein	Complete	Hertzian	Single	Feather
216580	WCP548	CL17	29	Surface	3.16	Non- artefactual	Quartz, vein				
216581	WCP548	CL17	29	Surface	1.05	Unretouched flake	Quartz, vein	Complete	Bending	Single	Feather
216582	WCP548	CL18	29	Surface	1.18	Unretouched flake	Quartz, vein	LCS left	Hertzian	Single	Feather
216583	WCP548	CL18	29	Surface	25.59	Non- artefactual	Quartz, vein				
216584	WCP548	CL18	29	Surface	3.33	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216585	WCP548	CL18	29	Surface	17.56	Non- artefactual	Quartz, vein				
216586	WCP548	CL18	29	Surface	13.56	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216587	WCP548	CL19	29	Surface	0.53	Non- artefactual	Quartz, vein				
216588	not yet allocated	CL20	29	Surface	42.7	Core	Quartz, vein	Complete			



216589	not yet allocated	CL22	25	Surface	0.65	Unretouched flake	Quartz, vein	Proximal fragment	Hertzian	Single	None
216590	not yet allocated	CL23	25	Surface	251.21	Retouched flake	Chert	Complete	Hertzian	Single	None
216591	not yet allocated	CL23	12	Surface	0.48	Non- artefactual	Quartz, vein				
216592	not yet allocated	CL23	12	Surface	2.93	Unretouched flake	Chert	Complete	Hertzian	Shattered	Feather
216593	WCP268?	CL24	12	Surface	1.03	Unretouched flake	Silcrete	Proximal fragment	Hertzian	Single	None
216594	WCP269	CL25	12	Surface	5.59	Core	Quartz, vein	Complete			
216595	WCP269	CL25	12	Surface	0.4	Non- artefactual	Chert				
216596	WCP269	CL25	12	Surface	0.52	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216597	WCP269	CL25	12	Surface	0.18	Non- artefactual	Quartz, vein				
216598	WCP269	CL26	12	Surface	4.3	Unretouched flake	Chert	Proximal fragment	Hertzian	Multiple	None
216599	WCP269	CL26	12	Surface	0.86	Unretouched flake	Quartz, vein	Margin missing	Hertzian	Single	Feather

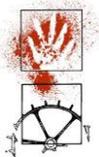


216600	WCP269	CL27	12	Surface	1.82	Non- artefactual	Quartz, vein				
216601	WCP269	CL27	12	Surface	0.66	Non- artefactual	Quartz, vein				
216602	WCP269	CL27	12	Surface	0.45	Unretouched flake	Quartz, vein	Medial fragment	Hertzian	None	None
216603	WCP270	CL28	12	Surface	339.02	Hammer	Quartz, vein	Broken			
216604	WCP270	CL29	12	Surface	2.74	Unretouched flake	Quartz, vein	Complete	Bending	Single	Feather
216605	WCP272	CL30	12	Surface	4.55	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216606	not yet allocated	CL7	Powerline	Surface	387.97	Non- artefactual	Quartz, vein				
216607	not yet allocated	CL1	Powerline	Surface	26.39	Core	Quartzite	Broken			
216608	not yet allocated	CL2	Powerline	Surface	1.65	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather
216609	not yet allocated	CL3	Powerline	Surface	2.39	Unretouched flake	Quartz, vein	Complete	Hertzian	Single	Feather
216610	WCP558	CL3	Powerline	Surface	2.49	Unretouched flake	Quartz, vein	Complete	Hertzian	Single	Feather



216611	WCP558	CL4	Powerline	Surface	0.18	Non- artefactual	Quartz, vein					
216612	WCP558	CL4	Powerline	Surface	0.56	Unretouched flake	Quartz, vein	Medial fragment	Hertzian	None	None	
216613	WCP558	CL4	Powerline	Surface	0.24	Non- artefactual	Quartz, vein					
216614	WCP558	CL5	Powerline	Surface	3.36	Unretouched flake	Quartz, vein	Complete	Hertzian	Shattered	Feather	
216615	WCP558	CL5	Powerline	Surface	2.25	Unretouched flake	Quartz, vein	Distal fragment	None	None	Feather	
216616	WCP558	CL5	Powerline	Surface	2.49	Non- artefactual	Quartz, vein					
216617	not yet allocated	CL6	Powerline	Surface	132.6	Core	Quartz, vein	Broken				
216618	not yet allocated	CL21	Powerline	Surface	1.78	Unretouched flake	Quartzite	Distal fragment	None	None	Feather	
216619	not yet allocated	CL21	Powerline	Surface	3.13	Non- artefactual	FGS					

ID	Cortex distribution	Cortex proportion	Length	Width	Thickness	Platform width	Platform thickness	Quarter width	Maximum width	Maximum width location
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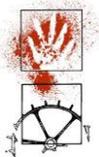
216558	Patch left	10	26.96	26.32	6.15					
216559	Tertiary	0	27.11	12.05	5.45					
216560	Tertiary	0	6.94	11.76	4.98					
216561	Tertiary	0	18.26	21.76	7.1					
216562	Tertiary	0	46.28	18.42	10.38					
216563	Tertiary	0	30.94	23.63	8.83					
216564	Tertiary	0	12.14	11.28	4.74					
216565	Tertiary	0	11.19	8.54	3.29	5.4	1.18	8.55	9	4.14
216566										
216567	Tertiary	0	8.58	12.68	3.27					
216568		0	14.18	17.04	11.55					
216569										
216570										
216571										
216572	Tertiary	0	14.63	13.33	6.35					
216573										



216574	Tertiary	0	19.52	21.23	6.11					
216575										
216576	Tertiary	0	17.83	21.78	14.8					
216577	Distal only	10	24.03	27.6	12.45					
216578	Tertiary	0	15.46	16.48	4.64					
216579	Tertiary	0	28.62	21.5	13.26	18.06	7.68	24.24	24.91	6.52
216580										
216581	Tertiary	0	17.54	8.1	3.97	6.61	1.52	7.29	9.64	14.77
216582	Tertiary	0	21.49	7.8	5.34	6.29	4.46			
216583										
216584	Tertiary	0	22.15	12.53	6.83					
216585										
216586	Tertiary	0	24.97	19.64	8.82					
216587										
216588		0	35.95	34.44	25.89					
216589	Tertiary	0	13.76	8.85	3.77	6.13	4.08	8.63	8.91	6.36



216590	Secondary (other)	50	64.75	57.81	49.84	34.57	11.14	58.86	60.47	40.6
216591										
216592	Tertiary	0	21.27	13.47	6.58					
216593	Tertiary	0	17.1	10.44	4.25	4.34	1.57			
216594		0	18.61	14.71	15.21					
216595										
216596	Tertiary	0	7.95	11.57	3.26					
216597										
216598	Tertiary	0	15.96	28.57	7.78					
216599	Tertiary	0	12.82	9.84	4.8					
216600										
216601										
216602	Tertiary	0	8.39	9.39	4.1					
216603		50	96.33	62.59	39.58					
216604	Tertiary	0	14.97	13.98	6.78	19.81	7.79	15.84	19.81	0
216605	Tertiary	0	19.12	22.1	4.09					

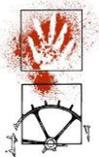


216606										
216607		30	41.42	18.71	26.22					
216608	Distal only	50	14.57	11.19	6.34					
216609	Tertiary	0	22.63	12.39	6.41	8.87	2.69	12.77	14.54	5.41
216610	Tertiary	0	17.99	15.77	4.9	14.42	4.84	15.11	15.68	1.97
216611										
216612	Tertiary	0	8.69	9.82	3.1					
216613										
216614	Tertiary	0	15.35	18.77	5.65					
216615	Tertiary	0	10.39	14.76	5.82					
216616										
216617		10	63.99	50.01	31.1					
216618	Primary	100	18.74	10.65	5.39					
216619										

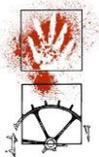
ID	Crazing	Crenated fracture	Potlidding	Exfoliation	Retouched	Retouched artefact type	Comments
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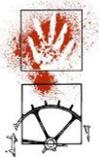
216558	0	0	0	0	0	
216559	0	0	0	0	0	
216560	0	0	0	0	0	
216561	0	0	0	0	0	
216562	0	0	0	0	0	
216563	0	0	0	0	0	
216564	0	0	0	0	0	
216565	0	0	0	0	0	
216566	0	0	0	0	0	
216567	0	0	0	0	0	
216568	0	0	0	0	0	2 platform core.
216569	0	0	0	0	0	
216570	0	0	0	0	0	
216571	0	0	0	0	0	
216572	0	0	0	0	0	
216573	0	0	0	0	0	



216574	0	0	0	0	0
216575	0	0	0	0	0
216576	0	0	0	0	0
216577	0	0	0	0	0
216578	0	0	0	0	0
216579	0	0	0	0	0
216580	0	0	0	0	0
216581	0	0	0	0	0
216582	0	0	0	0	0
216583	0	0	0	0	0
216584	0	0	0	0	0
216585	0	0	0	0	0
216586	0	0	0	0	0
216587	0	0	0	0	0
216588	0	0	0	0	0
216589	0	0	0	0	0



216590	0	0	0	0	1	Scraper	Thick retouched flake, with large dorsal scars around entire perimeter.
216591	0	0	0	0	0		
216592	0	0	0	0	0		
216593	0	0	0	0	0		
216594	0	0	0	0	0		Multiplatform core.
216595	0	1	0	0	0		
216596	0	0	0	0	0		
216597	0	0	0	0	0		
216598	0	0	0	0	0		
216599	0	0	0	0	0		
216600	0	0	0	0	0		
216601	0	0	0	0	0		
216602	0	0	0	0	0		
216603	0	0	0	0	0		
216604	0	0	0	0	0		
216605	0	0	0	0	0		



216606	0	0	0	0	0	
216607	0	0	0	0	0	Broken single platform core.
216608	0	0	0	0	0	
216609	0	0	0	0	0	
216610	0	0	0	0	0	
216611	0	0	0	0	0	
216612	0	0	0	0	0	
216613	0	0	0	0	0	
216614	0	0	0	0	0	
216615	0	0	0	0	0	
216616	0	0	0	0	0	
216617	0	0	0	0	0	Broken multiplatform core.
216618	0	0	0	0	0	
216619	0	0	0	0	0	



ABORIGINAL CONSULTATION

Wilpinjong Coal Mine (WCM) and Peabody Energy conduct an ongoing consultation program with Aboriginal stakeholders regarding cultural heritage management within the Wilpinjong mining lease (ML 1573). There are currently eight organisations or individuals registered as Aboriginal stakeholders (also known as 'registered Aboriginal parties' or RAPs). The registration process is a standard protocol defined by the NSW Office of Environment and Heritage (OEH). Navin Officer Heritage Consultants contacted each stakeholder to invite a representative of each group to be involved in the site visits for this assessment. This was done via email on 6th September 2017. One stakeholder responded to the invitation and their representatives attended the fieldwork.

Field Participation

The following representatives from three registered stakeholder groups responded to invitations and participated in the fieldwork program conducted over three days, 25th to 27th July 2017:

- Christine Maynard Mudgee Local Aboriginal Land Council;
- Steven George Flick Murrong Gillinga.
- Coral Williams North East Wiradjuri Company Ltd
- Brooke Williams Warrabinga Native Title Claimants Aboriginal Corporation

NOHC FIELDWORK PERSONNEL

Archaeologists Elle Lillis and Lucy Blackam undertook the survey, recording and artefact collection.

Dr Oliver Macgregor undertook the artefact description.

CONCLUSIONS AND RECOMMENDATIONS

Seventeen previously recorded sites were located in the Powerline and areas 12 (Part), 25, 26, 27, 29, 30, 31, 33, 34, and 35 have undergone reassessment.

A total of twelve previously unrecorded Aboriginal sites, WCP696 to WCP707 have been located as a result of this assessment.

Twelve new Aboriginal site recordings, WCP696 to WCP707 were identified within the Wilpinjong project boundary in Areas Powerline, 12 (Part), 25, 26, 29, 31 and 35

Powerline

One previously lodged site recordings that occur in the Powerline:

WCP558 – Artefact Scatter (Kuskie 2013)

Five new sites (WCP696 to WCP699) were recorded in the Powerline,



Recommendations:

1. Newly recorded Aboriginal sites (WCP696, WCP697, WCP698 and WCP699) should be entered on the Wilpinjong sites database.
2. The Powerline is cleared for impact relative to Figure 2, excluding the Environmental Conservation Area.

Part of Area 12

There are eight previously lodged site recordings that occur in Area 12:

268 – Open Artefact Site (NOHC 2005)

269 – Open artefact Site (NOHC 2005)

270 – Open artefact Site (NOHC 2005)

271 – Open artefact Site (NOHC 2005)

272 – Open artefact Site (NOHC 2005)

One site (271) was not relocated by the current survey.

One new site (WCP700) was recorded in Area 12.

Recommendations:

1. Newly recorded Aboriginal site (WCP700) should be entered on the Wilpinjong sites database.
2. Area 12 (Part) is cleared for impact relative to Figure 10

Area 25

There are no previously lodged site recordings occur in Area 25.

One new site (WCP701) was recorded in Area 25.

Recommendations:

1. Newly recorded Aboriginal site (WCP701) should be entered on the Wilpinjong sites database.
2. Area 25 is cleared for impact relative to Figure 17

Area 26

There are no previously lodged site recordings occur in Area 26.

One new site (WCP702) was recorded in Area 26.

Recommendations:

1. Newly recorded Aboriginal site (WCP702) should be entered on the Wilpinjong sites database.



2. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the rock shelter site then the extent and type of further work for rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact
3. Area 26 is cleared for impact relative to Figure 19 with buffer zones around rock shelter site WCP702

Area 27

There are no previously lodged site recordings occur in Area 27.

No new sites were recorded in Area 27.

Recommendations:

1. Area 27 is cleared for impact relative to Figure 20

Area 29

Six previously lodged site recordings occur in Area 29.

WCP162 – Artefact Scatter (NOHC 2005)

WCP547 – Artefact Scatter (Kuskie 2013)

WCP548 – Artefact Scatter (Kuskie 2013)

WCP549 – Artefact Scatter (Kuskie 2013)

WCP550 – Artefact Scatter (Kuskie 2013)

WCP551 – Artefact Scatter (Kuskie 2013)

Sites WCP551, WCP550 and WCP73 were not able to be relocated by the current survey.

One new site (WCP703) was recorded in Area 29.

Recommendations:

1. Newly recorded Aboriginal site (WCP703) should be entered on the Wilpinjong sites database.
2. Area 29 is cleared for impact relative to Figure 27

Area 30

Two previously lodged site recordings occur in Area 30.

WCP71 – Isolated Find (NOHC 2005)

WCP73 – Isolated Find (NOHC 2005)

Sites WCP71 and WCP73 were not relocated in the current survey.

No new sites were recorded in Area 30.



Recommendations:

1. Area 30 is cleared for impact relative to Figure 28

Area 31

No previously lodged site recordings occur in Area 31.

Three new sites (WCP704 to WCP706) were recorded in Area 31.

Recommendations:

1. Newly recorded Aboriginal site (WCP704, WCP705 and WCP706) should be entered on the Wilpinjong sites database.
2. Area 31 is cleared for impact relative to Figure 32

Area 33

No previously lodged site recordings occur in Area 33.

No new sites were recorded in Area 33.

Recommendations:

1. Area 33 is cleared for impact relative to Figure 33

Area 34

No previously lodged site recordings occur in Area 34.

No new sites were recorded in Area 34.

Recommendations:

1. Area 34 is cleared for impact relative to Figure 34

Area 35

No previously lodged site recordings occur in Area 35.

One new site (WCP707) was recorded in Area 35.

Recommendations:

1. Newly recorded Aboriginal site (WCP707) should be entered on the Wilpinjong sites database.
2. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the rock shelter site then the extent and type of further work for rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.
3. Area 35 is cleared for impact relative to Figure 36 with buffer zones around rock shelter site WCP707



Figure 37 Areas cleared



REFERENCES

- Kayandel Archaeological Services 2006, Wilpinjong Coal Project Aboriginal Cultural Heritage Survey: Supplemental Survey of Escarpment Areas and Report of Findings. Report prepared for Wilpinjong Coal Pty Ltd.
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- South East Archaeology 2013, Wilpinjong Coal Mine, Central Tablelands of New South Wales - Modification: Aboriginal Cultural Heritage Assessment. Report prepared for Wilpinjong Coal Pty Ltd.
- South East Archaeology 2015 Wilpinjong Coal Mine, Central Tablelands Of New South Wales – Extension Project: Aboriginal Cultural Heritage Assessment. Report prepared for Wilpinjong Coal Pty Ltd.
- Wilpinjong Coal Pty Ltd (WCPL) 2015 Wilpinjong Coal Project Aboriginal Site Database revised 5 March 2015.
- Wilpinjong Coal Pty Ltd (WCPL) 2006, Wilpinjong Coal Project Environmental Impact Statement.



Wilpinjong Coal Mine

Aboriginal Cultural Heritage Clearance Works

October Clearance Areas

October 2017



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Officer**

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Authors: Lucy Blackam
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Lucy Blackam	V1.0	Elle Lillis	

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EXECUTIVE SUMMARY

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

This report documents Aboriginal cultural heritage clearance works for the Powerline North Section, Exploration Area and Areas 12 (Part), 23, 24, 25B, 28, 36, 37, 38 and 39. The assessment includes locations within the Wilpinjong Coal Pty Ltd project approval boundary.

The Powerline North Section, Exploration Area and Areas 12 (Part), 23, 24, 25B, 28, 36, 37, 38 and 39 are within the project approval boundary and are subject to the Wilpinjong Coal Mine Aboriginal Cultural Heritage Management Plan (ACHMP). Surface salvage and area clearance actions were undertaken at these sites.

Sixteen new Aboriginal site recordings, WCP708 through to WCP724 were identified within the Wilpinjong project boundary in Powerline North Section, Exploration Area, Areas 12, 24, 25B, and 39 as a result of this assessment.

Therefore, the recommendations for the following areas are:

Area 12 (Part)

Three previously lodged site recordings occur in the Area 12 (part):

273 – Open Artefact Site (NOHC 2006)

WCP559 – Open Artefact Site (South East Archaeology 2014)

WC IF 2 – Isolated Find (OzArk 2005)

Two new sites (WCPXXX) were recorded Area 12. Two sites (273 and WCP559) were not relocated during the current survey.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Area 12 (Part) is cleared for impact relative to Figure X

Area 23 (Part)

No previously lodged site recordings occur in Area 23 (Part).

No new sites were recorded during the current survey.

Recommendations:

1. Area 23 (Part) is cleared for impact relative to Figure XX.

Area 24

Two previously lodged site recordings occur in Area 24:

CE-12-OS – Artefact Scatter (Kayandel 2006)

CE-14-OS – Artefact Scatter (OzArk 2005)

Five new sites (WCPXXX to WCPXXX) were recorded in Area 24. Two sites were not relocated during the current survey (CE-12-OS and CE-14-OS).

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Area 24 is cleared for impact relative to Figure XX

Area 25B

Two previously lodged site recordings occur in Area 25B:

WCP452 – Isolated Find (Apex 2013)

WCP464 – Artefact Scatter (Kuskie 2015)

Three new sites (WCPXX) were recorded in Area 25B.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Area 25B is cleared for impact relative to Figure XX

Area 28

No previously lodged site recordings occur in Area 28.

No new sites were recorded in Area 28.

Recommendations:

1. Area 28 is cleared for impact relative to Figure .

Area 36

No previously lodged site recordings occur in Area 36.

No new sites were recorded in Area 36.

Recommendations:

1. Area 36 is cleared for impact relative to Figure 1.

Area 37

No previously lodged site recordings occur in Area 37.

No new sites were recorded in Area 37.

Recommendations:

1. Area 37 is cleared for impact relative to Figure XX

Area 38

No previously lodged site recordings occur in Area 38

No new sites were recorded in Area 38.

Recommendations:

1. Area 38 is cleared for impact relative to Figure XX

Area 39

No previously lodged site recordings occur in Area 39

Two new sites (WCPXX) were recorded in Area 39.

Recommendations:

1. Newly recorded Aboriginal sites (XXX) should be entered on the Wilpinjong sites database.
2. Area 39 is cleared for impact relative to Figure XX

Powerline North Section

Four previously lodged site recordings occur in the Powerline North Section:

WCP174 – Artefact Scatter (NOHC 2005)

WCP457 – Artefact Scatter (Kuskie 2015)

WCP458 – Artefact Scatter (Kuskie 2015)

267 – Open Artefact Site (NOHC 2006)

One new sites (WCPXXX to WCPXXX) were recorded in the Powerline North Section.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Powerline North Section is cleared for impact relative to Figure XX and once testing is complete

Exploration Area

Three previously lodged site recordings occur in the Exploration Area:

WCP523 – Artefact Scatter (NOHC 2005)

WCP526

WE74

Three new sites (WCPXXX to WCPXXX) were recorded in the Exploration Area.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Exploration Area is cleared for impact relative to Figure XX

Where impacts of open grinding grooves are proposed sites and avoidance of impacts is not feasible

3. Where the site is assessed as being of low, low to moderate, or moderate significance following detailed recording of the evidence and use-wear and residue analysis, impacts will be permitted to occur without further action
4. Where the site is assessed as being of moderate to high, or high significance, following detailed recording of the evidence, it will be subject to use-wear and residue analysis and any reasonable mitigation measures, such as removal of the sandstone slab hosting the grooves and subsequent display for educational purposes, as determined by the consensus agreement of WCPL and the RAPS before impacts are permitted to occur. Consideration may also be undertaken of 3D scanning of identified open grinding groove sites, in consultation with a suitably qualified archaeologist. In the event that consensus agreement cannot be reached between WCPL and the RAPS about mitigation strategy, the ECM will determine the strategy in consultation with a heritage expert (ACHMP 2017)

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BACKGROUND

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

In 2006 Project Approval was granted under Section 75J of the *Environmental Planning and Assessment Act 1979* (Project Approval 05-0021). In the same year, the mine was purchased by Peabody Energy. The conditions of the Project Approval included the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) and a range of specified requirements in relation to identified heritage sites (WCPL 2006).

The ACHMP includes an Ancillary Disturbance Area Protocol which includes:

1. Pre-clearance archaeological survey (conducted with the assistance of Aboriginal representatives). This survey would include consideration of the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage.
2. Avoidance of the identified Aboriginal object/sites by realigning or adjusting infrastructure/disturbance area if practicable.

If the object/site cannot be avoided:

1. Consider surface salvage (advice from Aboriginal representatives and/or an archaeologist will be sought).
2. If relevant, consider the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage (subject to review of the ACHMP and consultation with Aboriginal representatives and/or an archaeologist).
3. Conduct surface salvage (and subsurface salvage if necessary) with the assistance of Aboriginal representatives and an archaeologist.
4. Store salvaged artefacts in the "Keeping Place".
5. Post-rehabilitation, replace artefacts onto the rehabilitated landform.

Surface Salvage

The ACHMP specifies that surface salvage will involve the systematic recovery of all evident surface artefacts from a representative sample of open artefact scatters and from selected isolated finds at known sites within the project disturbance area. Surface collections will occur on a progressive basis prior to the commencement of ground surface disturbance works within an area.

A basic level of recording will be conducted on all recovered artefactual surface material including location, technological traits, and stone type. This analysis has been conducted by a qualified lithic specialist, Dr Oliver Macgregor.

This Report

This report presents the results of a pre-clearance archaeological survey and surface salvage of the Powerline North Section, Exploration Area and Areas 12 (Part), 23, 24, 25b, 28, 36, 37, 38, and 39 inside the project approval boundary

Figure 1 Location of the Clearance Areas

SURFACE SALVAGE

AREA 12 (PART)

Area 12 (Part) shown in purple in Figure XX had clearance salvage and was surveyed as part of the clearance work program on 24th October 2017.

Clearance Survey Results

Summary

Three previously lodged site recording occurs in the Area 12 section:

273 – Open Artefact Site (NOHC 2005)

WCP559 – Artefact Scatter (Kuskie 2013)

WC IF 2 – Isolated Find (OzArk 2005)

Five new sites (WCPXXX) were recorded in the Area 12 section. Two sites (273 and WCP559) were not relocated in the current survey

Figure 2 Area 12 (Part) Previously Recorded Sites

Previously Recorded Sites

WC IF 2 – CL 16?

GDA (Zone 55) 774195.6420473

WC IF 2 was recorded as an isolated find of a silcrete flake (OzArk 2005). During this investigation one lithic item was relocated (Figure 14). The XXX lithic item was determined to be artefactual.

Location data for WC IF 2 was originally And has now been changed to 774195.6420473

The site consists of XX flake (Table 1) located on XXX with a flat gradient and an open aspect (Figure 13). Ground surface disturbance consisted of vehicle damage, water wash erosion, and farming activities. Exposure incidence was 40% with 70% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed as low with the likelihood of intact deposits to be low.



Figure 3 WC IF 2 facing west

Sites Recorded in the Current Assessment

Two new sites were found during the current assessment. These sites were one isolated find and one artefact scatter with PAD and were designated WCPXXX - WCPXXX

WCP CL15

GDA (Zone 55) 774232.6420397

WCPXX is an isolated find with one lithic item. During this investigation one silcrete core was found (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of one silcrete core (Table 1) located on a dissected lower slope with a flat gradient and an open aspect in a recently ploughed paddock (Figure 13). Ground surface disturbance consisted of stock damage and ploughing. Exposure incidence was 40% with 60% visibility within exposures. There is low potential for subsurface material and moderate potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate



Figure 4 CL15 facing west

WCP711 CL17, CL18, CL19, CL53, CL55, CL54, CL56

GDA (Zone 55) 774337.6420475

WCPXX is an artefact scatter with a potential archaeological deposit (PAD). During this investigation XXX lithic items (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of XXX (Table 1) was located on the surface of a minor spur on a dissected lower slope. The site was on a flat gradient and an open aspect in a recently ploughed paddock (Figure

13). Ground surface disturbance consisted of stock damage and ploughing. Exposure incidence was 40% with 60% visibility within exposures. There is moderate to high potential for subsurface material and moderate potential for this material to be undisturbed.

The site was determined to have a PAD as there is residual fine siltier loam with gravels on the surface of a residual terrace. **NEED TO FURTHER EXPLAIN THIS**. Although the plough has disturb sections of the surface, sections in between would still have in situ archaeological deposits.

Pre-construction management of subsurface archaeological material is required for this site as the archaeological potential is assessed as moderate with the likelihood of intact deposits to be moderate



Figure 5 CL18 facing east

Figure 6 Area 12 (Part) Previously Recorded Sites and New Sites

AREA 23 (PART)

Area 23 (Part) shown in blue in Figure 7 had clearance salvage and was surveyed as part of the clearance work program on 24th October 2017.

Clearance Survey Results

Summary

No previously recorded sites

No new sites were found in the current survey.

This section was surveyed up to the extent of the Mughorn Nature Reserve boundary. The fence had a wire covered in white plastic to represent the boundary and further survey and collection could not be done past this point.

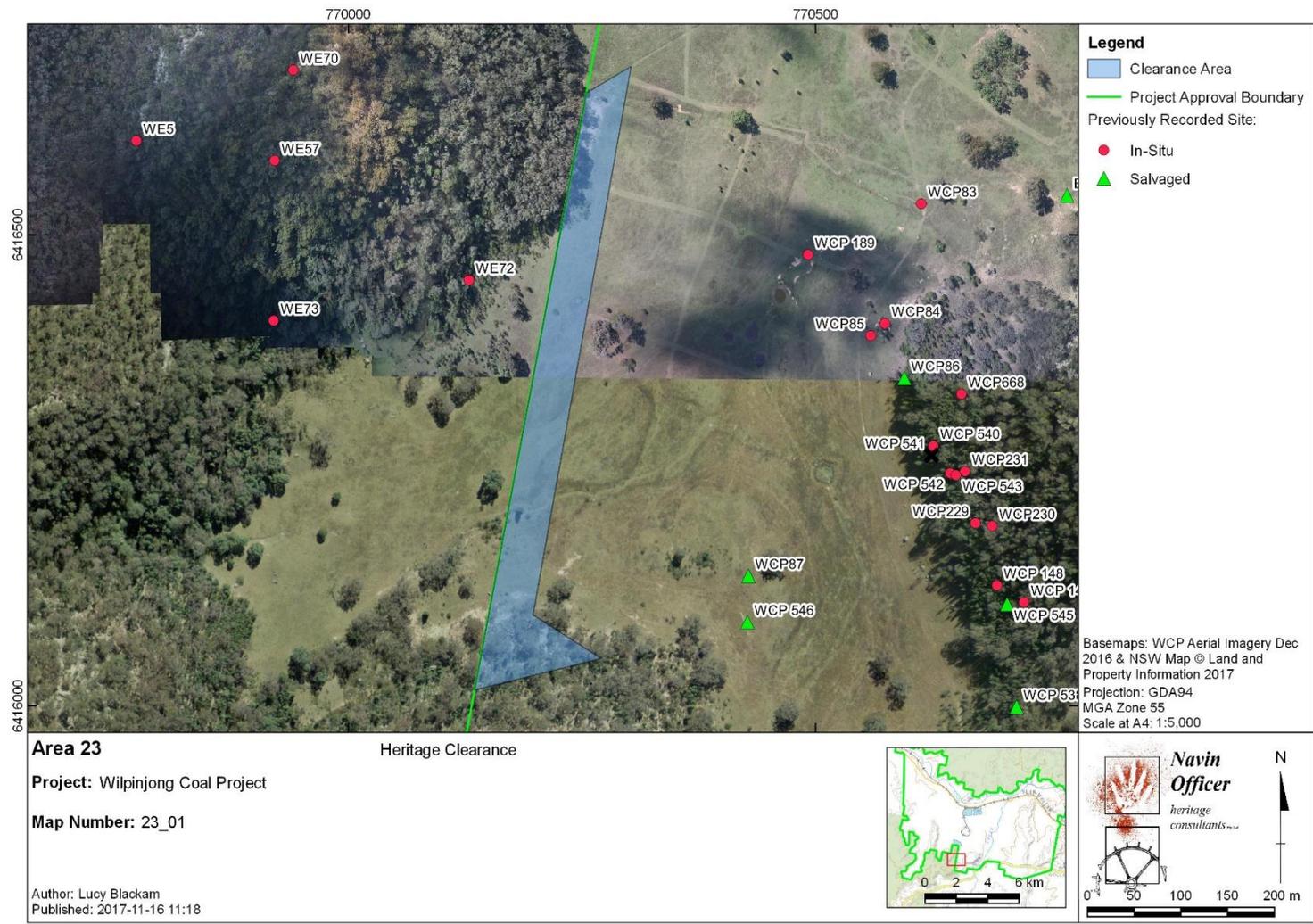


Figure 7 Area 23

AREA 24

Area 24 shown in blue in Figure 8 had clearance salvage and was surveyed as part of the clearance work program on 24th October 2017.

Clearance Survey Results

Summary

Two previously lodged site recording occurs in Area 24:

CE-12-OS – Artefact Scatter (Kayandel 2006)

CE-14-OS – Artefact Scatter (OzArk 2005)

Five new sites (WCPXXX to WCPXXX) were recorded in the Area 24. Two sites (CE-12-OS and CE-14-OS) were not able to be relocated by the current survey.

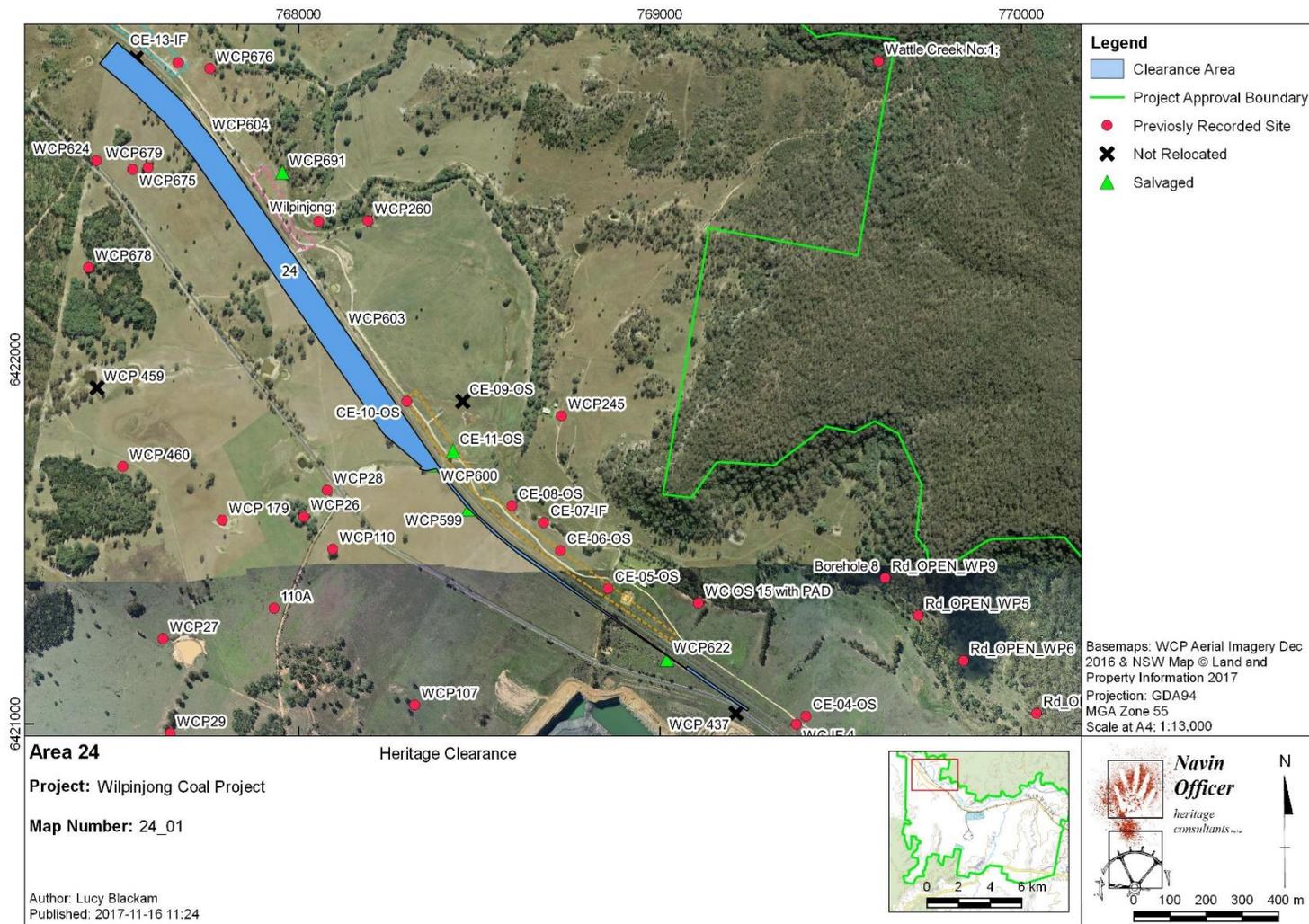


Figure 8 24 (Part) Previously Recorded Sites



Sites Recorded in the Current Assessment

Five new sites were found during the current assessment. These sites were two artefact scatters and three isolated finds and were designated WCPXXX - WCPXXX

WCP CL10

GDA (Zone 55) 769105.6421127

WCPXX is an artefact scatter. During this investigation XXX quartz flakes were found (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of XX quartz vein flake (Table 1) located on a valley flat with a flat gradient and an open aspect (Figure X). The site was between an existing road alignment and a rail line alignment. Disturbance may have already existed from the insertion of a fibre optic cable that followed the section of the survey. Ground surface disturbance consisted of water wash erosion, and Fibre Optic Cable insertion. Exposure incidence was 30% with 60% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 9 CL10 facing west

WCP CL11

GDA (Zone 55) 768530.6421532

WCPXX is an isolated find. During this investigation one quartz flakes was found (Figure 14). The lithic item was determined to be artefactual.



The site consists of one quartz vein flake (Table 1) located on a valley flat with a flat gradient and an open aspect (Figure X). The site was between an existing road alignment and a rail line alignment. Disturbance may have already existed from the insertion of a fibre optic cable that followed the section of the survey. Ground surface disturbance consisted of water wash erosion, and Fibre Optic Cable insertion. Exposure incidence was 30% with 70% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 10 CL11 facing west

WCP CL12 possibly WCP600

GDA (Zone 55) 768364.6421717

WCPXX is an artefact scatter. During this investigation two lithic items were found (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of one quartz vein flake and one grey chert flake in an area of 5 x 5 metres (Table 1) located on an access track in a valley flat with a flat gradient and an open aspect (Figure X). Ground surface disturbance consisted of water wash erosion, and vehicle damage. Exposure incidence was 20% with 70% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 11 CL12 facing

WCP CL13

GDA (Zone 55) 768058.6422130

WCPXX is an isolated find. During this investigation one lithic item was found (Figure 14). The lithic item was determined to be artefactual.

The site consists of one XX flake (Table 1) located on a valley flat with a flat gradient and an open aspect (Figure X). The site was part of a dissected spur and swale landform. Ground surface disturbance consisted of stock damage and farming activities. Exposure incidence was 20% with 60% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 12 CL13 facing south

WCP CL14

GDA (Zone 55) 767674.6422686

WCPXX is an isolated find. During this investigation one lithic item was found (Figure 14). The lithic item was determined to be artefactual.

The site consists of one XX flake (Table 1) located on a valley flat with a flat gradient and an open aspect (Figure X). Ground surface disturbance consisted of stock damage and farming activities. Exposure incidence was 20% with 50% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 13 CL14 facing south



Figure 14 Previously Recorded and Newly Recorded Sites of Area 24 (Part)



AREA 25B

Area 25b shown in purple in Figure 15 had clearance salvage and was surveyed as part of the clearance work program on 24th October 2017.

Clearance Survey Results

Summary

Two previously lodged site recording occurs in Area 25B:

WCP452 – Isolated Find (Apex 2013)

WCP464 – Artefact Scatter (Kuskie 2015)

Three new sites (WCPXX) were recorded in Area 25B.



Figure 15 Previously Recorded Sites in Area 25b



Previously Recorded Sites

WCP452

GDA (Zone 55) 767196.6420003

WCP452 was recorded as an isolated find of one quartz flake (Apex 2013). During this investigation one quartz flake was relocated (Figure 14). The one lithic item was determined to be artefactual.

The site consists of one quartz vein flake (Table 1) located on an access track with a flat gradient and an open aspect (Figure 13). Ground surface disturbance consisted of vehicle damage, water wash erosion, and farming activities. Exposure incidence was 40% with 70% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed as low with the likelihood of intact deposits to be low.



Figure 16 WCP452 facing west

WCP464

GDA (Zone 55) 767177.6420114

WCP464 was recorded as an artefact scatter (Kuskie 2015). During this investigation XXX quartz flake was relocated (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of XX quartz vein flake (Table 1) located on XXX with a flat gradient and an open aspect (Figure 13). Ground surface disturbance consisted of vehicle damage, water wash erosion,



and farming activities. Exposure incidence was 40% with 70% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed as low with the likelihood of intact deposits to be low.



Figure 17 WCP464 facing north



Sites Recorded in the Current Assessment

Three new sites were found during the current assessment. These sites were XXX and were designated WCPXXX - WCPXXX

WCP CL6

GDA (Zone 55) 767047.6420012

WCPXX is an artefact scatter with a potential archaeological deposit (PAD). During this investigation XXX quartz flakes were found (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of XX quartz vein flake (Table 1) located on a crest with a low gradient and a northerly aspect in an open forest (Figure 13). Ground surface disturbance consisted of water wash erosion, and farming activities. Exposure incidence was 50% with 70% visibility within exposures. There is moderate potential for subsurface material and moderate potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is required for this site as the archaeological potential is assessed as moderate with the likelihood of intact deposits to be moderate.

Low angle flat area with food visibility out across plain and rectilinear for Isop to – spring hollows in low gully running north off slope onto European landscape NEED TO DEFINE WHY THIS IS PAD



Figure 18 CL6 facing south

WCP CL7

GDA (Zone 55) 767089.6419917



WCPXX is an artefact scatter. During this investigation XXX quartz flakes were found (Figure 14). The XXX lithic item was determined to be artefactual.

The site consists of XX quartz vein flake (Table 1) located on a crest with a low gradient and a northerly aspect in an open forest (Figure 13). Ground surface disturbance consisted of water wash erosion, and farming activities. Exposure incidence was 40% with 60% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 19 CL7 facing south

WCP CL9

GDA (Zone 55) 767262.6419956

WCPXX is an isolated find. During this investigation one quartz flakes were found (Figure 14). The lithic item was determined to be artefactual.

The site consists of one quartz vein flake (Table 1) located on a valley flat with a flat gradient and an open aspect in an open forest (Figure 13). Ground surface disturbance consisted of water wash erosion, and farming activities. Exposure incidence was 30% with 60% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 20 CL9 facing north



Figure 21 Previously Recorded and Newly Recorded Sites of Area 25b



AREA 28

Area 28 shown in yellow in Figure 22 had clearance salvage and was surveyed as part of the clearance work program on 23rd October 2017.

Clearance Survey Results

Summary

No previously lodged site recordings occur in Area 28.

No new sites were recorded in Area 28.



Figure 22 Clearance Area 28



AREA 36

Area 36 shown in yellow in Figure 13 had clearance salvage and was surveyed as part of the clearance work program on 23rd October 2017.

Clearance Survey Results

Summary

No previously lodged site recordings occur in Area 36:

No new sites were recorded in Area 36.

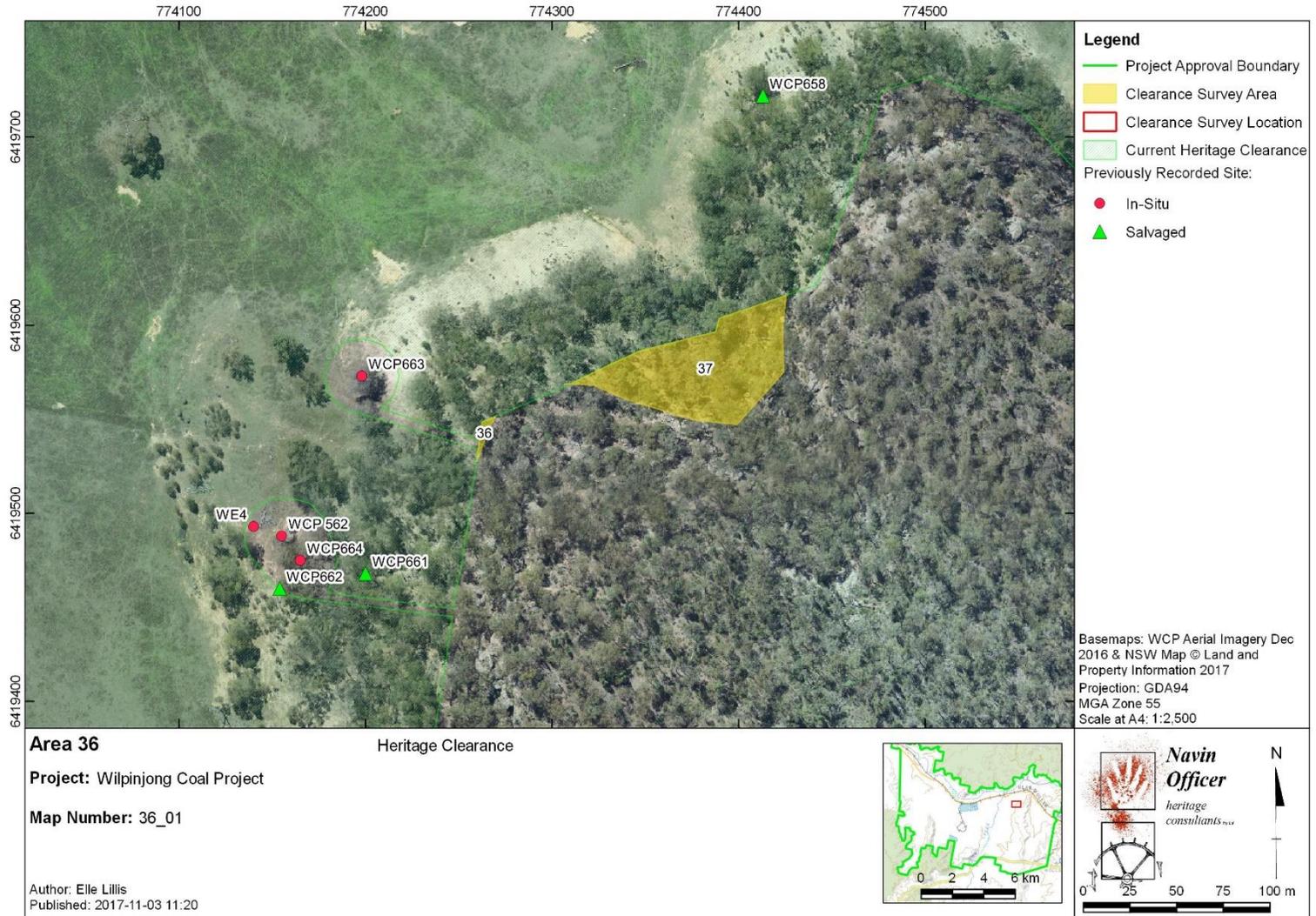


Figure 13 Clearance Area 36



AREA 37

Area 37 shown in yellow in Figure 24 Clearance Area 3724 had clearance salvage and was surveyed as part of the clearance work program on 23rd October 2017.

Clearance Survey Results

Summary

No previously lodged site recordings occur in Area 37:

No new sites were recorded in Area 37.

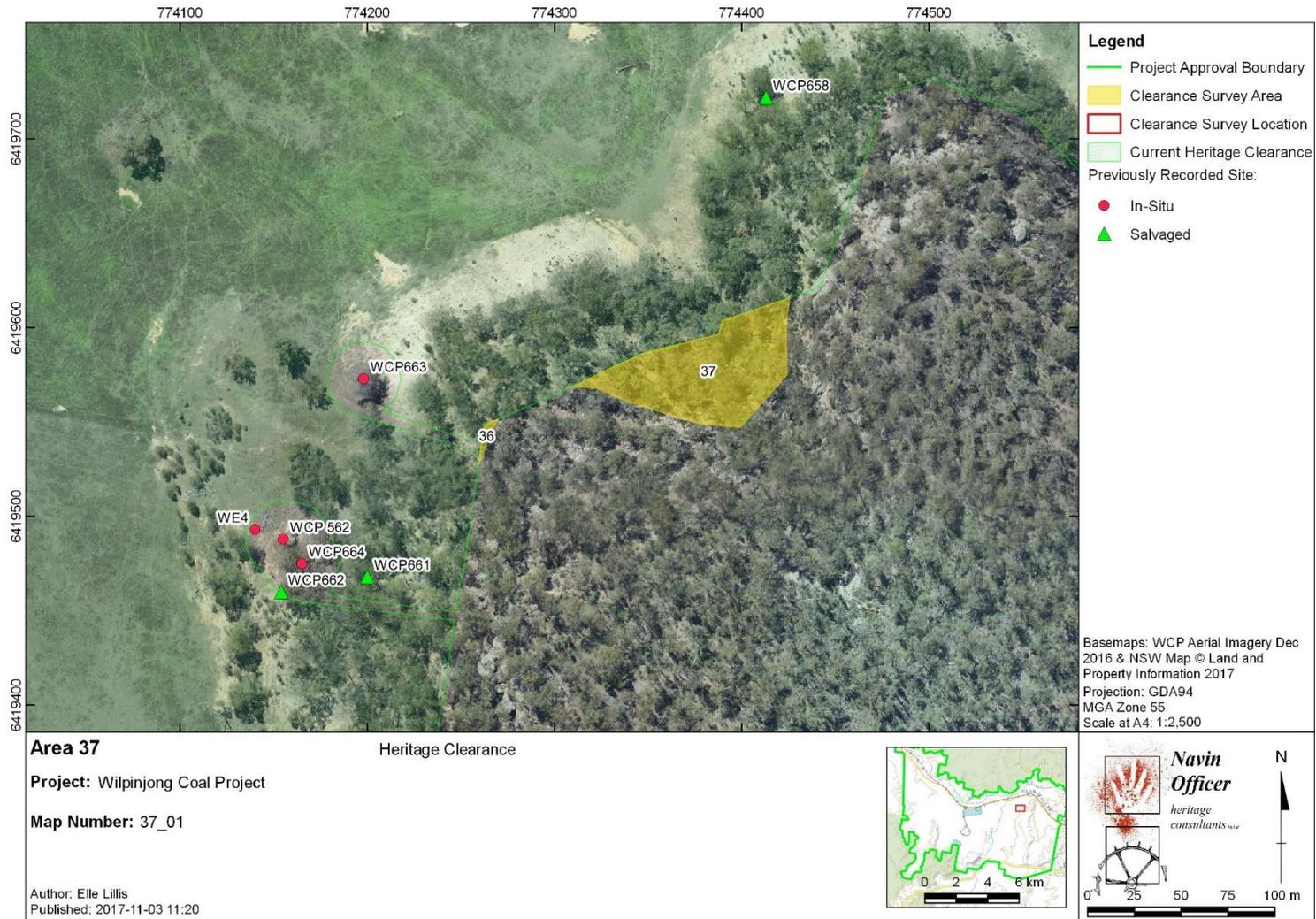


Figure 24 Clearance Area 37



AREA 38

Area 38 shown in yellow in 25 had clearance salvage and was surveyed as part of the clearance work program on 23rd October 2017.

Clearance Survey Results

Summary

No previously lodged site recording occurs in Area 38:

No new sites were recorded in Area 38.



Figure 25 Clearance Area 38



AREA 39

Area 39 shown in purple in Figure 26 had clearance salvage and was surveyed as part of the clearance work program on 23rd October 2017.

Clearance Survey Results

Summary

No previously lodged site recording occurs in Area 39:

Two new sites were recorded in Area 39.



Figure 26 Clearance Area 39



Sites Recorded in the Current Assessment

Two new sites were found during the current assessment. These sites were XXX and were designated WCPXXX - WCPXXX

WCP CL3

GDA (Zone 55) 773142.6420065

WCPXXX is an artefact scatter. During this investigation XXX quartz flakes were found (Figure 14). The lithic item was determined to be artefactual.

The site consists of XXX quartz vein flake in an area of 30 x 5 metres (Table 1) located on a vehicle access track on a valley flat with a flat gradient and an open aspect in a cleared area of the mine (Figure 13). Ground surface disturbance consisted of water wash erosion and vehicle damage. Exposure incidence was 30% with 80% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 27 CL3 facing west

WCP CL4

GDA (Zone 55) 773114.6420066

WCPXX is an isolated find. During this investigation one quartz flakes were found (Figure 14). The lithic item was determined to be artefactual.

The site consists of one quartz vein flake (Table 1) located on a valley flat with a flat gradient and an open aspect in an open forest (Figure 13). Ground surface disturbance consisted of water wash



erosion and vehicle damage Exposure incidence was 30% with 80% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed as low with the likelihood of intact deposits to be moderate.



Figure 28 CL4 facing west



Figure 29 Area 39 New Sites



POWERLINE NORTH SECTION

Powerline North Section and the associated testing polygon shown in yellow and red in Figure 30 had clearance salvage and was surveyed as part of the clearance work program on 25th October 2017.

Clearance Survey Results

Summary

Five previously lodged site recording occurs in the Powerline North Section:

WCP174 – Artefact Scatter (NOHC 2005)

WCP457 – Artefact Scatter (Kuskie 2015)

WCP458 – Artefact Scatter (Kuskie 2015)

267 – Open Artefact Site (NOHC 2006)

WC IF 3 – Isolated Find

One new sites (WCPXXX to WCPXXX) were recorded in the Powerline North Section. Site WCP458 could not be relocated in the current survey.

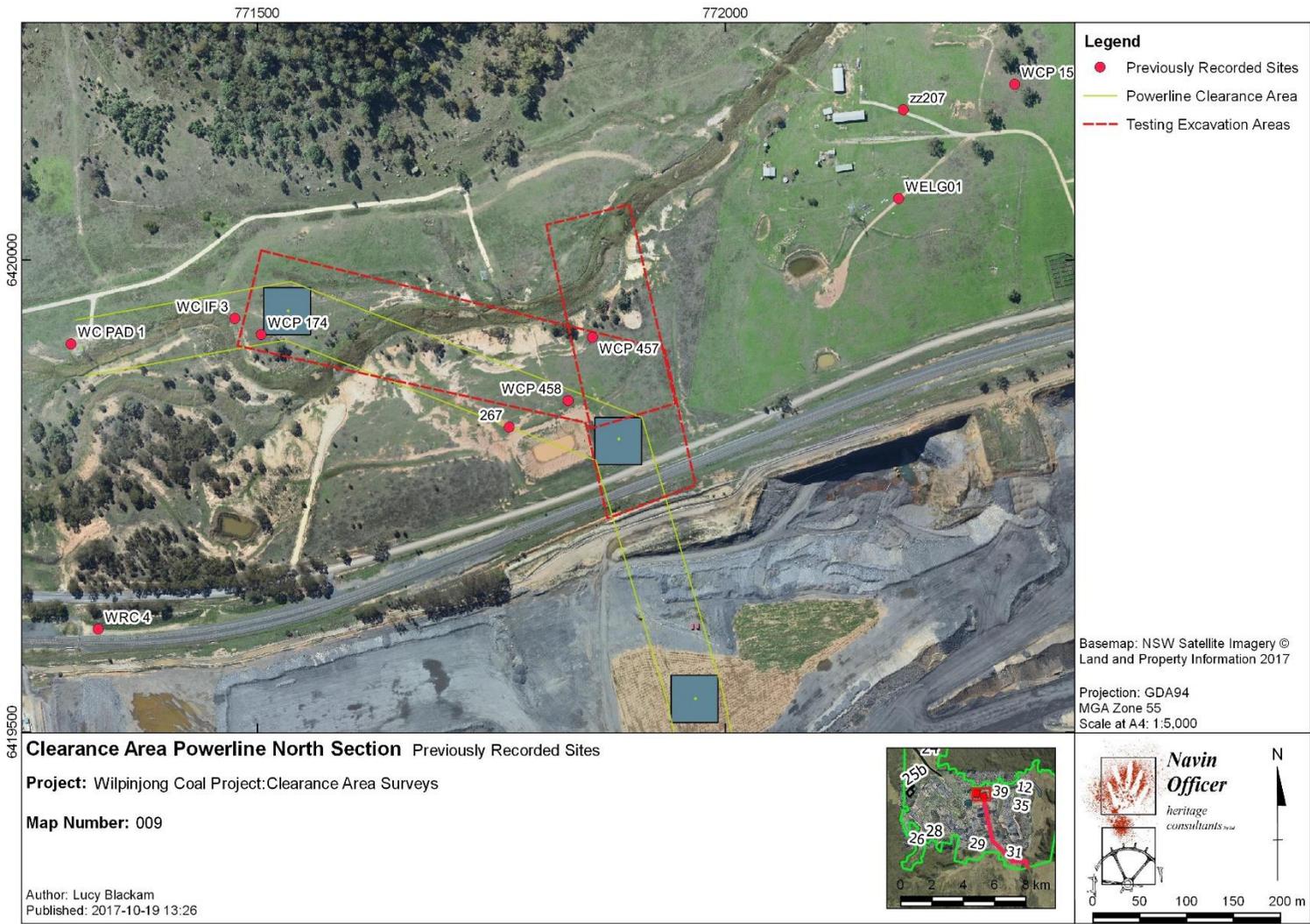


Figure 30 Previously Recorded Sites in Powerline North Section



Previously Recorded Sites

WCP174 – CL20, CL21, CL22, CL23, CL26, CL27, CL28, CL29, CL30

GDA (Zone 55) 771397.6419902

WCP174 was recorded as an artefact scatter (NOHC 2005). During this investigation XX lithic items were collected in a X x X metre area (Figure 14). XX lithic items were determined to be artefactual. This site was partially salvaged as much of it is in an area not being impacted at the moment.

Location data was updated for WCP174 during the current survey from GDA 771504.6419921 (previous recording) to GDA 771397.6419902 (new recording).

The site consists of xx artefacts, including unretouched flakes of quartz vein material (Table 1) located on a (Figure 13). The site is located on an exposure that has occurred from European farming process of contouring. Ground surface disturbance consisted of previous clearing, farming and stock animal activity and contouring construction. The exposure incidence was 40% with 70% visibility within exposures.

WCP174 is located in an area designated for subsurface testing in the ACHMP



Figure 31 WCP174 facing east

WCP457

GDA (Zone 55) 771858.6419918

WCP457 was recorded is an artefact scatter (Kuskie 2015). During this investigation XX lithic items were collected in a X x X metre area (Figure 14). XX lithic items were determined to be artefactual.



Location data was updated for WCP458 during the current survey from GDA XXX (previous recording) to GDA XXX (new recording).

The site consists of xx artefacts, including unretouched flakes of quartz vein material (Table 1) located on a flat gradient in the valley floor (Figure 13). The site is located on an exposure that has occurred from European farming process of contouring. Ground surface disturbance consisted of previous clearing, farming and stock animal activity and contouring construction. The exposure incidence was 40% with 70% visibility within exposures.

WCP457 is located in an area designated for subsurface testing in the ACHMP



Figure 32 WCP457 facing south

267

GDA (Zone 55) 771769.6419823

267 was recorded as an artefact scatter (NOHC 2006). During this investigation two lithic items were collected in a 2 x 2 metre area (Figure 14). two lithic items were determined to be artefactual.

Location data was updated for 267 during the current survey from GDA XXX (previous recording) to GDA XXX (new recording).

The site consists of two artefacts, including unretouched flakes of quartz vein material (Table 1) located on a flat gradient in the valley floor (Figure 13). The site is located on an exposure adjacent to the existing dam. Ground surface disturbance consisted of previous clearing, farming and stock animal activity and dam construction. The exposure incidence was 40% with 70% visibility within exposures.



Figure 33 267 facing south west

WC IF 3

GDA (Zone 55) 771476.6419938

WC IF 3 was recorded as an isolated find (). During this investigation one lithic items were collected in a 2 x 2 metre area (Figure 14). two lithic items were determined to be artefactual.

Location data was updated for 267 during the current survey from GDA XXX (previous recording) to GDA XXX (new recording).

The site consists of two artefacts, including unretouched flakes of quartz vein material (Table 1) located on a flat gradient in the valley floor (Figure 13). The site is located on an exposure adjacent to the existing dam. Ground surface disturbance consisted of previous clearing, farming and stock animal activity and dam construction. The exposure incidence was 40% with 70% visibility within exposures.

Figure 34 WC IF 3 facing



Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an artefact scatter with a potential archaeological deposit and were designated WCPXXX - WCPXXX

WCP CL 45, 46, 47, 44, 42, 65, 64, 61, 41, 66, 40, 39, 70, 63, 60, 62, 69, 38, 37, 50, 72, 36, 50, 35, 34, 33, 67, 48, 51,

GDA (Zone 55)

WCPXX is an extensive artefact scatter with a potential archaeological deposit (PAD). During this investigation XXX lithic items (Figure XX). The XXX lithic item was determined to be artefactual.

The site consists of XXX and is 300 x 100 metres (Table 1) was located on the surface of an active scalded and high exposure areas with erosion control banks produced possibly in the 1960's. The site was on a flat gradient and an open aspect in a previously ploughed paddock which was then extensively overstocked with sheep (Figure 13). Ground surface disturbance consisted of stock damage and ploughing. Exposure incidence was 40% with 60% visibility within exposures. There is moderate to high potential for subsurface material and moderate potential for this material to be undisturbed.

The site was determined to have a PAD as the area is situated along Wilpinjong creek. **NEED TO FURTHER EXPLAIN THIS.**

Christine Maynard from Mudgee LALC spoke of the high significance the creek had an area that runs adjacent to it due to its position in the landscape and the resources it may hold.

This site is located in an area designated for subsurface testing in the ACHMP



Figure 35 WCP facing north east



Figure 36 WCP facing west



Figure 37 WCP facing east





Figure 38 Previously Recorded and Newly Recorded Sites of Powerline North Section



EXPLORATION AREA

Exploration Area shown in blue in Figure 39 had clearance salvage and was surveyed as part of the clearance work program on 23rd October 2017.

Clearance Survey Results

Summary

One previously lodged site recording occurs in the Exploration Area:

WCP523

Three new sites (WCP708 to WCP710) were recorded in the Exploration Area.

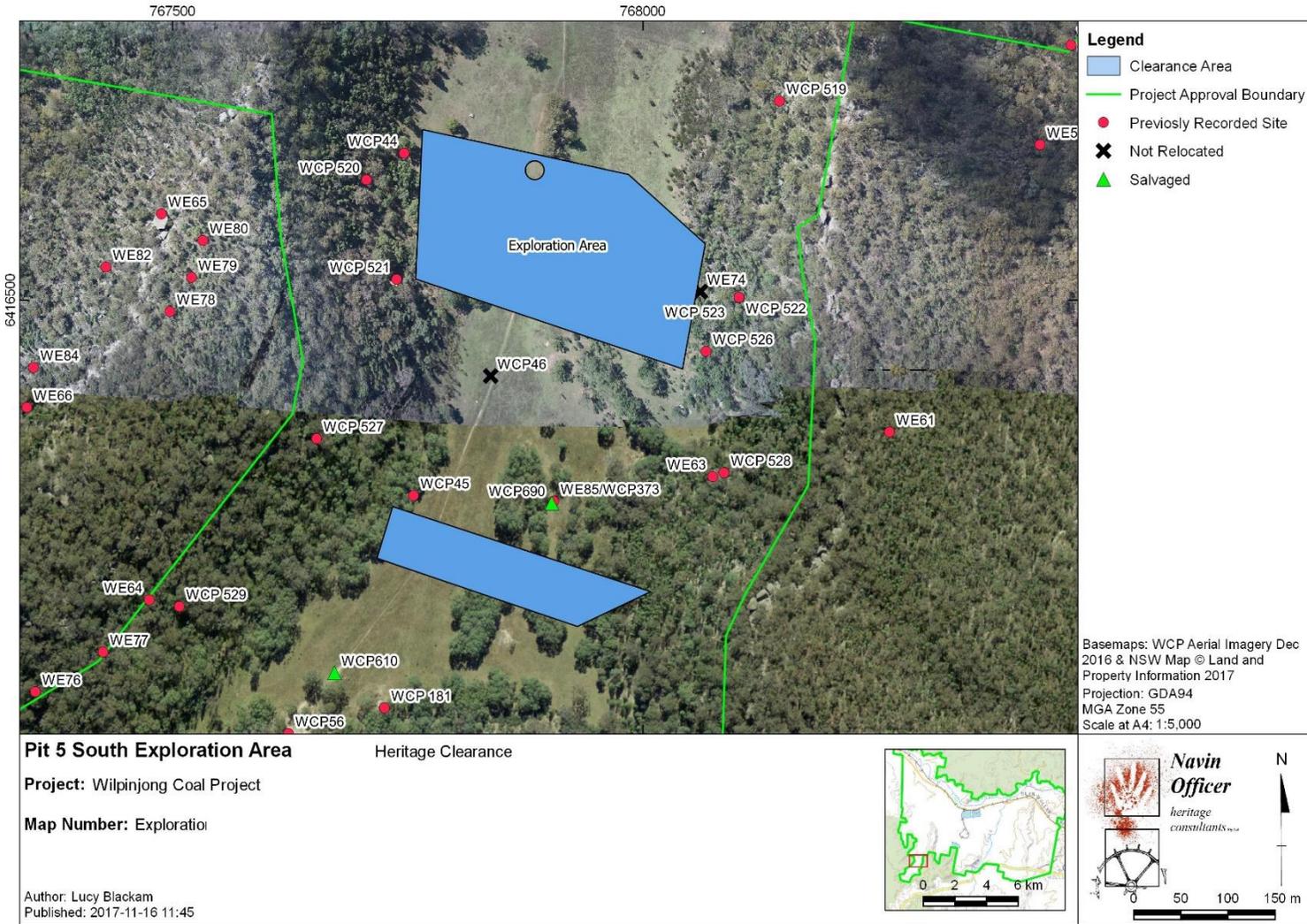


Figure 39 Previously Recorded Sites in the Exploration Area



Previously Recorded Sites

WCP523

GDA (Zone 55) 768013.6416487

WCP523 was recorded as an isolated find of one red tuff core. During this investigation one red tuff core was relocated (Figure 14). The one lithic item was determined to be artefactual.

The site consists of one red tuff core (Table 1) located on a slope with a moderate gradient and an easterly aspect (Figure 13). Ground surface disturbance consisted of water wash erosion, and farming activities. Exposure incidence was 40% with 50% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed as low with the likelihood of intact deposits to be low.



Figure 40 WCP523 facing west



Sites Recorded in the Current Assessment

Three new sites were found during the current assessment. These sites were a grinding groove and two isolated finds. These sites were designated WCPXXX - WCPXXX

WCP710

GDA (Zone 55) 767884.6416637

WCP710 is a grinding groove located on a valley floor at the lowest point of an east facing slope (Figure X). The location has an open aspect with a flat gradient. The four grooves are on an exposed boulder surface in sandstone.

The set of grinding grooves oriented east to west, north east to east south east. The eastern end is recently exposed and has moss removal with the surface patinated by lichens. The rock is bedded and the grooves have natural weather and has been exploited by grinding. The extent of the outcrop including the groove is 0.68 x 0.24 metres encompassing a total site area of 2m². The closest water to WCP710 is XXX XX metres to the XX.

The ground surface disturbance consisted of vehicle movement and stock damage. The exposure incidence was 30% with 80% visibility within exposures.

The individual grooves were around 150 x 100 millimetres (Figure 7.6 and 7.7)



Figure 41 grinding grooves facing north



Figure 42 grinding grooves facing north

WCP708

GDA (Zone 55) 768027.6416494

WCP708 is an isolated find of one quartz lithic item (Figure 14). The one lithic item was determined to be artefactual.

The site consists of one quartz (Table 1) located on a slope with a moderate gradient and an easterly aspect (Figure 13). Ground surface disturbance consisted of water wash erosion, and farming activities. Exposure incidence was 20% with 70% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed as low with the likelihood of intact deposits to be low.



Figure 43 WCP708 facing west

WCP709

GDA (Zone 55) 768055.6416510

WCP709 is an isolated find of one silcrete lithic item (Figure 14). The one lithic item was determined to be artefactual.

The site consists of one silcrete flake (Table 1) located on a slope with a moderate gradient and an westerly aspect on an animal access track (Figure 13). Ground surface disturbance consisted of water wash erosion, and animal activities. Exposure incidence was 20% with 30% visibility within exposures. There is low potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed as low with the likelihood of intact deposits to be low.



Figure 44 CL2 facing north west



Figure 45 Previously Recorded and Newly Recorded Sites of the Exploration Area



SCARRED TREE MOVEMENT

Movement of scarred trees free Pit 5 Shed to Cumbo shed was done on the 27th of October. Whilst on the Cumbo compound site trees already put on the site were also moved to closed shed located on site.

Scarred Tree Movement

Summary

Trees moved from Pit 5 to Cumbo

WCP111

WCP113

WCP55

WCP112

WCP123

Trees moved from Cumbo ground to Cumbo Shed

WCP197

WCP96

WCP98

WCP97

All trees were moved with no damage to existing scars. Existing trees in Cumbo shed to the left were noticed to have been surrounded by chemicals and farming/mining equipment, movement of this material should be remedied as to not damage the scarred trees with the equipment.



Figure 46 WCP111 at rest in shed



Figure 47 WCP111 wrapped prior to movement



Figure 48 Lift of WCP111



Figure 49 WCP111 lift onto truck



Figure 50 WCP111 on truck



Figure 51 WCP113 at rest



Figure 52 WCP113 wrap over scar and beginning lift



Figure 53 WCP113 being positioned on truck



Figure 54 WCP55 scar and at rest



Figure 55 WCP55 wrapped and being moved



Figure 56 WCP55 being loaded on to truck for movement



Figure 57 Load secured for movement of WCP55, WCP113, and WCP111 to Cumbo shed

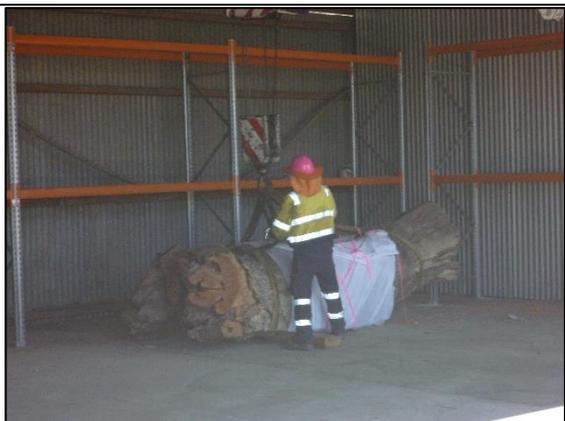


Figure 58 WCP111 moved into Cumbo shed



Figure 59 WCP113 lift off truck



Figure 60 WCP113 at rest in Cumbo shed



Figure 61 WCP55 lift off truck



Figure 62 WCP55 placement in Cumbo shed



Figure 63 WCP112 scar before lift



Figure 64 WCP112 wrapped and being lifted



Figure 65 WCP112 on truck



Figure 66 No identifying number – lift



Figure 67 No identifying number – on truck



Figure 68 WCP123 scar at rest



Figure 69 WCP123 being moved



Figure 70 WCP123 repositioned and rolled to stop scar being positioned scar down on the ground.



Figure 71 WCP123 positioned on truck



Figure 72 WCP123 into Cumbo shed



Figure 73 trees in combo shed



Figure 74 Unload of WCP112 into shed



Figure 75 General view of trees to be moved to new shed



Figure 76 WCP197 on the movement



Figure 77 WCP197 in shed



Figure 78 WCP96 1 of 2 lift



Figure 79 WCP96 1 of 2 in shed



Figure 80 WCP96 2/2 with wrap



Figure 81 WCP96 2/2 in shed



Figure 82 WCP98 before repositioning to shed



Figure 83 WCP98 reposition in shed



Figure 84 WCP97 1 of 2 picked up from old location



Figure 85 WCP97 1 of 2 dropped off in shed



Figure 86 WCP97 2/2 cut stump of tree



Figure 87 WCP97 2/2 cut stump moved into shed



Figure 88 WCP96 1/3 and slab moved



Figure 89 WCP96 1/3 and slab relocated in shed



Figure 90 WCP96 2/3 in position



Figure 91 WCP96 2/3 relocated in shed



Figure 92 Trees should not be stored with materials this is at Cumbo shed and should be remedied



DUE DILIGENCE SURVEY RESULTS

Sites DD1, DD2 and DD3 were discovered when doing the clearance survey and testing for the H1-3 testing area in October 2017. The sites are located next to the existing Wilpinjong creek and arm to the north of it. These sites are in the Wilpinjong mine lease but at this time are not being impacted. It was discussed on site with WCP supervisor Clark Potter and associated Representative Aboriginal Parties that the sites should be recorded, reported and a conservation management decision be put in place to protect the sites from further erosion or complete loss of the sites. Therefore, a due diligence assessment was conducted in accordance with the National Parks and Wildlife Act 1974 (NPW Act) no artefacts were collected from these areas as a part of this assessment.

What is the area characterized by and what are the soils and vegetation

Ground surface disturbance evident across the area includes forest clearance, agricultural ploughing and pasture improvement, erosion scalds from stock animals and surface water erosion, vehicle track construction and powerline easement.

No previously recorded sites existed where the new ones have been found.

Powerline North Section

Summary

DD1

DD2

DD3



WCP DD1, DD2, and DD3

GDA (Zone 55)

WCPXX is an artefact scatter with a potential archaeological deposit (PAD). During this investigation XXX lithic items (Figure XX). The XXX lithic item was determined to be artefactual.

The site consists of XXX (Table 1) was located on the surface of an elevated section between the existing Wilpinjong creek and the arm of the creek to the north. The site was on a flat gradient and an open aspect and is an active scald and high exposure (Figure XX). Ground surface disturbance consisted of stock damage and water erosion. Exposure incidence was 40% with 60% visibility within exposures. There is moderate to high potential for subsurface material and moderate potential for this material to be undisturbed.

The site was determined to have a PAD as the area was elevated above the creek path. The active modern channel is the cause for the artefacts eroding out into the existing channels of the creek.

Pre-construction management of subsurface archaeological material is required for this site as the archaeological potential is assessed as moderate with the likelihood of intact deposits to be moderate.

Figure 93 DD1, DD2 and DD3 facing



Table 1 Lithic Item descriptions with site names and locations



1 ABORIGINAL CONSULTATION

Wilpinjong Coal Mine (WCM) and Peabody Energy conduct an ongoing consultation program with Aboriginal stakeholders regarding cultural heritage management within the Wilpinjong mining lease (ML 1573). There are currently eight organisations or individuals registered as Aboriginal stakeholders (also known as 'registered Aboriginal parties' or RAPs). The registration process is a standard protocol defined by the NSW Office of Environment and Heritage (OEH). Navin Officer Heritage Consultants contacted each stakeholder to invite a representative of each group to be involved in the site visits for this assessment. This was done via email on XXX. One stakeholder responded to the invitation and their representatives attended the fieldwork.

Field Participation

The following representatives from three registered stakeholder groups responded to invitations and participated in the fieldwork program conducted over three days, 25th to 27th July 2017:

- Christine Maynard Mudgee Local Aboriginal Land Council;
- Steven Flick Murrong Gillinga.
- Sharne North East Wiradjuri Company Ltd
- Tayla Warrabinga Native Title Claimants Aboriginal Corporation
- Brooke Williams Warrabinga Native Title Claimants Aboriginal Corporation

2 NOHC FIELDWORK PERSONNEL

Archaeologists Lucy Blackam and Tony Barham undertook the survey, recording and artefact collection.

Dr Oliver Macgregor undertook the artefact description.

3 CONCLUSIONS AND RECOMMENDATIONS

Fourteen previously recorded sites were located in Powerline North Section, Exploration Area and Areas 12, 24, and 25b and have undergone reassessment.

A total of sixteen previously unrecorded Aboriginal sites, WCP708 to WCP724 have been located as a result of this assessment.

Sixteen new Aboriginal site recordings, WCP708 to WCP724 were identified within the Wilpinjong project boundary in Powerline North Section, Exploration Area and Areas 12, 24, 25b, and 39

Area 12 (Part)

Three previously lodged site recordings occur in the Area 12 section:

273 – Open Artefact Site (NOHC 2005)

WCP559 – Artefact Scatter (XX)

WC IF 2 – Isolated Find (XX)



Five new sites (WCPXXX) were recorded in the Area 12 section. Two sites (273 and WCP559) were not relocated in the current survey

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Area 12 (Part) is cleared for impact relative to Figure X

Area 23 (Part)

No previously lodged site recording occurs in Area 24:

No new sites were recorded in the current survey

Recommendations:

1. Area 23 (Part) is cleared for impact relative to Figure XX.

Area 24

Two previously lodged site recording occurs in Area 24:

CE-12-OS – Artefact Scatter (Kayandel 2006)

CE-14-OS – Artefact Scatter (OzArk 2005)

Five new sites (WCPXXX to WCPXXX) were recorded in the Area 24. Two sites were not relocated in the current survey (CE-12-OS and CE-14-OS)

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Area 24 is cleared for impact relative to Figure XX

Area 25B

Two previously lodged site recording occurs in Area 25B:

WCP452 – Isolated Find (Apex 2013)

WCP464 – Artefact Scatter (Kuskie 2015)

Three new sites (WCPXX) were recorded in Area 25B.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Area 25B is cleared for impact relative to Figure XX

Area 28



No previously lodged site recording occurs in Area 28

No new sites were recorded in Area 28.

Recommendations:

1. Newly recorded Aboriginal sites (XXX) should be entered on the Wilpinjong sites database.
2. Area 28 is cleared for impact relative to Figure XX

Area 36

No previously lodged site recording occurs in Area 36

No new sites were recorded in Area 36.

Recommendations:

1. Newly recorded Aboriginal sites (XXX) should be entered on the Wilpinjong sites database.
2. Area 36 is cleared for impact relative to Figure XX

Area 37

No previously lodged site recording occurs in Area 37.

No new sites were recorded in Area 37.

Recommendations:

1. Newly recorded Aboriginal sites (XXX) should be entered on the Wilpinjong sites database.
2. Area 37 is cleared for impact relative to Figure XX

Area 38

No previously lodged site recording occurs in Area 38

No new sites were recorded in Area 38.

Recommendations:

1. Newly recorded Aboriginal sites (XXX) should be entered on the Wilpinjong sites database.
2. Area 38 is cleared for impact relative to Figure XX

Area 39

No previously lodged site recording occurs in Area 39

Two new sites were recorded in Area 39.

Recommendations:

1. Newly recorded Aboriginal sites (XXX) should be entered on the Wilpinjong sites database.



2. Area 39 is cleared for impact relative to Figure XX

Powerline North Section

Four previously lodged site recording occurs in the Powerline North Section:

WCP174 – Artefact Scatter (NOHC 2005)

WCP457 – Artefact Scatter (Kuskie 2015)

WCP458 – Artefact Scatter (Kuskie 2015)

267 – Open Artefact Site (NOHC 2006)

XXX new sites (WCPXXX to WCPXXX) were recorded in the Powerline North Section.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.

2. Powerline North Section is cleared for impact relative to Figure XX and once testing is complete

Exploration Area

Three previously lodged site recording occurs in the Exploration Area:

WCP523 – Artefact Scatter (NOHC 2005)

WCP526

WE74

Three new sites (WCPXXX to WCPXXX) were recorded in the Exploration Area.

Recommendations:

1. Newly recorded Aboriginal sites (WCPXXX) should be entered on the Wilpinjong sites database.
2. Exploration Area is cleared for impact relative to Figure XX



Figure Areas cleared



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- Wilpinjong Coal Pty Ltd (WCPL) 2006, Wilpinjong Coal Project Environmental Impact Statement.

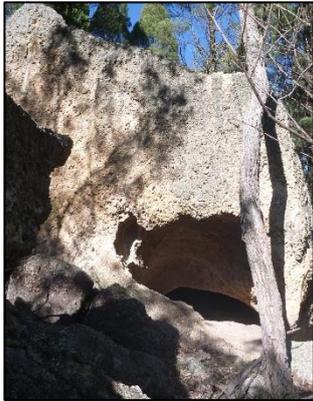


Wilpinjong Coal Mine

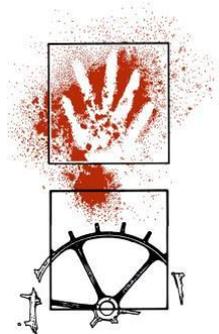
Aboriginal Cultural Heritage Clearance Works



Exploration Areas



August 2017



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EXECUTIVE SUMMARY

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

This report documents Aboriginal cultural heritage clearance works for exploration at Exploration Areas A, B, C, D, E, F, G, H and I (Figure 1). The assessment includes locations both within and outside of the Wilpinjong Coal Pty Ltd project approval boundary.

Exploration Areas A, B, C, D, E, F and I are within the project approval boundary and are subject to the Wilpinjong Coal Mine Aboriginal Cultural Heritage Management Plan (ACHMP). Surface salvage and area clearance actions were undertaken at these sites.

Three new Aboriginal site recordings, WCP690, WCP691 and WCP695 were identified within the Wilpinjong project boundary in Areas B, E and F as a result of this assessment.

Areas G and H are outside of the project approval boundary. A due diligence assessment was undertaken at each of these locations.

Three new Aboriginal site recordings, WCP692, WCP693 and WCP694 were identified outside the Wilpinjong project boundary in Areas G and H as a result of this due diligence assessment.

Therefore, the recommendations for the following Exploration Areas are:

Area A

There are no previously lodged site recordings that occur in Area A:

No new sites were recorded in Area A,

Recommendations:

1. Area A is cleared for impact relative to Figure 39.

Area B

Two previously lodged site recordings occur in Area B:

WCP45 – Rock shelter (NOHC 2005)

WCP46 – Open artefact site (NOHC 2005)

One previously lodged site recording occurs within ten metres of Area B:

WCP521 – Rock shelter with PAD (South East Archaeology 2015)

Two sites (WCP45 and WCP521) were relocated during the current survey program.

One site (WCP46) could not be relocated by the current survey program.

One new site (WCP690) was recorded in Area B.

Recommendations:



1. Newly recorded Aboriginal site (WCP690) should be entered on the Wilpinjong sites database.
2. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:

WCP45 – 767764.6416289
3. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the Rock shelter site then the extent and type of further work for Rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.
4. Area B is cleared for impact relative to Figure 40 with buffer zones around Rock shelter sites WCP45 and WCP521.

Area C

There are no previously lodged site recordings occur in Area C.

No new sites were recorded in Area C.

Part of Area C is located within an area that has been recommended for subsurface testing in the ACHMP.

Recommendations:

1. Part of Area C is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area C should be fenced to avoid impact.
2. Area C is cleared for exploration relative to Figure 41 with a buffer zone around the subsurface testing area.

Area D

One previously lodged site recording occurs in Area D:

CE-09-OS – Open artefact site (Kayandel 2006)

Two previously lodged site recordings occur within ten metres of Area D:

CE-10-OS – Open artefact site (Kayandel 2006)

CE-11-OS – Open artefact site (Kayandel 2006)

One site (CE-11-OS) was re-located and re-assessed, it was determined to be inside Area D.

Two sites (CE-09-OS and CE-10-OS) could not be relocated during the current survey program.

No new sites were recorded in Area D.

Part of Area D is located within an area that has been recommended for subsurface testing in the ACHMP.

Recommendations:

1. The current recorded location for the following site should be updated on relevant databases. The new recording for this site is:



CE-11-OS (WCP285) – GDA94 (Zone 55) 768427.6421750

2. Part of Area D is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area D should be fenced to avoid impact.

Area D is cleared for exploration relative to Figure 42 with a buffer zone around the subsurface testing area.

Area E

There are no previously lodged site recordings occur in Area E:

One new site (WCP691) was recorded in Area E.

Recommendations:

1. Newly recorded Aboriginal site (WCP691) should be entered on the Wilpinjong sites database.
2. Part of Area E is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area E should be fenced to avoid impact.
3. Area E is cleared for exploration relative to Figure 43 with a buffer zone around the subsurface testing area.

Area F

Three previously lodged site recordings occur in Area F:

WCP530 – Artefact Scatter (South East Archaeology 2015)

WCP533 – Isolated Artefact (South East Archaeology 2015)

WCP525 – Isolated Artefact (South East Archaeology 2015)

Two Sites (WCP525, and WCP530) were relocated and re-assessed.

One site (WCP533) could not be relocated during the current survey program.

One new site (WCP695) was recorded in Area F.

Recommendations:

1. Part of Area F is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area F should be fenced to avoid impact.
2. WCP525 in Area F is in an area of moderate to high potential for subsurface artefacts. This area has been assessed as PAD and is recommended to be subject to further subsurface testing to determine the extent of the site. This section in Area F should be fenced to avoid impact.
1. Area F is cleared for exploration relative to Figure 44 with buffer zones around the subsurface testing area and PAD WCP525.



Area I

Area I Clearance Survey

Six previously lodged site recordings occur in Area I:

WCP147 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP148 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP229 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP230 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP538 – Open Artefact Site (South East Archaeology 2015)

WCP545 – Open Artefact Site (South East Archaeology 2015)

One Previously lodged site recording occurs within twenty metres of Area I in a previously cleared area:

WCP546 – Artefact Scatter (South East Archaeology 2015)

Salvage was attempted at site WCP546 during a previous clearance survey (NOHC 2016) but the site was not able to be relocated.

Seven sites (WCP147, WCP148, WCP229, WCP230, WCP538, WCP545, and WCP546) were relocated and re-assessed during the current survey.

No new sites were recorded in Area I.

Recommendations:

1. The current recorded location for site WCP538 should be updated on relevant databases. New coordinates for this site are:

WCP538 – 770715.6415999

2. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the Rock shelter site then the extent and type of further work for Rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.

Area I is cleared for impact relative to Figure 45 with buffer zones around Rock shelter sites WCP147, WCP148, WCP229 and WCP230.

Area G Due Diligence

There are no previously lodged site recordings in Area G.

Two new Aboriginal sites (WCP692 and WCP693) were recorded in Area G.

Recommendations:

1. Newly recorded Aboriginal sites (WCP692 and WCP693) should be entered on the Wilpinjong sites database.



2. If these sites cannot be avoided, a programme of surface collection and subsurface archaeological salvage should be conducted prior to impacts. These areas in Area G should be fenced to avoid impact.
3. Area G is cleared for exploration relative to Figure 46 with buffer zones around PADs WCP692 and WCP693.

Area H Due Diligence

One previously lodged site recording occurs in Area H:

WCP569 – Isolated find (South East Archaeology 2015)

This site could not be re-located by the current survey program.

One new site (WCP694) was recorded in Area H.

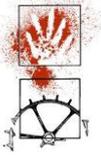
Recommendations:

1. Newly recorded site WCP694 should be entered on the Wilpinjong Aboriginal sites database.
2. If a site cannot be avoided, a programme of archaeological salvage (surface collection) should be conducted prior to impacts. Sites in Area H should be fenced to avoid impact.
3. Area H is cleared for exploration relative to Figure 47 with buffer zones around open artefact sites WCP569 and WCP694.



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BACKGROUND

The Wilpinjong Coal Project (the Project) is located approximately 40 kilometres north-east of Mudgee, near the village of Wollar within the Mid-West Regional local government area, in central New South Wales. The Project consists of an open cut mining operation, together with the operation of a Coal Handling and Preparation Plant (CHPP); raw and product handling facilities; and rail and train loading infrastructure.

In 2006 Project Approval was granted under Section 75J of the *Environmental Planning and Assessment Act 1979* (Project Approval 05-0021). In the same year, the mine was purchased by Peabody Energy. The conditions of the Project Approval included the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) and a range of specified requirements in relation to identified heritage sites (WCPL 2006).

The ACHMP includes an Ancillary Disturbance Area Protocol which includes:

1. Pre-clearance archaeological survey (conducted with the assistance of Aboriginal representatives). This survey would include consideration of the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage.
2. Avoidance of the identified Aboriginal object/sites by realigning or adjusting infrastructure/disturbance area if practicable.

If the object/site cannot be avoided:

1. Consider surface salvage (advice from Aboriginal representatives and/or an archaeologist will be sought).
2. If relevant, consider the archaeological and cultural heritage values associated with the site and the potential value of conducting subsurface salvage (subject to review of the ACHMP and consultation with Aboriginal representatives and/or an archaeologist).
3. Conduct surface salvage (and subsurface salvage if necessary) with the assistance of Aboriginal representatives and an archaeologist.
4. Store salvaged artefacts in the "Keeping Place".
5. Post-rehabilitation, replace artefacts onto the rehabilitated landform.

Surface Salvage

The ACHMP specifies that surface salvage will involve the systematic recovery of all evident surface artefacts from a representative sample of open artefact scatters and from selected isolated finds at known sites within the project disturbance area. Surface collections will occur on a progressive basis prior to the commencement of ground surface disturbance works within an area.

A basic level of recording will be conducted on all recovered artefactual surface material including location, technological traits, and stone type. This analysis has been conducted by a qualified lithic specialist, Dr Oliver Macgregor.

This Report

This report presents the results of a pre-clearance archaeological survey and surface salvage of Exploration Areas A, B, C, D, E, F and I inside the project approval boundary, and a due diligence survey of Exploration Areas G and H outside the project approval boundary.

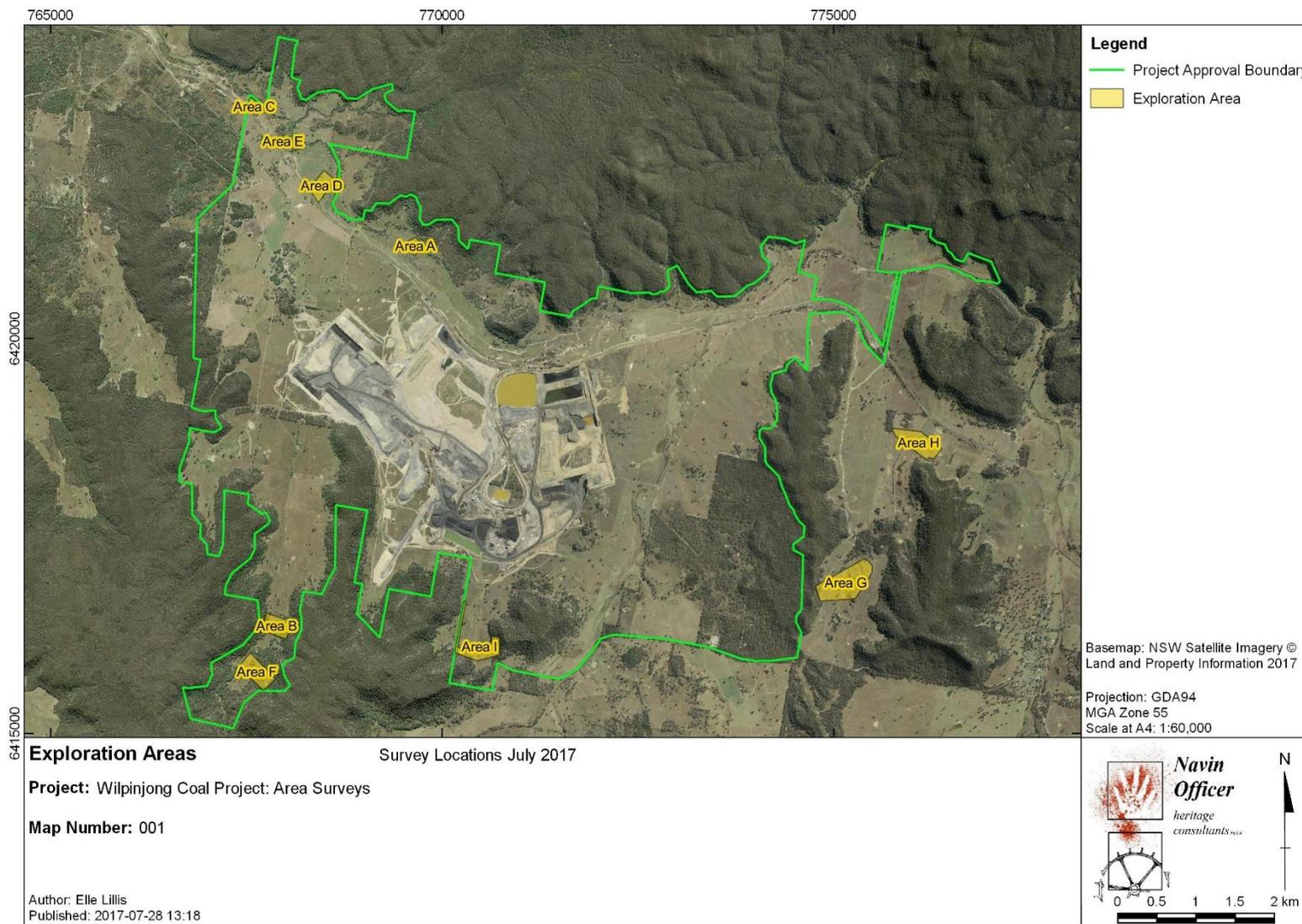


Figure 1 Location of Exploration Areas



SURFACE SALVAGE

AREA A

Area A shown in yellow in Figure 2 was surveyed as part of this exploration clearance work program on 26th July 2017.

Clearance Survey Results

Summary

There are no previously lodged site recordings in Area A.

No new sites were recorded in Area A.

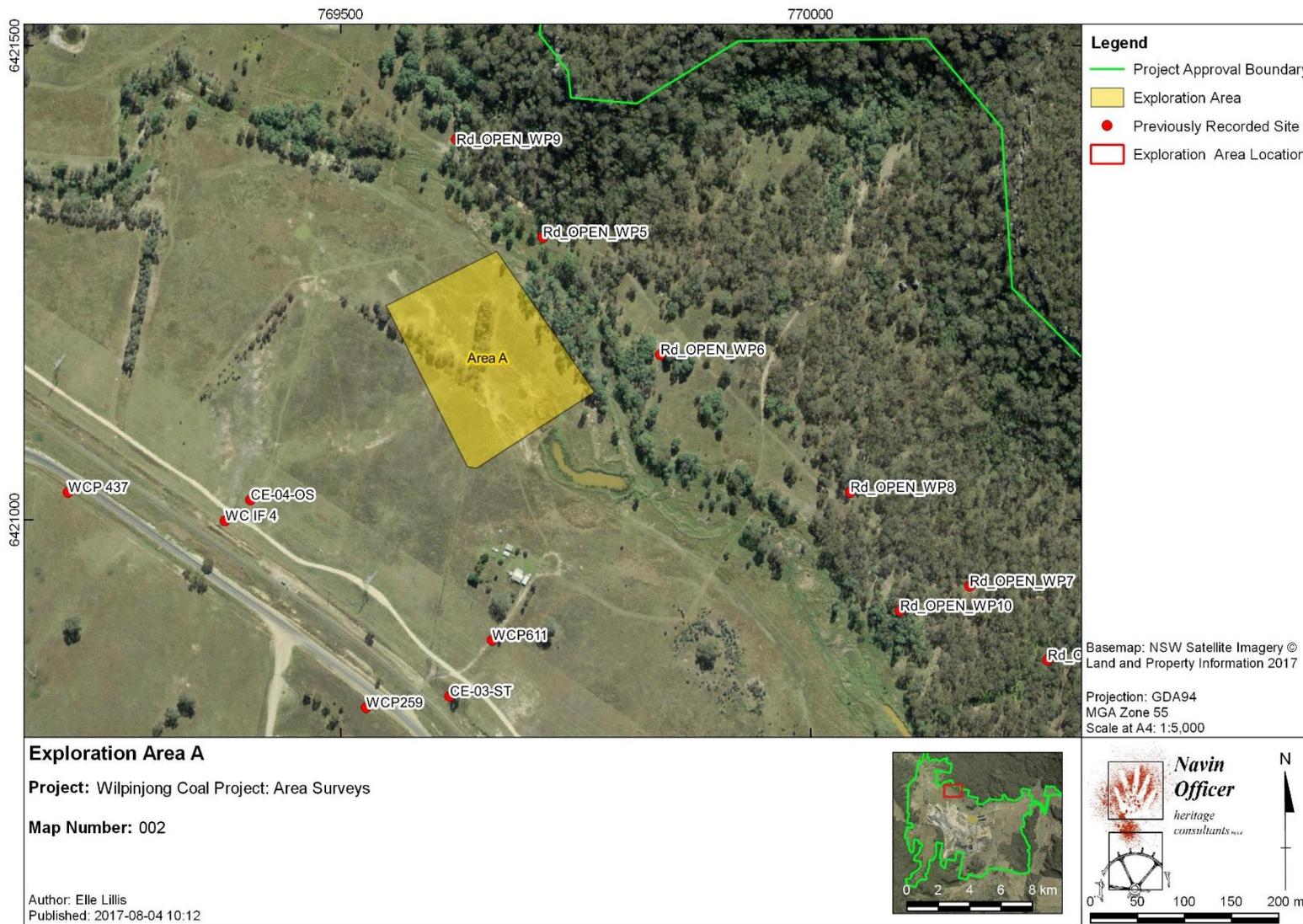


Figure 2 Location of Exploration Area A



AREA B

Area B shown in yellow in Figure 3 had clearance salvage and was surveyed as part of this exploration clearance work program on 26th July 2017.

Clearance Survey Results

Summary

Two previously lodged site recordings occur in Area B:

WCP45 – Rock shelter (NOHC 2005)

WCP46 – Open artefact site (NOHC 2005)

One previously lodged site recording occurs within ten metres of Area B:

WCP521 – Rock shelter with PAD (South East Archaeology 2015)

All sites were looked for during the current investigation.

Two sites (WCP45 and WCP521) were re-located by the current survey program.

One site (WCP46) was not relocated by the current survey program.

One new site (WCP690) was recorded in Area B (Figure 7).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

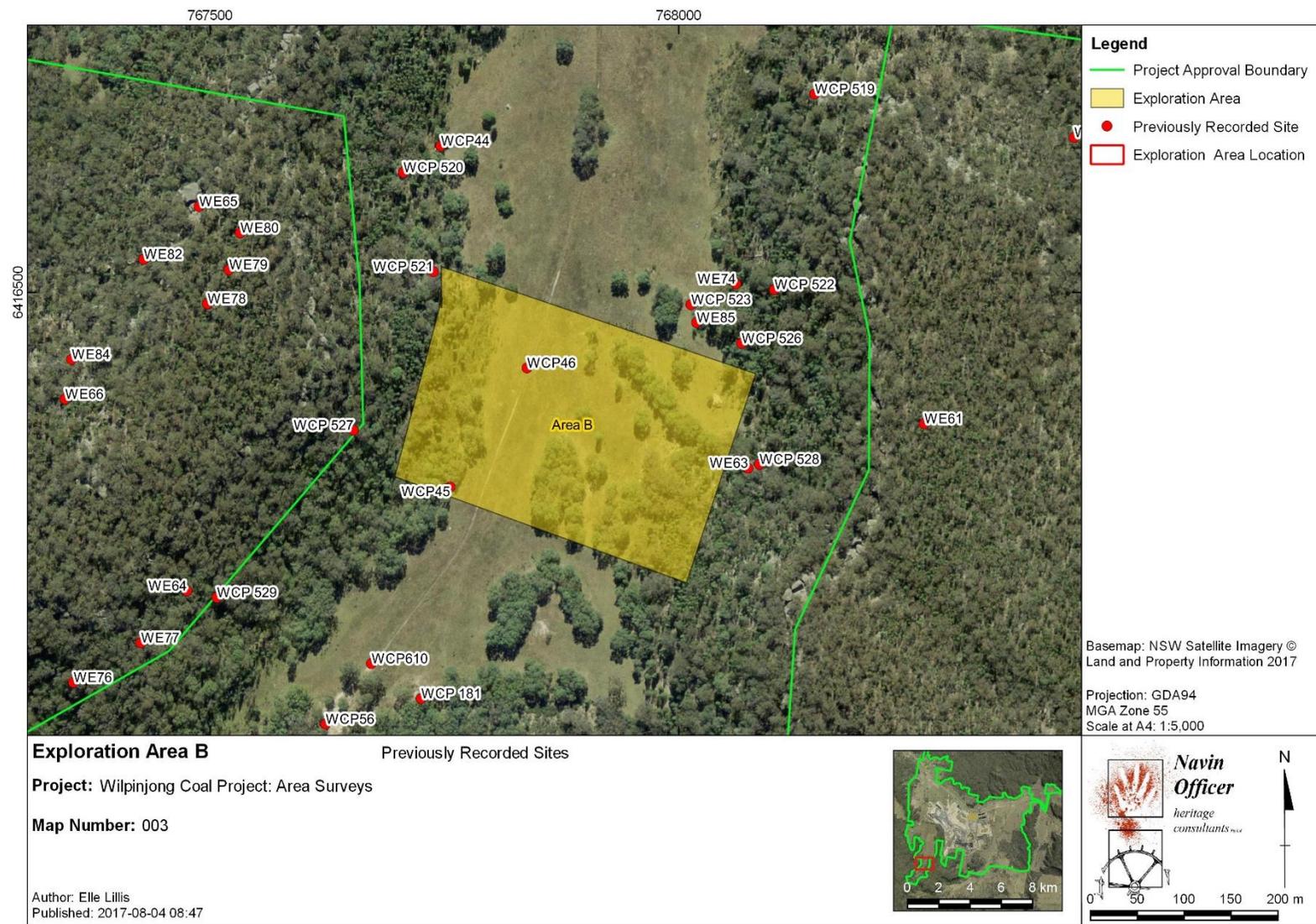


Figure 3 Previously recorded sites in Exploration Area B



Previously Recorded Sites

WCP45

GDA (Zone 55) 767756.6416294

WCP45 rock shelter with surface artefacts was relocated during this assessment (Figure 4).

Two quartz flakes were located within the rock shelter. These artefacts were not collected as part of the current investigation.



Figure 4 WCP45 facing west

WCP521

GDA (Zone 55) 767738.6416522

WCP521 Rock shelter with Potential Archaeological Deposit was relocated during this assessment (Figure 5).

No artefacts were located in association with this rock shelter.



Figure 5 WCP521 (South East Archaeology 2015)

Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an isolated find which was subsequently collected. The site has been designated WCP690.

WCP690

GDA (Zone 55): 767903.6416286

WCP690 is an isolated find. Two lithic items of quartz vein material were collected in a 1m x 1m area. One lithic item was determined to be artefactual and one was determined to be non-artefactual.

The site consists of one unretouched flake of quartz vein material (Table 1) located in open forest on a low gradient with a north aspect (Figure 6).

Ground surface disturbance consisted of previous clearing, animal and farming activity and surface water erosion. The exposure incidence was 70% with 80% visibility in exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low.



Figure 6 WCP690 facing south east

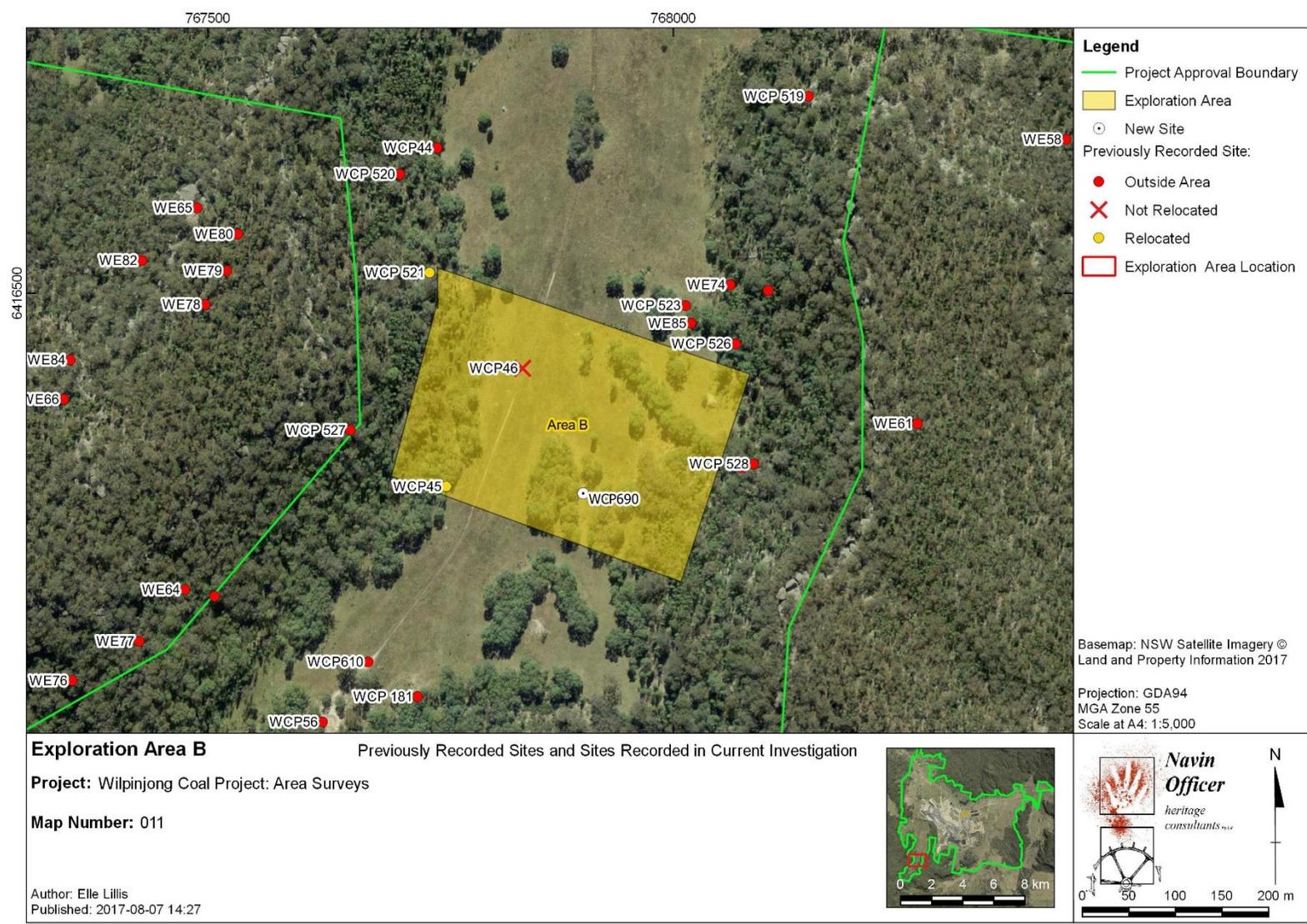


Figure 7 Previously recorded sites and sites recorded in the current investigation in Exploration Area B



AREA C

Area C shown in yellow in Figure 8 had clearance salvage and was surveyed as part of this exploration clearance work program on 26th July 2017.

Clearance Survey Results

Summary

There are no previously lodged site recordings in Area C.

Area C is partly located in an area recommended for subsurface testing in the ACHMP (Figure 9).

No new sites were recorded in Area C.

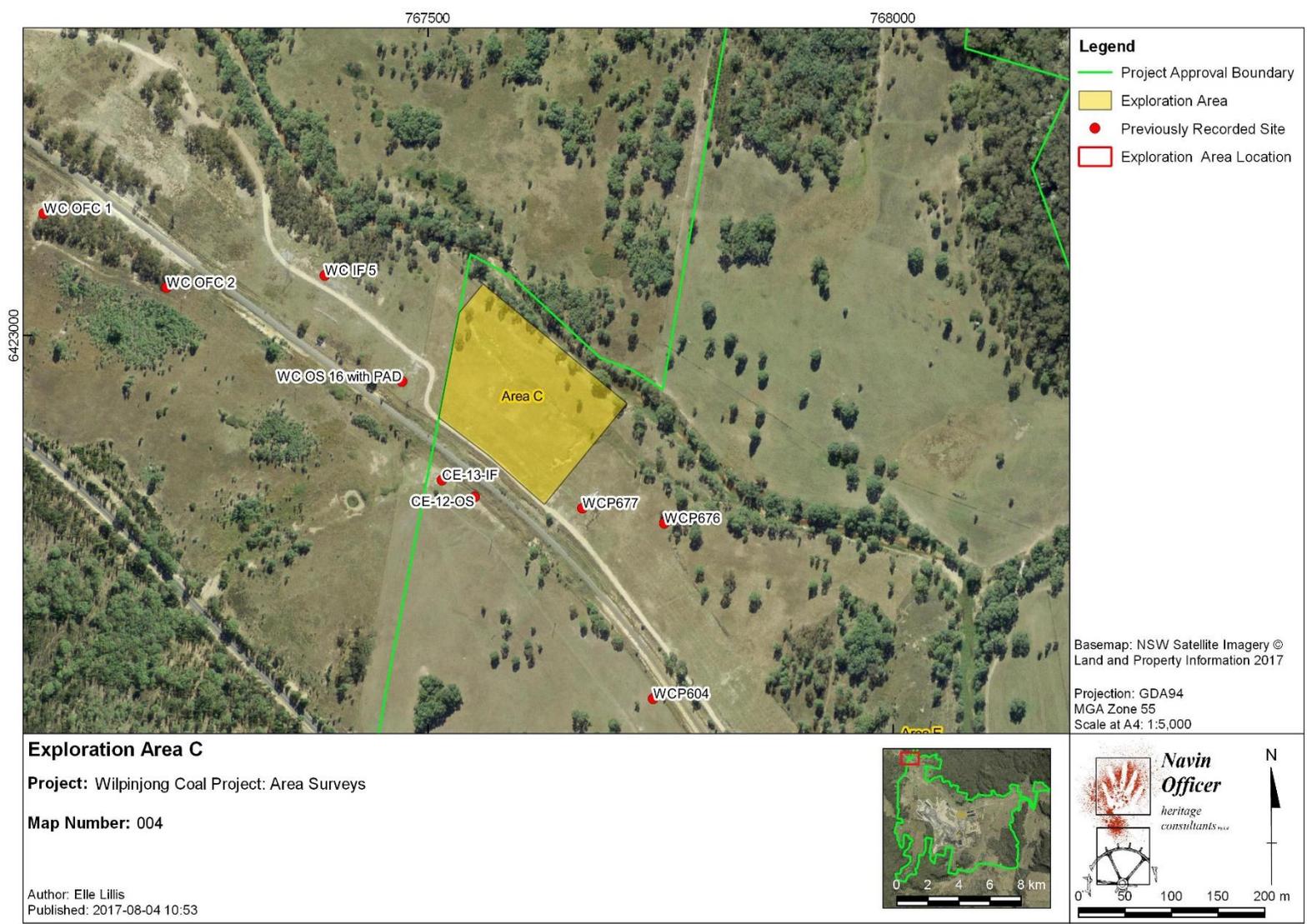


Figure 8 Location of Exploration Area C

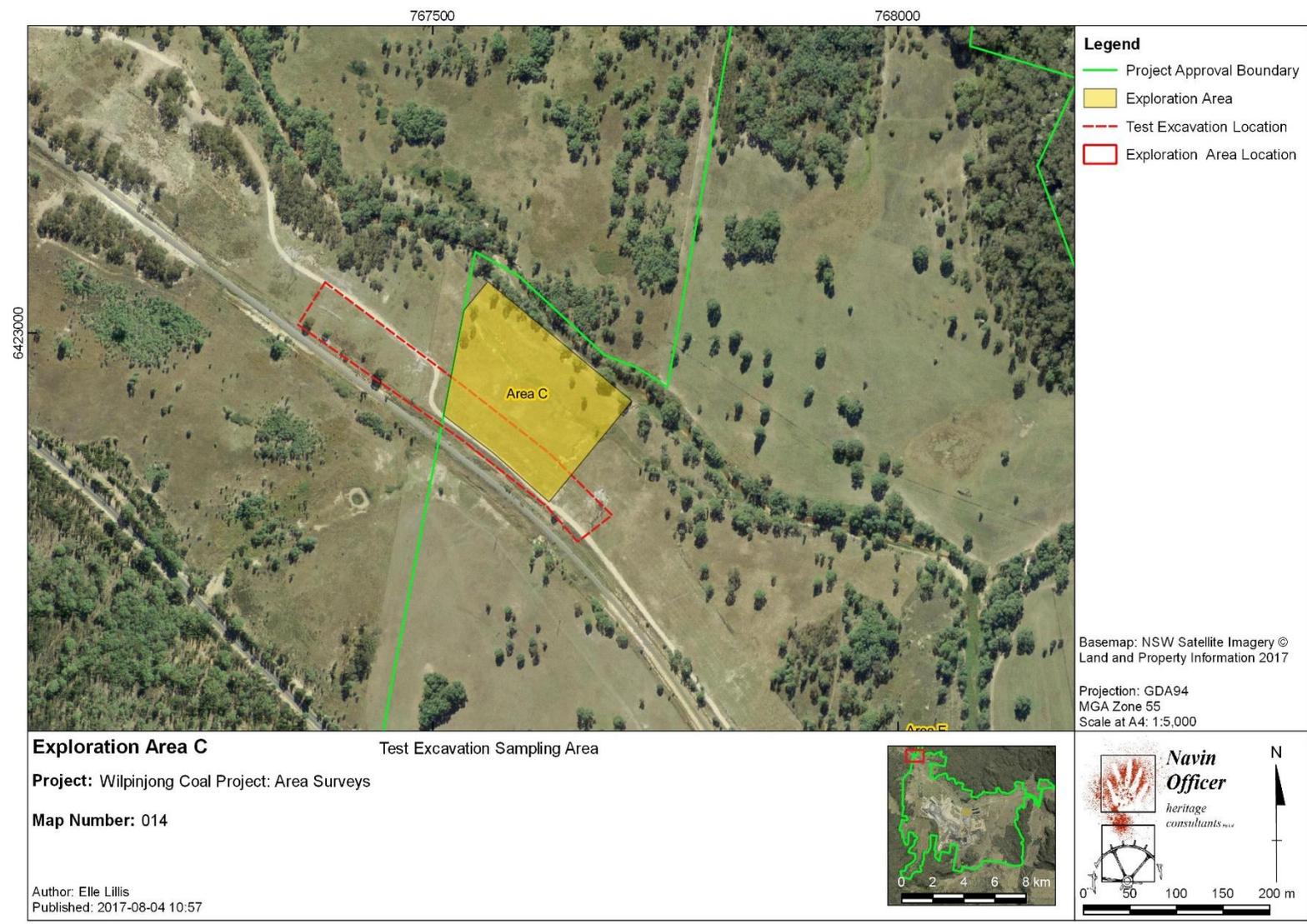


Figure 9 Test Excavation Sampling Area in Exploration Area C



AREA D

Area D shown in yellow in Figure 10 had clearance salvage and was surveyed as part of this exploration clearance work program on 26th July 2017.

Clearance Survey Results

Summary

One previously lodged site recording occurs in Area D:

CE-09-OS – Open artefact site (Kayandel 2006)

Two previously lodged site recordings occur within ten metres of Area D:

CE-10-OS – Open artefact site (Kayandel 2006)

CE-11-OS – Open artefact site (Kayandel 2006)

All sites were looked for during the current investigation.

One site (CE-11-OS) was re-located and re-assessed, it was determined to be inside Area D.

Two sites (CE-09-OS and CE-10-OS) were not relocated during the current survey program.

No new sites were recorded in Area D

Area D is partly located in an area recommended for subsurface testing in the ACHMP (Figure 13).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

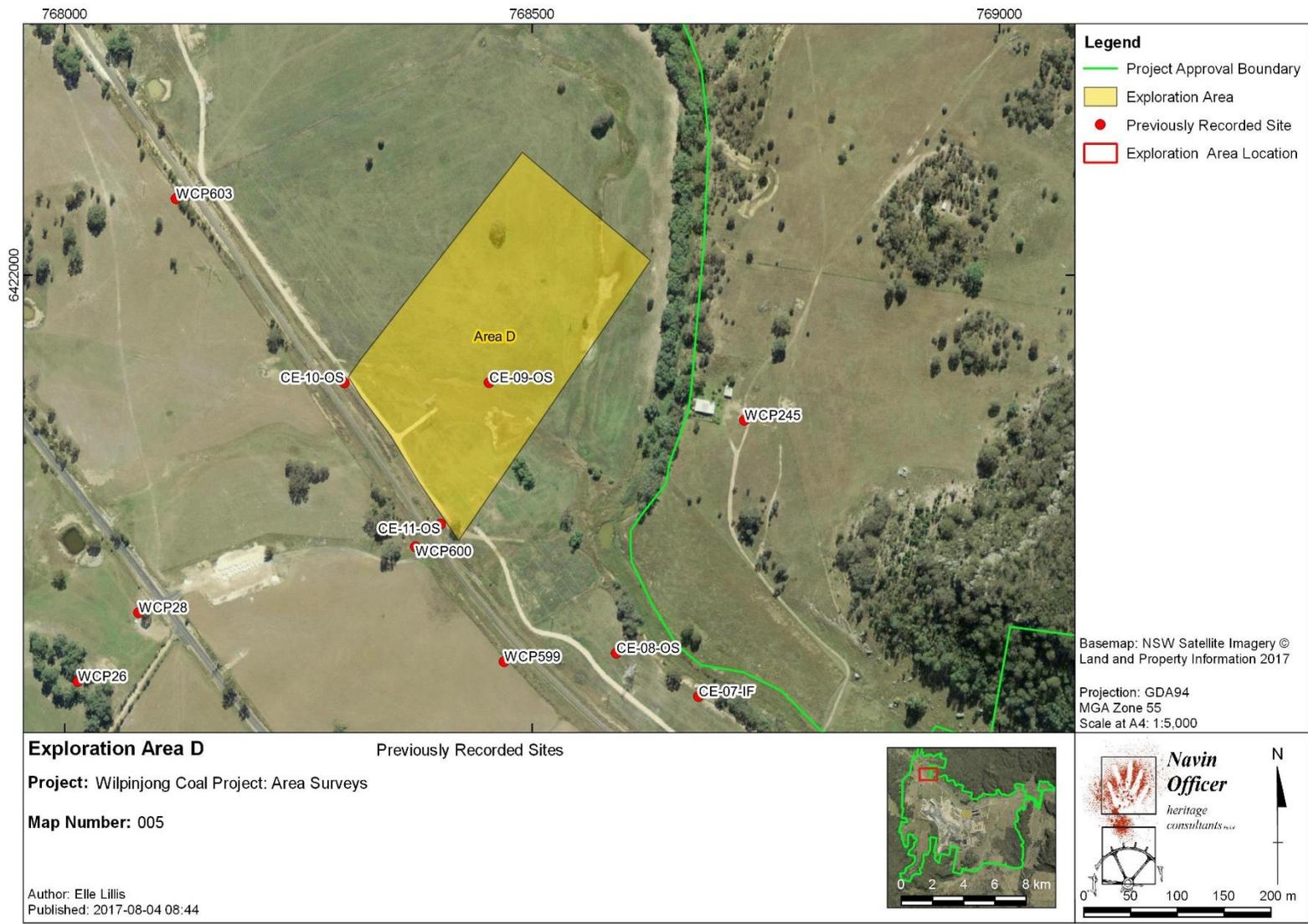


Figure 10 Previously recorded sites in Exploration Area D



Previously Recorded Sites

CE-11-OS (WCP285)

GDA (Zone 55) 768427. 6421750

CE-11-OS (WCP285) was recorded as an artefact scatter of two artefacts. During this investigation nineteen lithic items were collected in a 45 x 20 metre area (Figure 14). Fifteen lithic items were determined to be artefactual, four lithic items of quartz vein material were found to be non-artefactual.

Location data was updated for CE-11-OS (WCP285) during the current survey from GDA 768402.6421736 (previous recording) to GDA 768427.6421750 (new recording).

The site consists of fifteen artefacts, including cores, retouched and unretouched flakes and a flaked piece, of quartz vein, chert and fine grained siliceous material (Table 1) located on a flat gradient in the valley floor (Figure 13).

The site is located on an exposure adjacent to the existing rail line and powerline easement. Ground surface disturbance consisted of previous clearing, farming and stock animal activity and rail, powerline and access track construction. The exposure incidence was 60% with 70% visibility within exposures.

CE-11-OS is located in an area designated for subsurface testing in the ACHMP.



Figure 11 CE-11-OS facing east



CE-09-OS (WCP283)

GDA (Zone 55) 768454.6421886

and

Collection Location 57 (CL57)

GDA (Zone 55) 768457.6421852

CE-09-OS (WCP283) was recorded as an artefact scatter of more than 27 artefacts in a dam exposure.

During this investigation one lithic item was collected near the recorded location of CE-09-OS in the dam exposure. This lithic item of quartz vein material was determined to be non-artefactual (Table 1). This item has been given a collection location number (Figures 14 and 15).

The area of recorded location CE-09-OS was surveyed during the current field program and no artefacts were located, therefore, site CE-09-OS could not be re-found.



Figure 12 CL57 facing east

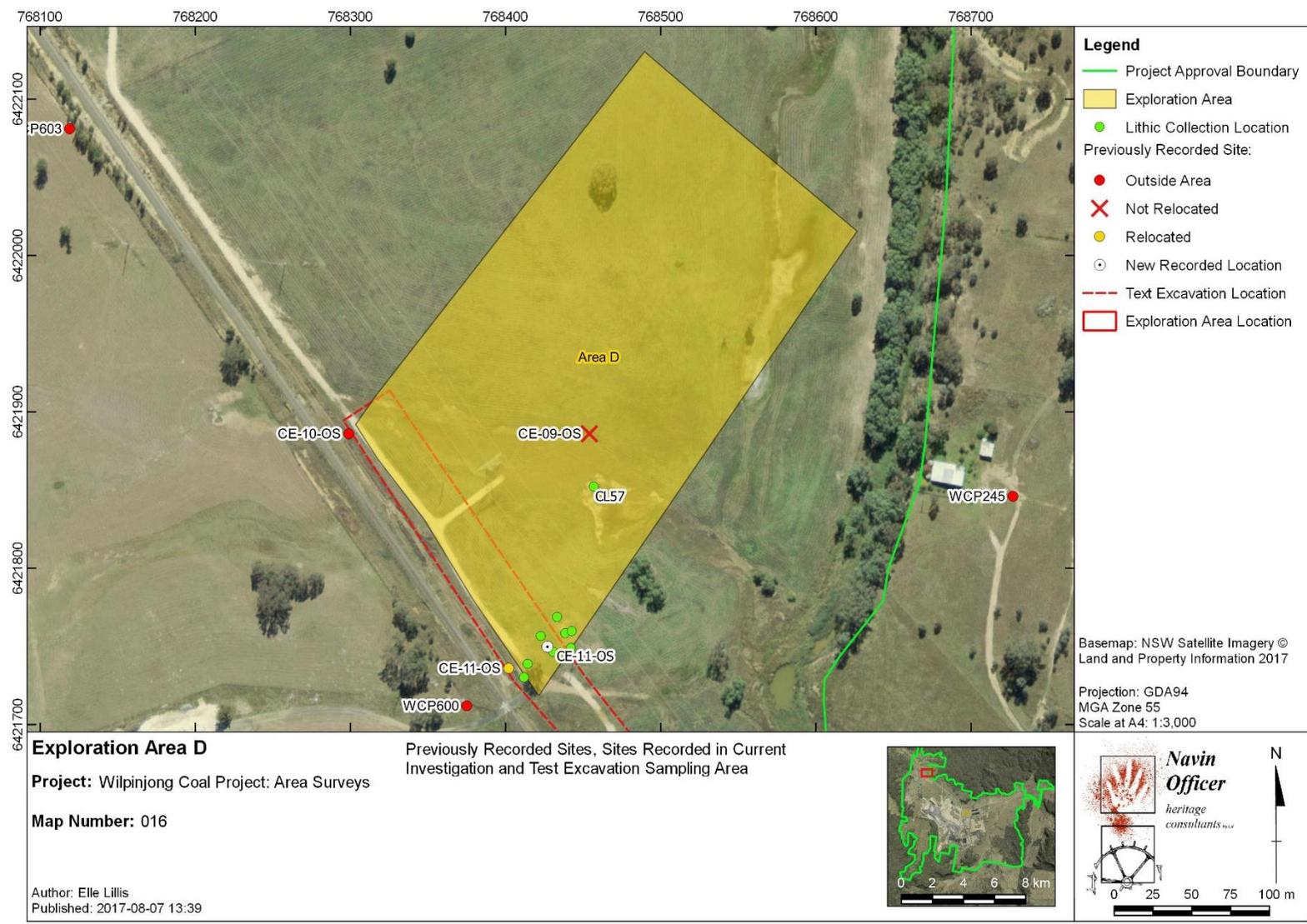


Figure 13 Previously recorded sites, sites recorded in the current investigation and test excavation sampling area in Exploration Area D



AREA E

Area E shown in yellow in Figure 14 had clearance salvage and was surveyed as part of this exploration clearance work program on 26th July 2017.

Clearance Survey Results

Summary

There are no previously lodged site recordings in Area E.

One new site (WCP691) was recorded in Area E.

Area E is partly located in an area recommended for subsurface testing in the ACHMP (Figure 16).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an isolated find which was subsequently collected. The site has been designated WCP691

WCP691

GDA (Zone 55):767955.6422515

WCP691 is an isolated find and consists of one retouched flake of quartz vein material (Table 1) located on a slope with a moderate gradient and north aspect adjacent to a revegetation area (Figure 15).

Ground surface disturbance consisted of farming and animal activity. The exposure incidence was 40% with 70% visibility within exposures. There is low to moderate potential for subsurface material.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low, the likelihood of intact deposits is low.



Figure 15 WCP691 facing north

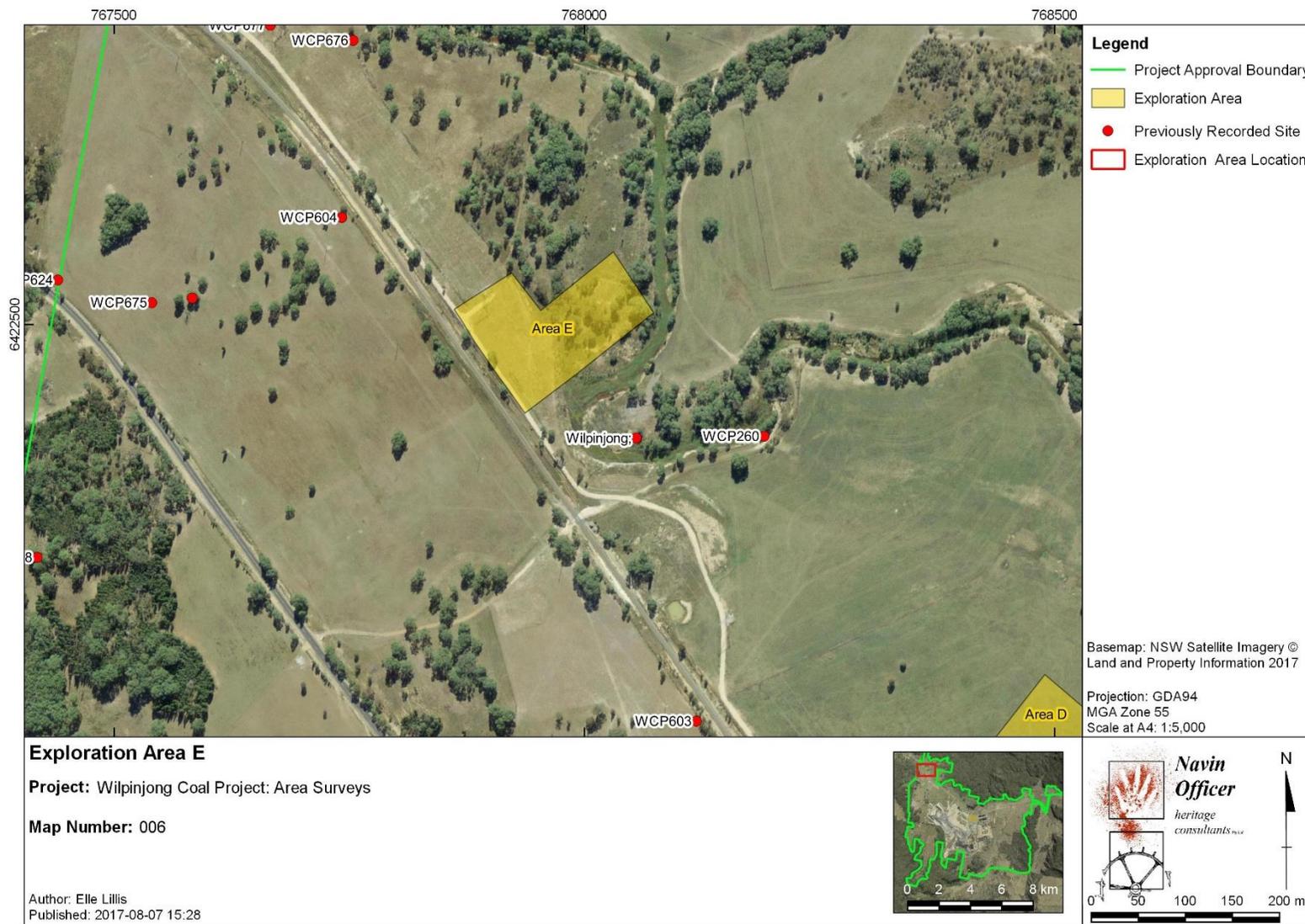


Figure 14 Location of Exploration Area E

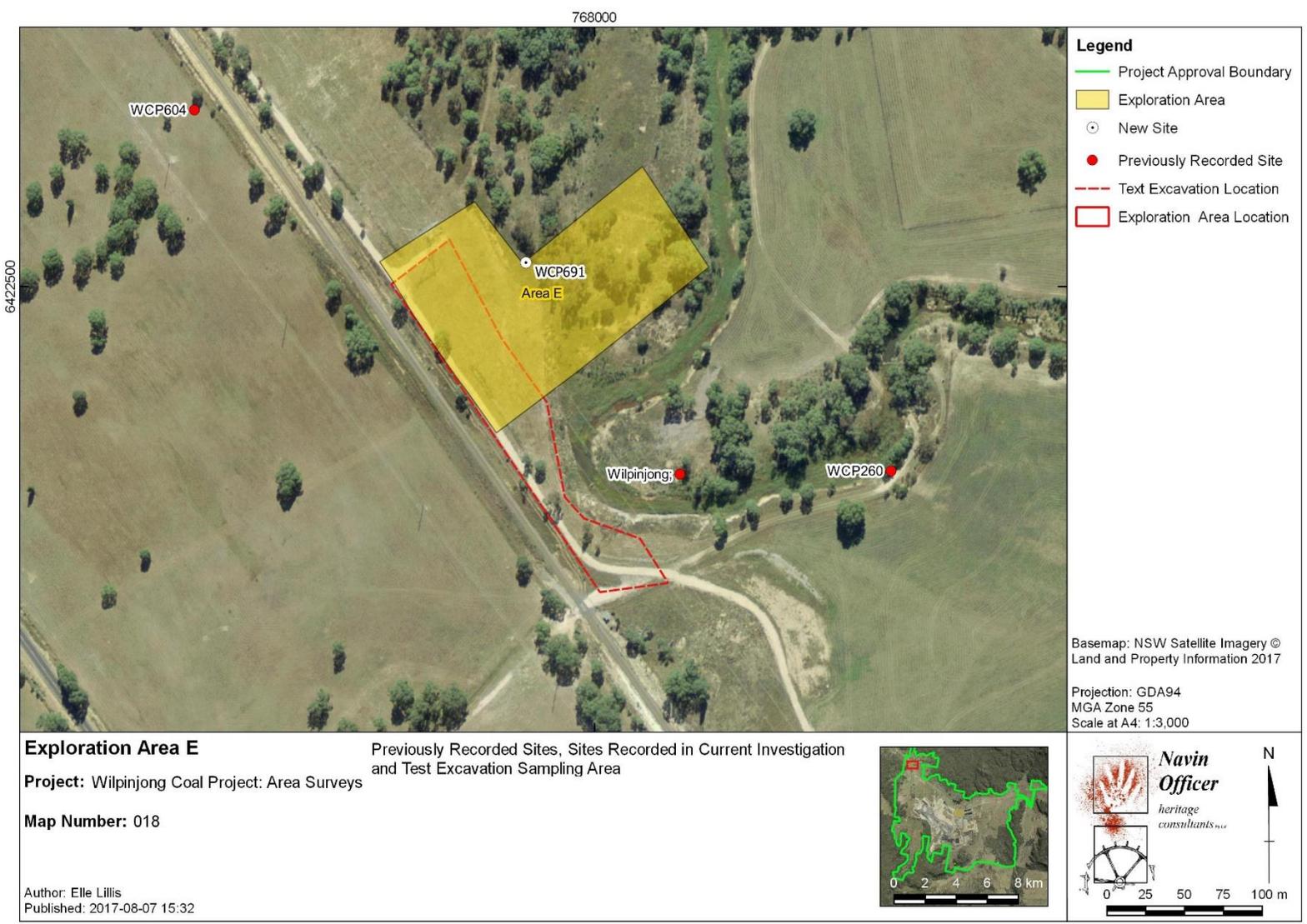


Figure 16 Previously recorded sites, sites recorded in the current investigation and test excavation sampling area in Exploration Area E



AREA F

Area F shown in yellow in Figure 17 had clearance salvage and was surveyed as part of this clearance work program on 26th July 2017.

Clearance Survey Results

Summary

Three previously lodged site recordings occur in Area F:

WCP530 – Artefact Scatter (South East Archaeology 2015)

WCP525 – Open artefact site (South East Archaeology 2015)

WCP533 – Open artefact site (South East Archaeology 2015)

All sites were looked for during the current investigation.

Two sites (WCP525, and WCP530) were relocated and re-assessed.

One site (WCP533) could not be relocated during the current survey program.

One new site (WCP695) was recorded in Area F.

Area F is partly located in an area recommended for subsurface testing in the ACHMP (Figure 21).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

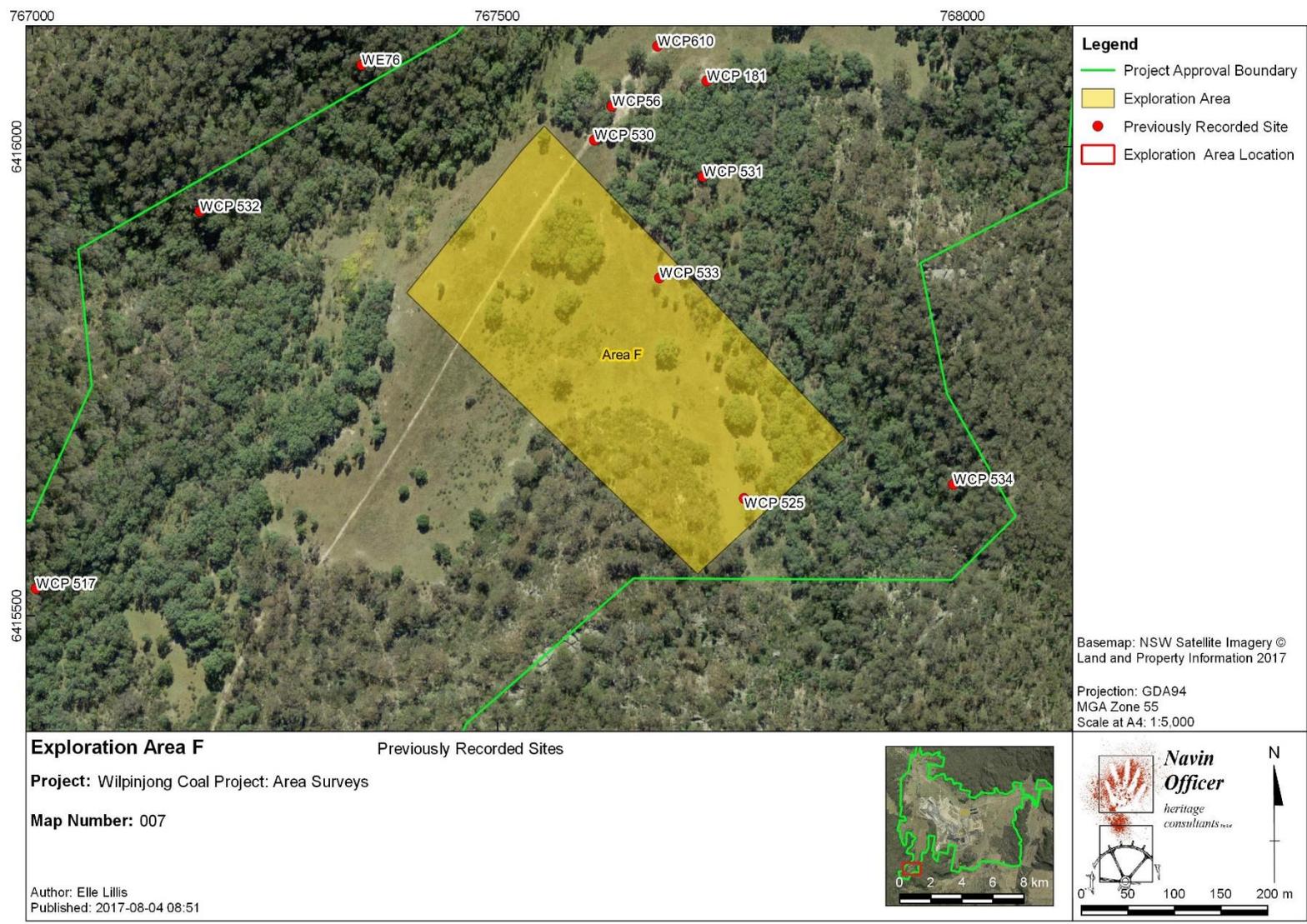


Figure 17 Previously recorded sites in Exploration Area F



Previously Recorded Sites

WCP525

GDA (Zone 55) 767765.6415625

WCP525 was originally recorded as an isolated artefact. During the current investigation nineteen lithic items were collected in a 22 x 37 metre area (Figure 21). Sixteen lithic items were found to be artefactual, three lithic items of quartz vein material were found to be non-artefactual. It was determined that this site is an artefact scatter with a potential archaeological deposit.

The site consists of sixteen artefacts including fifteen unretouched flakes and one retouched flake of quartz vein, chert, silcrete and fine grained siliceous material located on a bench on a slope with a moderate gradient and southerly aspect (Figure 18).

Ground surface disturbance consisted of water wash erosion, ant activity and farming activities. Exposure incidence was 40% with 50% visibility within exposures. There is moderate to high potential for subsurface material and moderate potential for this material to be undisturbed.

The assessment of moderate to high potential for subsurface material is based on the landform representing a suitable location for potential archaeological deposit due to the proximity to a water source and the elevation above this source, in addition to the evidence of artefacts both on the bench surface as well as the eroding from the top of the side of the slope, which is sloping towards the possible water source.

Pre-construction management of subsurface archaeological material is required for this site as the archaeological potential is assessed as moderate to high with the likelihood of intact deposits is moderate.



Figure 18 WCP525 facing south



WCP530

GDA (Zone 55) 767604.6416007

WCP530 is an artefact scatter. Thirty-one lithic items were collected in a 190 x 15 metre area (Figure 21). Twenty-one lithic items were determined to be artefactual, ten lithic items of quartz vein material were found to be non-artefactual.

This site consists of twenty-one artefacts including cores, retouched and unretouched flakes and flaked pieces of quartz vein, chert and fine grained siliceous material (Table 1) located on a flat gradient in the valley floor.

The site is located between a vehicle track and drain (Figure 19). Ground surface disturbance consisted of drain excavation, vehicle activity farming and animal activity. The exposure incidence was 80% with 95% visibility within exposures.

During the survey Christine Maynard from Mudgee Local Aboriginal Land Council indicated that she believed this location was an important camp site.

WCP530 is located in an area recommended for subsurface testing in the ACHMP.



Figure 19 WCP530 facing north



Sites Recorded in the Current Assessment

One new site was found during the current assessment. This site was an isolated find which was subsequently collected. This site has been designated WCP695.

WCP695

GDA (Zone 55): 767699.6415851

WCP695 is an isolated find and consists of one unretouched flake of quartz vein material (Table 1) located on a flat in the valley floor in a previously cleared area (Figure 20).

Ground surface disturbance consisted of sheet erosion, farming and animal activity. The exposure incidence was 30% with 40% visibility in exposures. There is low to moderate potential for subsurface material.

Pre-construction management of subsurface archaeological material is not required for this site as the archaeological potential is assessed to be low, the likelihood of deposits is extremely low.



Figure 20 WCP695 facing north

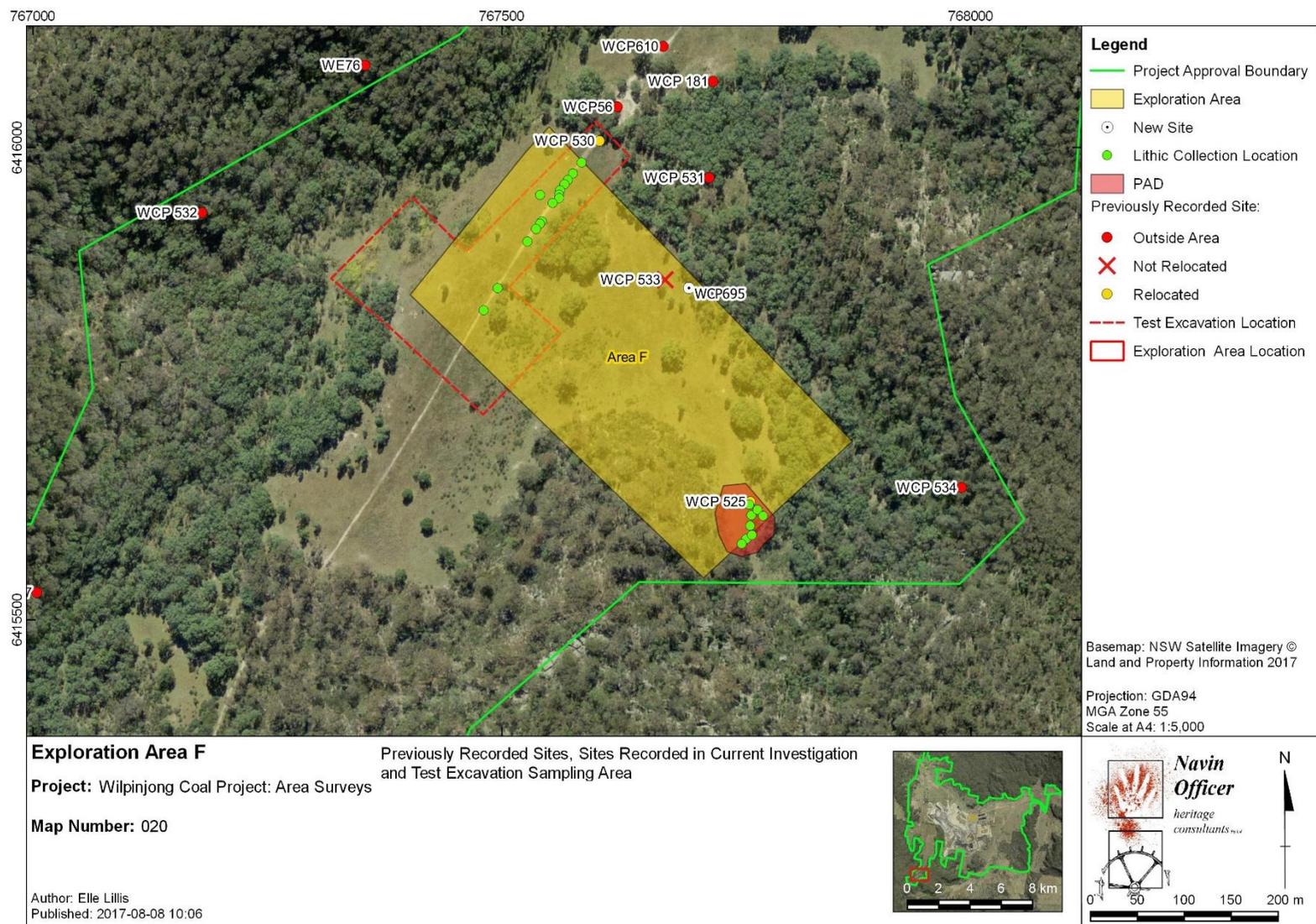


Figure 21 Previously recorded sites, sites recorded in the current investigation and test excavation sampling area in Exploration Area F



AREA I

Area I shown in yellow in Figure 22 had clearance salvage and was surveyed as part of this clearance work program on 25th July 2017.

Clearance Survey Results

Summary

Six previously lodged site recordings occur in Area I:

WCP147 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP148 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP229 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP230 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP538 – Open Artefact Site (South East Archaeology 2015)

WCP545 – Open Artefact Site (South East Archaeology 2015)

One Previously lodged site recording occurs within twenty metres of Area I in a previously cleared area:

WCP546 – Artefact Scatter (South East Archaeology 2015)

All sites were looked for during the current investigation.

Salvage was attempted at site WCP546 during a previous clearance survey (NOHC 2016) but the site was not able to be relocated.

Seven sites (WCP147, WCP148, WCP229, WCP230, WCP538, WCP545, and WCP546) were relocated and re-assessed during the current survey.

No new sites were recorded in Area I (Figure 30).

All lithic items collected during the cultural heritage clearance work survey are described in Table 1.

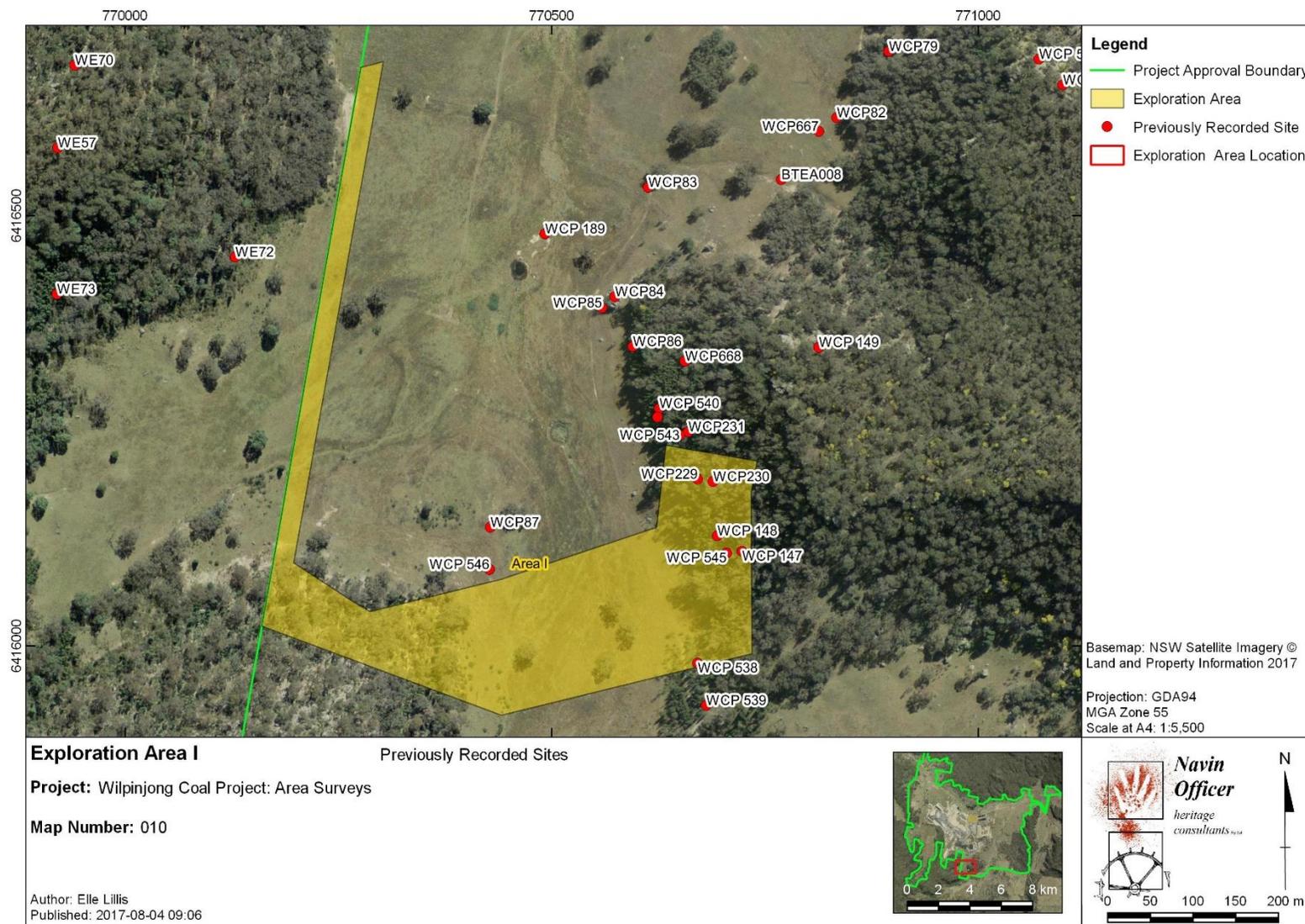


Figure 22 Previously recorded sites in Exploration Area I



Previously Recorded Sites

WCP147

GDA (Zone 55) 770723.6416110

WCP147 rock shelter with a potential archaeological deposit and surface artefacts was relocated during this assessment. (Figure 23).

No artefacts were located in association with this rock shelter.

Christine Maynard from Mudgee Local Aboriginal Land Council noted the aspect of WCP147 was good for visibility into the valley and indicated that she believed the aspect of the site and its association with the artefact scatter (WCP545) are significant.



Figure 23 WCP147 facing south

WCP148

GDA (Zone 55) 770694.6416128

WCP148 rock shelter with a potential archaeological deposit was relocated during this assessment (Figure 24).



No artefacts were located in association with this rock shelter



Figure 24 WCP148 facing east

WCP229

GDA (Zone 55) 770671.6416194

WCP229 rock shelter with a potential archaeological deposit was relocated during this assessment (Figure 25).



No artefacts were located in association with this rock shelter



Figure 25 WCP229 facing south east

WCP230

GDA (Zone 55) 770689.6416191

WCP230 rock shelter with a potential archaeological deposit was relocated during this assessment (Figure 26).

No artefacts were located in association with this rock shelter





Figure 26 WCP230 facing east

WCP538

GDA (Zone 55) 770715.6415999

WCP538 was originally recorded as an isolated artefact. During the current investigation twenty-four lithic items were collected in a 95 x 55 metre area (Figure 30). Nine lithic items were determined to be artefactual and fifteen lithic items of silcrete and quartz vein material were determined to be non-artefactual. It was determined that this site is an artefact scatter of 36 x 40 metre.

Location data was updated for WCP538 during the current survey from GDA 770671.6415980 (previous recording) to GDA 770715.6415999 (new recording).

The site consists of nine artefacts including cores, unretouched flakes and a retouched flake of chert and quartz vein material (Table 1) located in open forest on a moderate gradient with a westerly aspect (Figure 27).

Ground surface disturbance consisted of animal activity and erosion. The exposure incidence was 10% with 40% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.

Pre-construction management of subsurface archaeological material is not required for this sites as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low.



Figure 27 WCP538 facing east



WCP545

GDA (Zone 55) 770705.6416108

WCP545 is listed as an artefact scatter of six artefacts. During the current investigation twenty-two lithic items were collected in a 10 x 20 metre area (Figure 30). Sixteen lithic items were determined to be artefactual, six lithic items of quartz vein material were determined to be non-artefactual.

This site consists of sixteen unretouched flakes of quartz vein and chert material (Table 1) located in open forest on a moderate slope with a westerly aspect.

Ground surface disturbance consisted of sheet erosion, and animal activity. The exposure incidence was 20% with 70% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be disturbed.

Pre-construction management of subsurface material is not required for this site as the archaeological potential is assessed to be low to moderate, the likelihood of intact deposits is extremely low.



Figure 28 WCP545 facing east

WCP546

GDA (Zone 55) 770427.6416089

WCP546 artefact scatter occurs within twenty metres of Area I in a previously cleared area. Salvage was attempted at site WCP546 during a previous clearance survey (NOHC 2016) but the site was not able to be relocated.

During the current investigation one silcrete unretouched flake (Table 1) was collected at WCP546.



Figure 29 WCP546 facing north

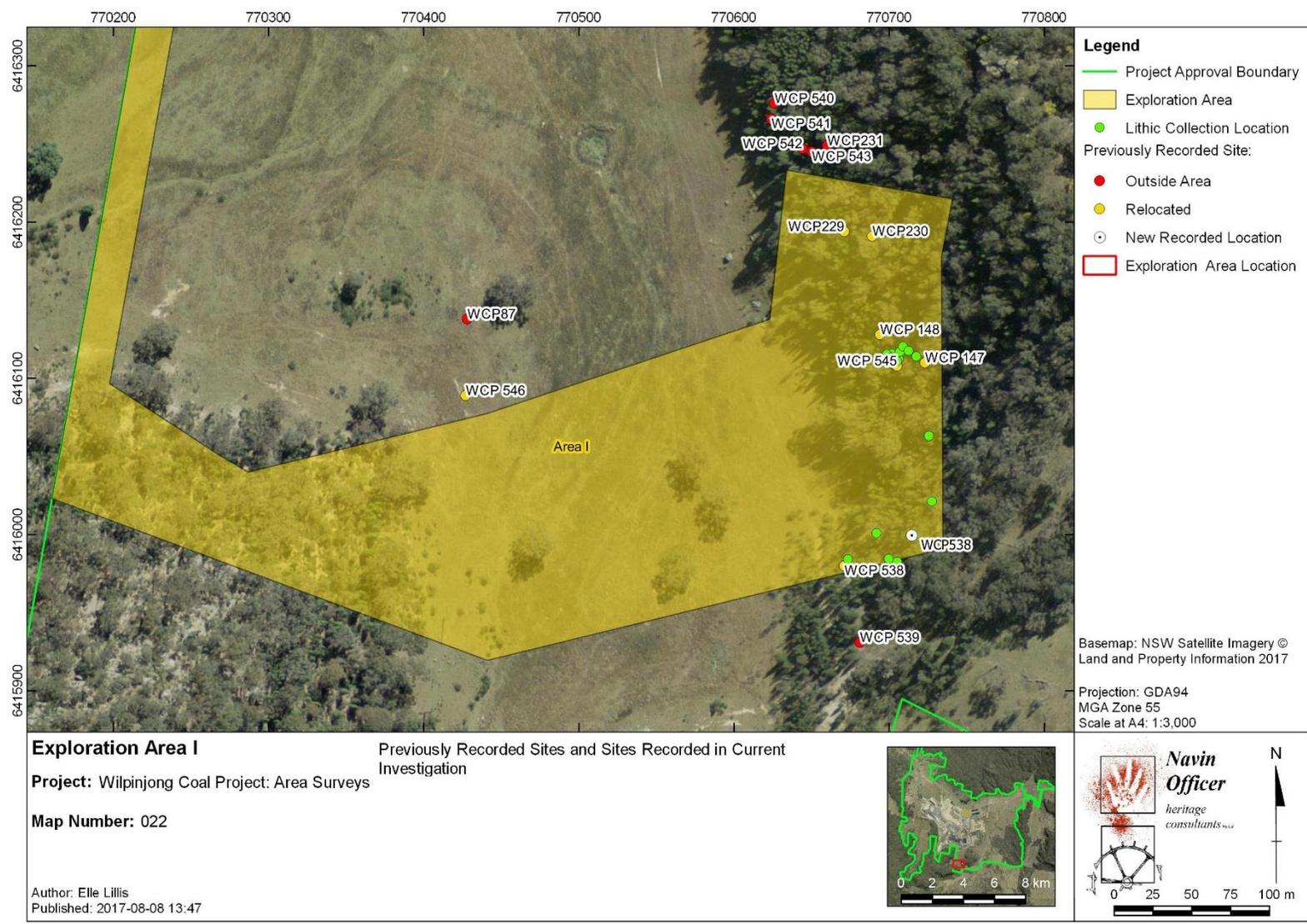


Figure 30 Previously recorded sites and sites recorded in the current investigation in Exploration Area I



DUE DILIGENCE SURVEY RESULTS

Summary

Area G and Area H shown in yellow in Figures 31 and 32 were surveyed as part of the exploration clearance work program on 27th July 2017. The areas are located in Slate Gully within the Wilpinjong Coal Mine extension areas and have been previously surveyed by South East Archaeology (2015). These locations are not within the project approval area; therefore a due diligence assessment was conducted. In accordance with the *National Parks and Wildlife Act 1974* (NPW Act) no artefacts were collected from these areas as part of this assessment.

Area G and Area H area characterized by low spur lines and drainage lines. Soils are typically derived from bedrock sandstones and conglomerates. Vegetation within the proposed area consists of open (agricultural) grasslands, with pockets of regenerating and open forest.

Ground surface disturbance evident across the area includes forest clearance, agricultural ploughing and pasture improvement, erosion scalds from stock animals and surface water erosion, vehicle track construction and powerline easement.

No previously recorded sites occur in Area G due diligence survey area.

Two previously unrecorded sites were identified in Area G during the current assessment:

WCP692 – Isolated Find with Potential Archaeological Deposit

WCP693 – Potential Archaeological Deposit

One previously recorded site occurs in Area H due diligence survey area:

WCP569 – Artefact Scatter (South East Archaeology 2015)

One previously unrecorded site in Area H was identified during the current assessment:

WCP694 – Isolated Find

The locations of recorded sites are shown in Figures 36 and 38

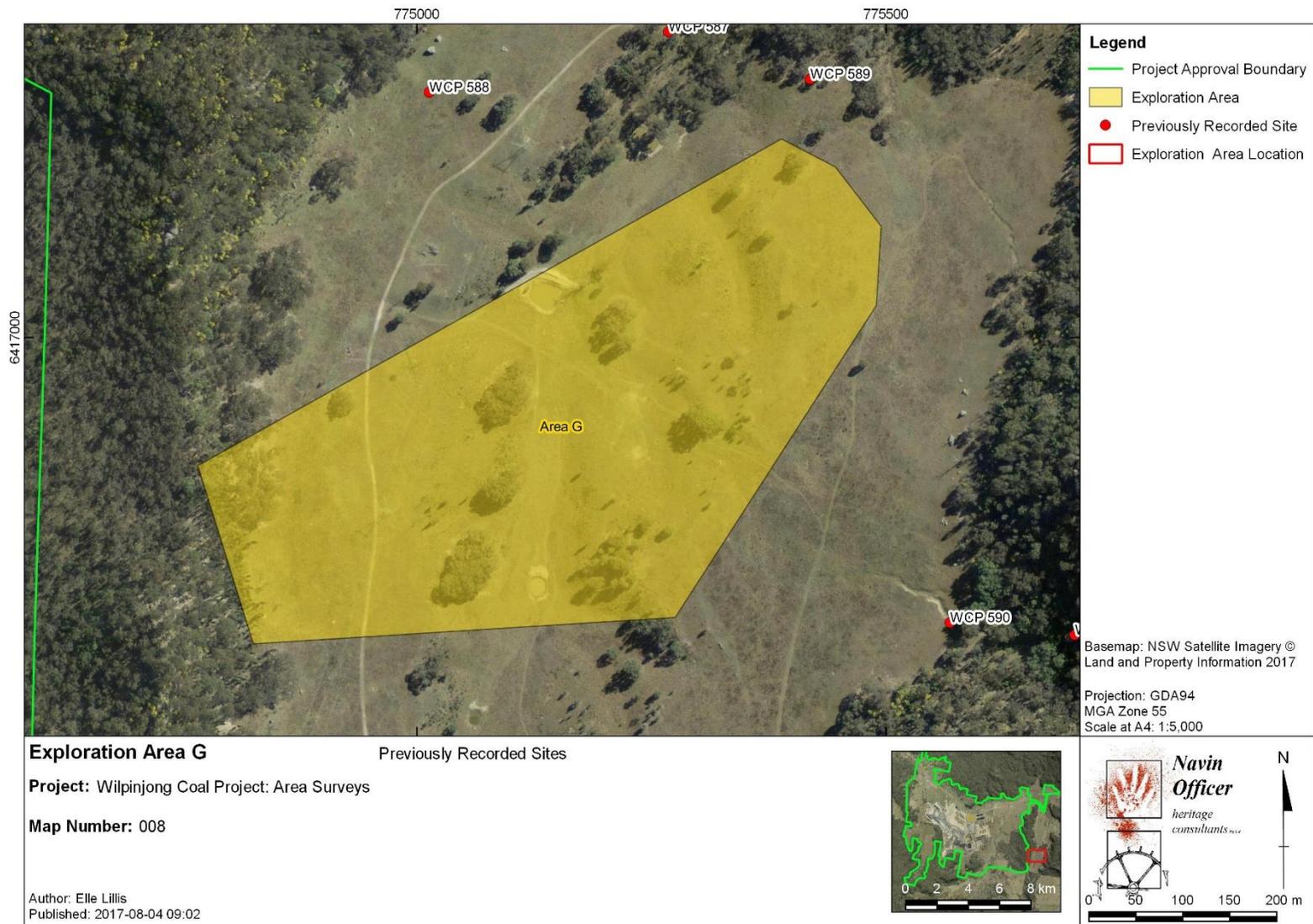


Figure 31 Location of Exploration Area G

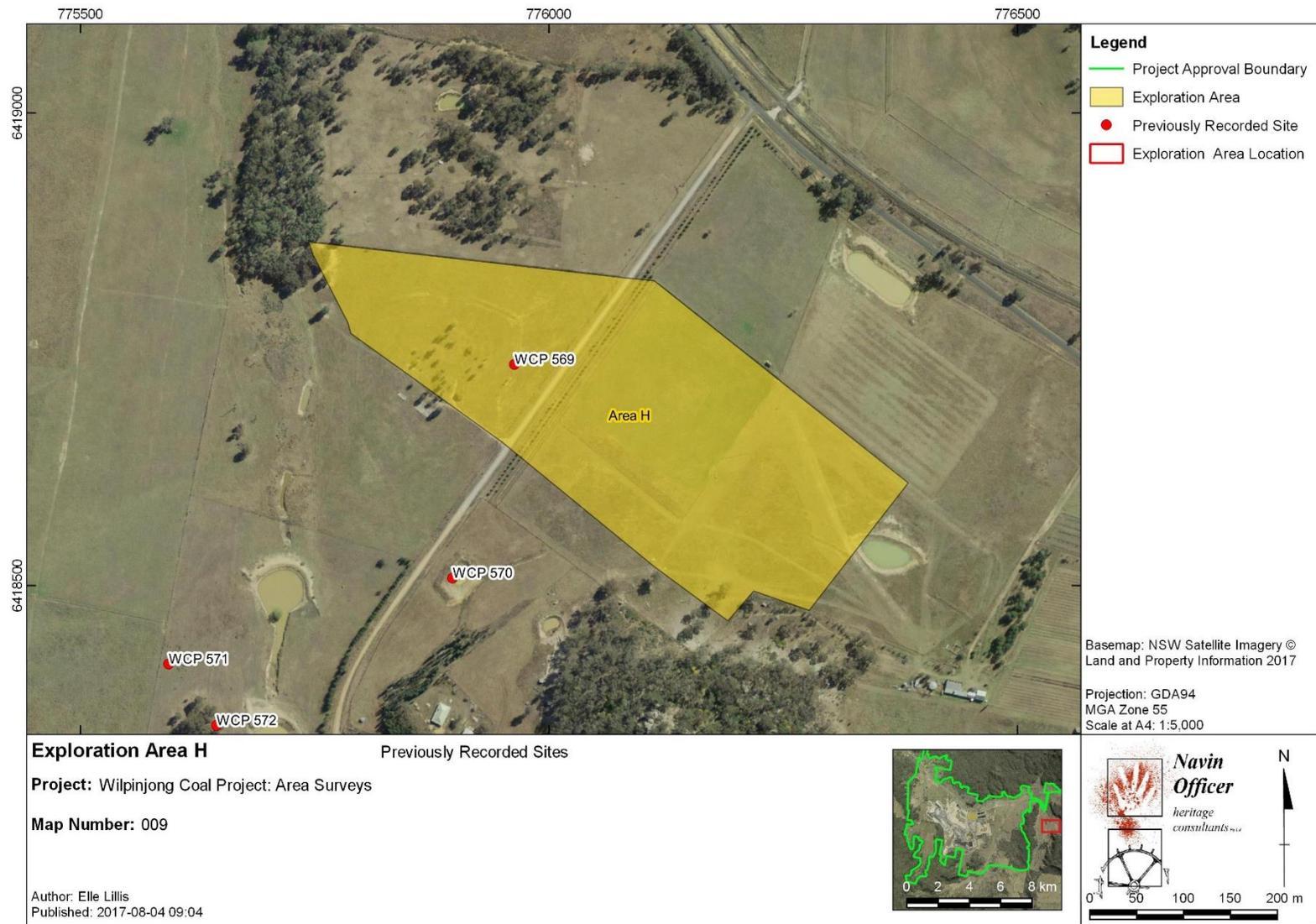


Figure 32 Previously recorded sites in Exploration Area H



AREA G

Area G shown in yellow in Figure 31 was surveyed as part of this due diligence program on July 27th, 2017.

Due Diligence Survey Results

Summary

No previously lodged site recordings occur in Area G (Figure 31).

Two new Aboriginal sites (WCP692 and WCP693) were recorded in Area G (Figure 36).

Sites Recorded in the Current Assessment

WCP692

GDA (Zone 55):775328.6416792

WCP692 is an isolated artefact and a potential archaeological deposit. One lithic item was recorded and not collected due to being outside the project approval boundary.

The site consisted of one unretouched flake 20 x 10 x 3 millimetre of quartz vein material (Figure 33) located in an erosion scald in a cleared area on a bench on a slope with a low gradient and an easterly aspect. The site is located on flat terrain in a locally elevated area of Slate Gully in proximity to the present-day creek line. The site is elevated above the valley floors to the east and west of the site, which might provide some protection from erosion (Figure 34).

Ground surface disturbance consisted of stock animal activity and other farming activities. The sediments at the ground surface are sand-rich, with small gravels. The ground surface around this site is covered by thick grass and ground-cover vegetation. Exposure incidence was 20% with 40% visibility within exposures. There is moderate to high potential for subsurface material and moderate potential for this material to be undisturbed.

The assessment of moderate to high potential for subsurface material is based on the landform and location. Due to the flat nature of the terrain, its local elevation and proximity to the present-day creek line, and the substantially reduced visibility created by vegetation cover, the area is identified as PAD with a moderate to high potential for additional artefacts to be present in subsurface sediments.



Figure 33 WCP692 artefact



Figure 34 WCP692 facing south west



WCP693

GDA (Zone 55):775422.6417056

WCP693 is a potential archaeological deposit.

The area was identified as a PAD based on landform and location and is 345 x 105 metres in size. The site is located on flat terrain in a locally elevated area of Slate Gully in proximity to the present-day creek line. The site is elevated above the valley floors to the east and west of the site, which might provide some protection from erosion (Figure 36).

Ground surface disturbance consisted of stock animal activity and other farming activities. The sediments at the ground surface are sand-rich, with small gravels. The ground surface around this site is covered by thick grass and other ground-cover vegetation, and surface visibility is determined to be 20%.

Due to the flat nature of the terrain, its slight elevation and proximity to the present-day creek line, and the substantially reduced visibility created by vegetation cover, the area is identified as PAD. There is a moderate to high potential for additional artefacts to be present in subsurface sediments.



Figure 35 looking towards WCP693 facing north

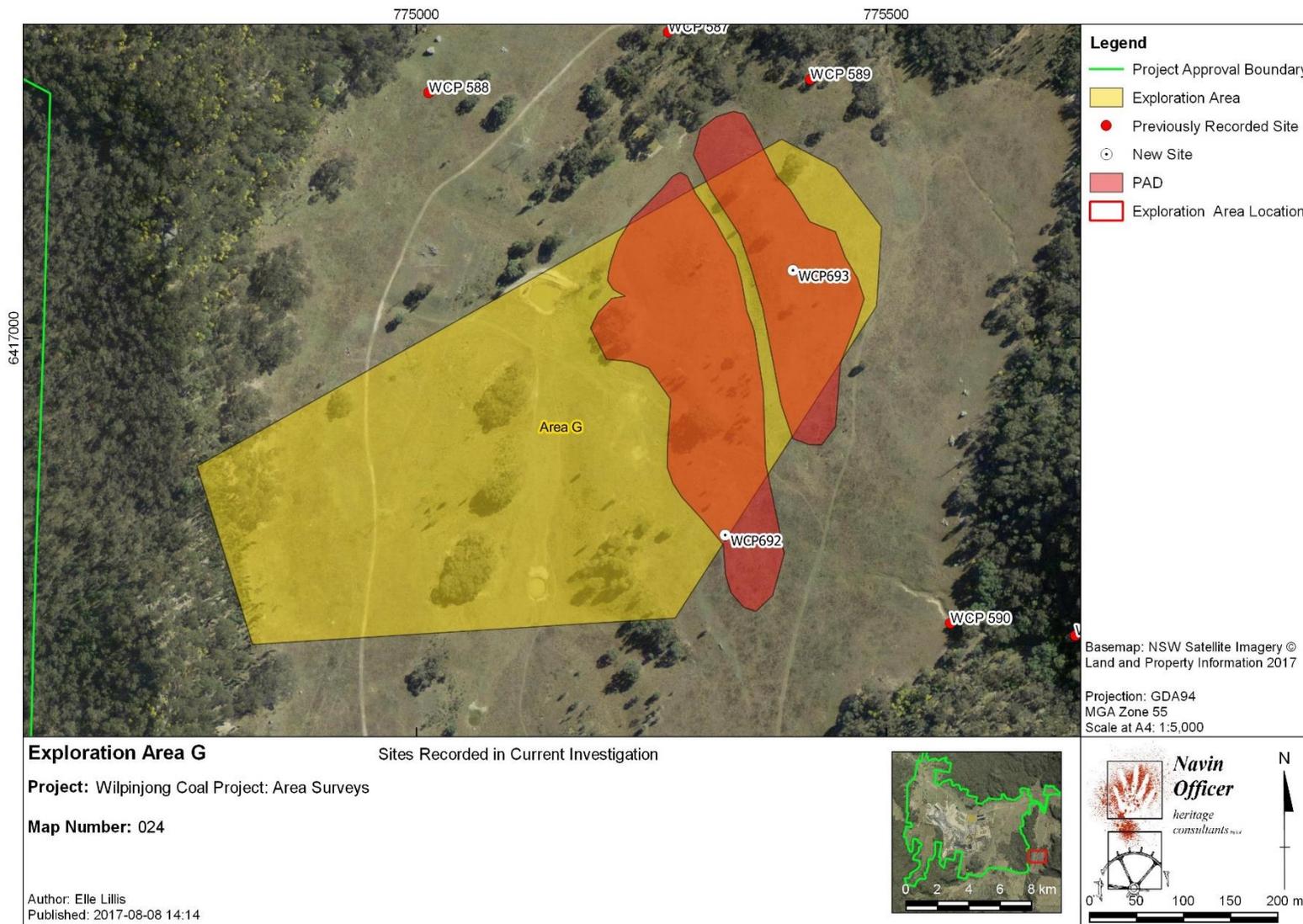


Figure 36 Previously recorded sites and sites recorded in the current investigation in Exploration Area G



AREA H

Area H shown in yellow in Figure 32 was surveyed as part of this due diligence program on 27th July 2017.

Due Diligence Survey Results

Summary

One previously lodged site recording occurs in Area H:

WCP569 – Isolated find (South East Archaeology 2015)

WCP569 was not relocated in the current survey program.

One new site (WCP694) was recorded in Area H (Figure 38).

Sites Recorded in the Current Assessment

WCP WCP694

GDA (Zone 55): 775949.6418665

WCP694 is an isolated artefact. One lithic item was recorded and not collected due to being outside the project approval boundary.

The site consists of one broken ground sandstone artefact 120 x 90 x 60 millimetres (Figure 37) located in an erosion scald in a cleared area in the valley flat.

Ground surface disturbance included stock damage and other farming activity. The exposure incidence was 5% with 40% visibility within exposures. There is low to moderate potential for subsurface material and low potential for this material to be undisturbed.



Figure 37 WCP694 ground artefact

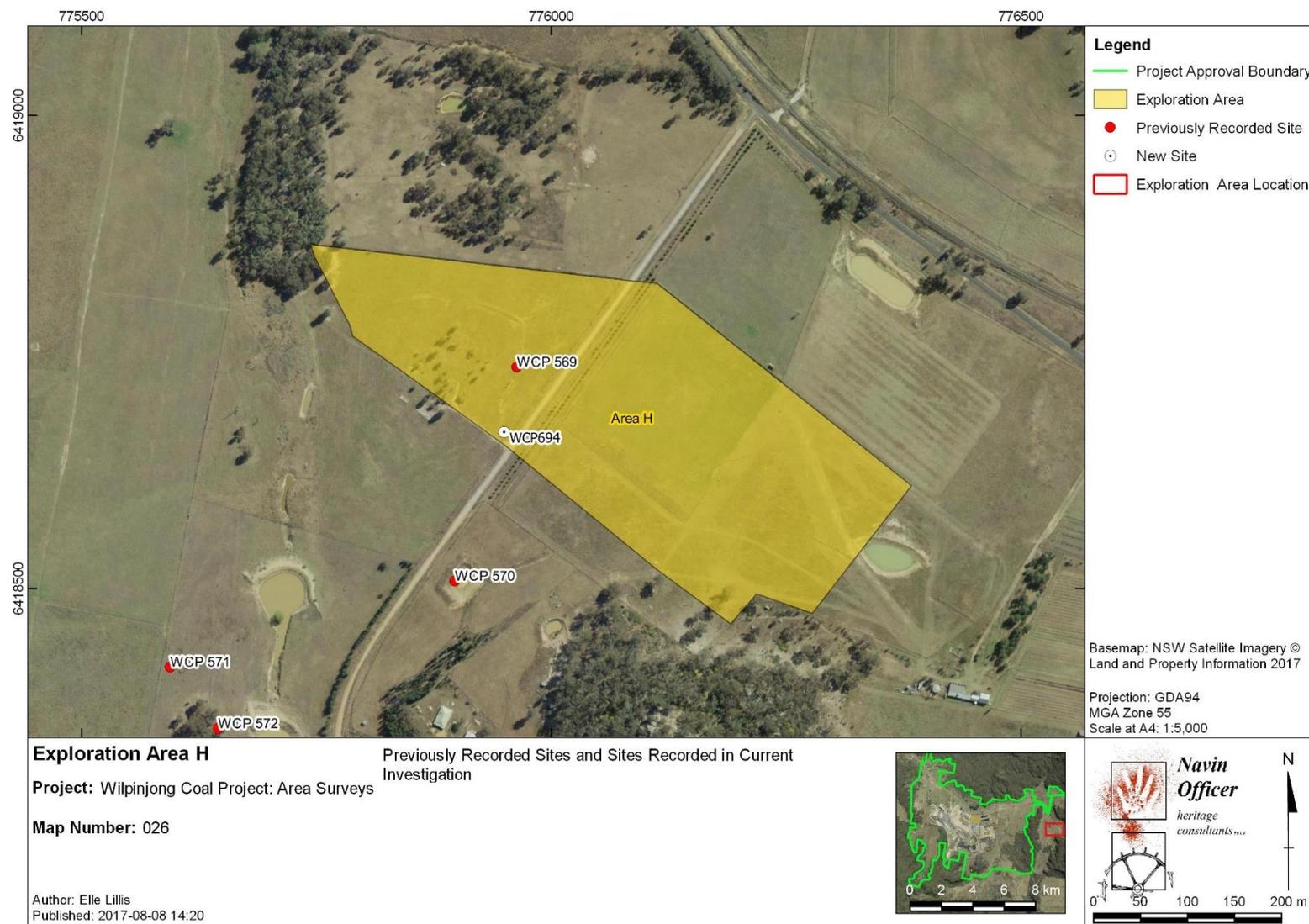


Figure 38 Previously recorded sites and sites recorded in the current investigation in Exploration Area H..



LITHIC DATA

Table 1: Lithic Item descriptions with site names and locations

ID	Area name	Site	Find #	GDA Easting	Northing	Unit	Type	Weight	Material	Completeness	Initiation type
216436	F	WCP695	CL39	767699	6415851	Surface	Unretouched flake	2.5	Quartz, vein	Medial fragment	None
216437	I	WCP538	CL10	770726	6416063	Surface	Non-artefactual	4.08	Quartz, vein		
216438	E	WCP691	CL58	767956	6422515	Surface	Unretouched flake	3.44	Quartz, vein	Distal fragment	None
216439	B	WCP690	CL22	767903	6416287	Surface	Unretouched flake	0.14	Quartz, vein	Distal fragment	None
216440	B	WCP690	CL22	767903	6416287	Surface	Non-artefactual	0.29	Quartz, vein		
216441	D		CL57	768457	6421852	Surface	Non-artefactual	1.48	Quartz, vein		
216442	D	WCP285	CL54	768431	6421747	Surface	Core	484.37	FGS	Complete	
216443	D	WCP285	CL55	768433	6421769	Surface	Non-artefactual	0.44	Quartz, vein		
216444	D	WCP285	CL55	768433	6421769	Surface	Unretouched flake	0.39	Quartz, vein	Distal fragment	None
216445	D	WCP285	CL56	768423	6421757	Surface	Unretouched flake	0.65	Quartz, vein	Proximal fragment	Hertzian
216446	D	WCP285	CL49	768443	6421760	Surface	Non-artefactual	7.98	Quartz, vein		
216447	D	WCP285	CL49	768443	6421760	Surface	Core	7.61	Quartz, vein	Complete	None
216448	D	WCP285	CL49	768443	6421760	Surface	Non-artefactual	4.29	Quartz, vein		
216449	D	WCP285	CL49	768443	6421760	Surface	Retouched flake	1.59	Quartz, vein	Distal fragment	None



216450	D	WCP285	CL49	768443	6421760	Surface	Unretouched flake	4.77	Quartz, vein	Distal fragment	None
216451	D	WCP285	CL50	768439	6421758	Surface	Non-artefactual	3.31	Quartz, vein		
216452	D	WCP285	CL51	768442	6421749	Surface	Unretouched flake	3.43	Quartzite	Margin missing	Hertzian
216453	D	WCP285	CL51	768442	6421749	Surface	Retouched flake	5.08	Quartz, vein	Distal fragment	None
216454	D	WCP285	CL51	768442	6421749	Surface	Unretouched flake	28.47	Quartz, vein	Medial fragment	Hertzian
216455	D	WCP285	CL52	768412	6421730	Surface	Unretouched flake	57.48	Chert	Complete	Hertzian
216456	D	WCP285	CL52	768412	6421730	Surface	Unretouched flake	10.56	Quartz, vein	LCS left	Hertzian
216457	D	WCP285	CL52	768412	6421730	Surface	Unretouched flake	8.06	Chert	Proximal fragment	Hertzian
216458	D	WCP285	CL52	768412	6421730	Surface	Flaked piece	2.74	Chert		
216459	D	WCP285	CL52	768412	6421730	Surface	Unretouched flake	0.28	Quartz, vein	Distal fragment	None
216460	D	WCP285	CL52	768412	6421730	Surface	Non-artefactual	0.38	Quartz, vein		
216461	D	WCP285	CL53	768414	6421739	Surface	Unretouched flake	7.12	Chert	Proximal fragment	Hertzian
216462	F	WCP525	CL41	767767	6415590	Surface	Non-artefactual	20.65	Quartz, vein		
216463	F	WCP525	CL41	767767	6415590	Surface	Unretouched flake	1.42	Quartz, vein	Complete	Hertzian
216464	F	WCP525	CL41	767767	6415590	Surface	Unretouched flake	1.42	Quartz, vein	Complete	Hertzian
216465	F	WCP525	CL45	767773	6415617	Surface	Non-artefactual	18.2	Quartz, vein		
216466	F	WCP525	CL45	767773	6415617	Surface	Unretouched flake	39.69	FGS	Distal fragment	None
216467	F	WCP525	CL44	767766	6415611	Surface	Unretouched flake	4.91	Silcrete	Proximal fragment	Hertzian



216468	F	WCP525	CL44	767766	6415611	Surface	Retouched flake	42.48	Chert	Complete	Hertzian
216469	F	WCP525	CL43	767756	6415580	Surface	Unretouched flake	6.89	Chert	Complete	Hertzian
216470	F	WCP525	CL43	767756	6415580	Surface	Unretouched flake	2.28	Quartz, vein	Distal fragment	None
216471	F	WCP525	CL43	767756	6415580	Surface	Unretouched flake	0.79	Quartz, vein	Distal fragment	None
216472	F	WCP525	CL43	767756	6415580	Surface	Unretouched flake	0.94	Quartz, vein	Complete	Hertzian
216473	F	WCP525	CL43	767756	6415580	Surface	Unretouched flake	0.4	Quartz, vein	Complete	Hertzian
216474	F	WCP525	CL43	767756	6415580	Surface	Unretouched flake	0.2	Quartz, vein	Complete	Hertzian
216475	F	WCP525	CL40	767765	6415600	Surface	Unretouched flake	12.78	Quartz, vein	Complete	Hertzian
216476	F	WCP525	CL42	767760	6415586	Surface	Non-artefactual	0.92	Quartz, vein		
216477	F	WCP525	CL42	767760	6415586	Surface	Unretouched flake	0.56	Quartz, vein	Complete	Hertzian
216478	F	WCP525	CL42	767760	6415586	Surface	Unretouched flake	0.22	Quartz, vein	Medial fragment	Hertzian
216479	F	WCP525	CL47	767764	6415622	Surface	Unretouched flake	4	Quartz, vein	Complete	Hertzian
216480	F	WCP525	CL46	767778	6415610	Surface	Unretouched flake	4.81	Quartz, vein	Distal fragment	None
216481	F	WCP530	CL27	767561	6415950	Surface	Unretouched flake	4.57	Quartz, vein	Complete	Wedging
216482	F	WCP530	CL27	767585	6415984	Surface	Core	6.72	FGS	Complete	
216483	F	WCP530	CL28	767585	6415984	Surface	Retouched flake	34.12	Chert	Complete	None
216484	F	WCP530	CL28	767576	6415973	Surface	Flaked piece	6.92	Quartz, vein	Complete	
216485	F	WCP530	CL29	767576	6415973	Surface	Unretouched flake	12.76	Chert	Complete	Hertzian
216486	F	WCP530	CL29	767576	6415973	Surface	Unretouched flake	4.95	Chert	Complete	Hertzian



216487	F	WCP530	CL29	767570	6415966	Surface	Non-artefactual	2.01	Quartz, vein		
216488	F	WCP530	CL29	767570	6415966	Surface	Non-artefactual	0.92	Quartz, vein		
216489	F	WCP530	CL23	767567	6415961	Surface	Unretouched flake	5.51	Quartz, vein	Complete	Hertzian
216490	F	WCP530	CL23	767561	6415947	Surface	Unretouched flake	3.08	Quartz, vein	LCS right	Hertzian
216491	F	WCP530	CL24	767561	6415947	Surface	Non-artefactual	6.41	Quartz, vein		
216492	F	WCP530	CL24	767561	6415947	Surface	Non-artefactual	1.84	Quartz, vein		
216493	F	WCP530	CL24	767561	6415947	Surface	Unretouched flake	3.55	Chert	Complete	Hertzian
216494	F	WCP530	CL25	767554	6415941	Surface	Non-artefactual	32.12	Quartz, vein		
216495	F	WCP530	CL25	767554	6415941	Surface	Non-artefactual	1.33	Quartz, vein		
216496	F	WCP530	CL26	767554	6415941	Surface	Unretouched flake	7.82	Chert	Complete	Bending
216497	F	WCP530	CL30	767554	6415941	Surface	Flaked piece	10.69	Chert	Complete	
216498	F	WCP530	CL30	767542	6415922	Surface	Non-artefactual	0.78	Quartz, vein		
216499	F	WCP530	CL30	767541	6415919	Surface	Non-artefactual	0.31	Quartz, vein		
216500	F	WCP530	CL30	767536	6415914	Surface	Non-artefactual	0.29	Quartz, vein		
216501	F	WCP530	CL31	767527	6415900	Surface	Unretouched flake	4.84	Quartz, vein	Proximal fragment	Hertzian
216502	F	WCP530	CL31	767495	6415851	Surface	Retouched flake	5.15	Chert	Distal fragment	None
216503	F	WCP530	CL31	767481	6415828	Surface	Unretouched flake	0.38	Quartz, vein	Proximal fragment	Hertzian
216504	F	WCP530	CL31	767541	6415950	Surface	Unretouched flake	0.17	Quartz, vein	Complete	Hertzian



216505	F	WCP530	CL32	767542	6415922	Surface	Core	6.06	Quartz, vein	Broken	
216506	F	WCP530	CL33	767541	6415919	Surface	Flaked piece	5.77	Quartz, vein		
216507	F	WCP530	CL34	767536	6415914	Surface	Non-artefactual	1.29	Quartz, vein		
216508	F	WCP530	CL35	767527	6415900	Surface	Unretouched flake	2.01	Quartz, vein	Margin missing	Hertzian
216509	F	WCP530	CL36	767495	6415851	Surface	Unretouched flake	19.7	Chert	Distal fragment	None
216510	F	WCP530	CL37	767481	6415828	Surface	Unretouched flake	2.69	Quartz, vein	Distal fragment	None
216511	F	WCP530	CL38	767541	6415950	Surface	Unretouched flake	0.56	Quartz, vein	Complete	Hertzian
216512	I	WCP546	CL20	770424	6416091	Surface	Unretouched flake	8.69	Silcrete	Complete	Hertzian
216513	I	WCP545	CL1	770702	6416116	Surface	Unretouched flake	2.17	Quartz, vein	Distal fragment	None
216514	I	WCP545	CL1	770702	6416116	Surface	Unretouched flake	1.52	Quartz, vein	Complete	Hertzian
216515	I	WCP545	CL1	770702	6416116	Surface	Unretouched flake	0.2	Quartz, vein	Complete	Hertzian
216516	I	WCP545	CL2	770698	6416115	Surface	Unretouched flake	1.89	Quartz, vein	LCS left	Hertzian
216517	I	WCP545	CL3	770701	6416113	Surface	Unretouched flake	0.57	Quartz, vein	Margin missing	Hertzian
216518	I	WCP545	CL4	770706	6416113	Surface	Non-artefactual	0.85	Quartz, vein		
216519	I	WCP545	CL5	770705	6416111	Surface	Unretouched flake	0.33	Quartz, vein	Complete	Hertzian
216520	I	WCP545	CL5	770705	6416111	Surface	Non-artefactual	0.45	Quartz, vein		
216521	I	WCP545	CL5	770705	6416111	Surface	Unretouched flake	5.87	Quartz, vein	Complete	Hertzian
216522	I	WCP545	CL6	770707	6416117	Surface	Non-artefactual	2.69	Quartz, vein		



216523	I	WCP545	CL6	770707	6416117	Surface	Unretouched flake	1.21	Quartz, vein	Medial fragment	None
216524	I	WCP545	CL6	770707	6416117	Surface	Unretouched flake	0.9	Quartz, vein	Proximal fragment	Hertzian
216525	I	WCP545	CL7	770709	6416120	Surface	Unretouched flake	1.31	Chert	Complete	Hertzian
216526	I	WCP545	CL7	770709	6416120	Surface	Non-artefactual	0.54	Quartz, vein		
216527	I	WCP545	CL8	770712	6416118	Surface	Non-artefactual	0.6	Quartz, vein		
216528	I	WCP545	CL8	770712	6416118	Surface	Unretouched flake	1.18	Quartz, vein	Margin missing	Hertzian
216529	I	WCP545	CL9	770717	6416114	Surface	Unretouched flake	19.78	Quartz, vein	Complete	Hertzian
216530	I	WCP545	CL9	770717	6416114	Surface	Unretouched flake	2.27	Chert	Complete	Hertzian
216531	I	WCP545	CL9	770717	6416114	Surface	Unretouched flake	1.78	Quartz, vein	Medial fragment	None
216532	I	WCP545	CL9	770717	6416114	Surface	Unretouched flake	0.75	Quartz, vein	Complete	Hertzian
216533	I	WCP545	CL9	770717	6416114	Surface	Unretouched flake	0.74	Quartz, vein	Medial fragment	None
216534	I	WCP545	CL9	770717	6416114	Surface	Non-artefactual	0.62	Quartz, vein		
216535	I	WCP538	CL13	770673	6415984	Surface	Non-artefactual	347.38	Silcrete		
216536	I	WCP538	CL19	770692	6416001	Surface	Non-artefactual	3.57	Quartz, vein		
216537	I	WCP538	CL19	770692	6416001	Surface	Unretouched flake	1.07	Quartz, vein	Distal fragment	None
216538	I	WCP538	CL12	770715	6415999	Surface	Unretouched flake	0.85	Chert	Medial fragment	None
216539	I	WCP538	CL11	770728	6416021	Surface	Unretouched flake	2.41	Quartz, vein	Complete	Hertzian
216540	I	WCP538	CL11	770728	6416021	Surface	Core	21.68	Quartz, vein	Complete	



216541	I	WCP538	CL14	770701	6415982	Surface	Non-artefactual	4.48	Quartz, vein		
216542	I	WCP538	CL14	770701	6415982	Surface	Non-artefactual	4.7	Quartz, vein		
216543	I	WCP538	CL14	770701	6415982	Surface	Non-artefactual	2.12	Quartz, vein		
216544	I	WCP538	CL15	770699	6415980	Surface	Unretouched flake	0.6	Quartz, vein	Complete	Hertzian
216545	I	WCP538	CL15	770699	6415980	Surface	Non-artefactual	18.87	Quartz, vein		
216546	I	WCP538	CL15	770699	6415980	Surface	Core	20.13	Quartz, vein	Broken	
216547	I	WCP538	CL15	770699	6415980	Surface	Retouched flake	3.61	Quartz, vein	Distal fragment	None
216548	I	WCP538	CL15	770699	6415980	Surface	Non-artefactual	1.42	Quartz, vein		
216549	I	WCP538	CL15	770699	6415980	Surface	Non-artefactual	3.12	Quartz, vein		
216550	I	WCP538	CL17	770705	6415983	Surface	Non-artefactual	1.04	Quartz, vein		
216551	I	WCP538	CL16	770705	6415980	Surface	Unretouched flake	2.89	Quartz, vein	Complete	Hertzian
216552	I	WCP538	CL16	770705	6415980	Surface	Non-artefactual	3.29	Quartz, vein		
216553	I	WCP538	CL16	770705	6415980	Surface	Non-artefactual	19.72	Quartz, vein		
216554	I	WCP538	CL16	770705	6415980	Surface	Non-artefactual	3.9	Quartz, vein		
216555	I	WCP538	CL18	770700	6415984	Surface	Non-artefactual	20.44	Quartz, vein		
216556	I	WCP538	CL18	770700	6415984	Surface	Unretouched flake	1.89	Quartz, vein	Complete	Bending
216557	I	WCP538	CL18	770700	6415984	Surface	Non-artefactual	1.2	Quartz, vein		



Platform type	Termination type	Cortex proportion	Dorsal scar direction	Length	Width	Thickness	Platform width	Platform thickness	Crazing	Crenated fracture	Potlidding	Exfoliation	Comments
None	None	0	Indeterminate	21.76	17.02	6.55			0	0	0	0	
									0	0	0	0	
None	Feather	0	Same	11.79	19.98	7.66			0	0	0	0	
None	Feather	0	Same	7.18	7.35	1.63			0	0	0	0	
									0	0	0	0	
									0	0	0	0	
		90		83.61	92.13	46.25			0	0	0	0	Single scar on sub-rounded cobble.
									0	0	0	0	
None	Feather	0	Indeterminate	10.35	4.9	3.86			0	0	0	0	
Single	None	0	Same	7.96	10.28	4.36	3.63	4.03	0	0	0	0	
									0	0	0	0	
		50		18.86	19.54	13.17			0	0	0	0	Single platform core with two parallel flake scars struck from an indeterminate fracture surface.



									0	0	0	0	
None	None	0	Indeterminate	11.94	15.05	6.1			0	0	0	0	Retouch along distal margin of flake fragment.
None	Feather	0	Same	20.2	19.45	6.88			0	0	0	0	
									0	0	0	0	
Shattered	Step	0	Indeterminate	21.98	15.01	7.92			0	0	0	0	
None	None	0	Indeterminate	25.42	11.85	9.48			0	0	0	0	End scraper, retouched on distal margin.
None	None	0	Same	40.49	34.43	13.42			0	0	0	0	
Multiple	Feather	80	Same	59.61	32.33	14.28	31.11	12.76	0	0	0	0	
Shattered	Feather	0	Same	28.75	24.45	9.73			0	0	0	0	
Single	None	0	Same	21.26	31.22	6.91	24.14	3.01	0	0	0	0	
				31.02	12.99	5.51			0	0	0	0	
None	Feather	0	Same	14.22	5.88	2.83			0	0	0	0	
									0	0	0	0	
Multiple	None	100	None	21.84	25.02	8.94	19.81	6.26	0	0	0	0	
									0	0	0	0	
Shattered	Feather	0	Same	14.23	12.99	5.03			0	0	0	0	
Shattered	Feather	0	Same	21.51	5.33	5.61			0	0	0	0	



									0	0	0	0	
None	Hinge	0	Same	46.21	45.43	14.28			0	0	0	0	
Faceted	None	0	Same	24.46	16.93	5.41	17.39	3.59	0	0	0	0	
Multiple	None	20	Same	37.37	38.24	25.97	12.86	10.01	0	0	0	0	Burin spall scar along distal margin, initiated from right margin. Second scar initiated from the first spall scar onto dorsal scar.
Single	Step	0	Oblique	24.65	20.99	10.48	15.43	5.18	0	0	0	0	
None	Feather	0	Indeterminate	29.02	13.7	5.37			0	0	0	0	
None	Feather	0	Same	12.03	14.04	1.57			0	0	0	0	
Single	Feather	0	Same	6.7	16.21	4.87	12.32	3.24	0	0	0	0	
Single	Feather	0	Same	12.98	7.12	3.21	3.3	1.81	0	0	0	0	
Single	Feather	0	Same	9.76	5.05	2.98	3.13	1.11	0	0	0	0	
Single	Feather	0	Same	26.73	36.09	8.2	9.32	3.96	0	0	0	0	
									0	0	0	0	
Shattered	Feather	0	Same	9.64	15.2	2.73			0	0	0	0	
None	None	0	Same	7.68	9.42	1.52			0	0	0	0	



Multiple	Feather	0	Same	24.8	14.6 2	6.66	15.73	6.32	0	0	0	0	
None	Feather	0	Same	26.61	23.8 2	7.4			0	0	0	0	
Shattered	Step	100	None	17.61	22.1 8	5.47			0	0	0	0	
		0		24.39	18.5 9	9.9			0	0	0	0	Biplar core. Flaking on front and back surfaces, from proximal and distal ends of flake. Platforms on proximal and distal end both faceted with multiple parallel scars.
None	Hinge	0	Same	41.07	37.5 5	14.91			0	0	0	0	Retouch onto ventral face along left margin.
				27.93	12.3 4	10.38			0	0	0	0	
Multiple	Feather	100	None	49.05	17.6 9	8.69	21.62	11.66	0	0	0	0	



Single	Feather	0	Oblique	27.24	21.1 2	3.97	3.87	1.58	1	0	1	0	
									0	0	0	0	
									0	0	0	0	
Single	Feather	0	Same	17.17	13.4 6	11.01	9.65	4.83	0	0	0	0	
Single	Feather	0	Same	15.93	9.33	6.53	6.79	6.18	0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Single	Feather	0	Same	18.31	18.4 8	5.04	18.05	7.87	0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Single	Feather	0	Indeterminate	17.82	18.0 4	7.47	20.77	13.53	0	0	0	0	
				27.63	20.9	17.19			0	0	0	0	
									0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Single	None	0	Same	17.43	18.5 1	8.28			0	0	0	0	
None	None	0	Same	27.05	20.5 1	7.02			0	0	0	0	Small length of retouch along distal margin, onto ventral face.
Single	None	0	Same	12.5	5.01	2.89	5.99	1.61	0	0	0	0	
Shattered	Feather	0	Same	7.88	8.51	1.47			0	0	0	0	



		30		21.95	16.86	10.38			0	0	0	0	Single platform core truncated by break.
				22.03	19.79	9.13			0	0	0	0	
									0	0	0	0	
Shattered	Feather	0	Same	20.3	13.28	8.32			0	0	0	0	
None	Feather	0	Oblique	36.57	25.74	13.48			0	0	0	0	
None	Feather	0	Same	15	20.77	5.82			0	0	0	0	
Single	Feather	0	Same	12.07	11.51	2.81	5.49	1.89	0	0	0	0	
Single	Step	0	Same	30.78	27.24	7.62	10.63	2.33	0	0	0	0	
None	Feather	0	Same	22.04	8.34	5.64			0	0	0	0	
Shattered	Feather	0	Same	19.38	12.41	4.08			0	0	0	0	
Single	Feather	0	Same	6.62	10.84	1.36	6.09	1.47	0	0	0	0	
Single	Step	0	Same	24.1	14.21	4.06	8.99	3.57	0	0	0	0	
Shattered	Feather	0	Indeterminate	15.51	5.37	4.7			0	0	0	0	
									0	0	0	0	
Shattered	Step	0	Same	7.97	12.2	2.28			0	0	0	0	
									0	0	0	0	
Single	Feather	0	Same	23.2	19.45	8.26	9.93	5.05	0	0	0	0	
									0	0	0	0	
None	None	0	Same	20.64	8.91	3.53			0	0	0	0	



Single	None	0	Same	16.2	17.67	2.22	11.1	1.57	0	0	0	0	
Shattered	Feather	0	Indeterminate	19.99	13.36	3.44			0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Shattered	Feather	0	Same	17.32	11.16	3.45			0	0	0	0	
Single	Feather	0	Same	48.57	26.86	11.62	22.21	6.91	0	0	0	0	
Faceted	Feather	0	Same	30.22	14.54	3.15	13.38	4.34	0	0	0	0	
None	None	0	Oblique	15.21	9.99	5.28			0	0	0	0	
Shattered	Feather	0	Same	13.31	13.59	3.05			0	0	0	0	
None	None	0	Indeterminate	16.95	7.42	3.34			0	0	0	0	
									0	0	0	0	
									0	0	0	0	
									0	0	0	0	
None	Feather	0	Same	15.78	8.64	6.09			0	0	0	0	
None	None	0	Same	21.25	13.37	2.16			0	0	0	0	
Shattered	Feather	0	Same	20.33	14.77	5			0	0	0	0	
		30		23.92	22.1	28.81			0	0	0	0	Two platform core.
									0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Shattered	Feather	0	Same	15.34	8.85	2.08			0	0	0	0	



									0	0	0	0	
		50		23.02	30.8 1	16.15			0	0	0	0	Single platform core, truncated by transverse break.
None	None	100	None	21.27	14.0 6	6.96			0	0	0	0	
									0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Single	Feather	100	None	13.75	13.2 6	6.3			0	0	0	0	
									0	0	0	0	
									0	0	0	0	
									0	0	0	0	
									0	0	0	0	
Single	Feather	0	Same	10.01	18.0 1	6.56	13.89	9.25	0	0	0	0	
									0	0	0	0	



ABORIGINAL CONSULTATION

Wilpinjong Coal Mine (WCM) and Peabody Energy conduct an ongoing consultation program with Aboriginal stakeholders regarding cultural heritage management within the Wilpinjong mining lease (ML 1573). There are currently eight organisations or individuals registered as Aboriginal stakeholders (also known as 'registered Aboriginal parties' or RAPs). The registration process is a standard protocol defined by the NSW Office of Environment and Heritage (OEH). Navin Officer Heritage Consultants contacted each stakeholder to invite a representative of each group to be involved in the site visits for this assessment. This was done via email on 12th July 2017. One stakeholder responded to the invitation and their representatives attended the fieldwork.

Field Participation

The following representatives from three registered stakeholder groups responded to invitations and participated in the fieldwork program conducted over three days, 25th to 27th July 2017:

- Christine Maynard Mudgee Local Aboriginal Land Council;
- Tayla Pennell Warrabinga Native Title Claimants Aboriginal Corporation;
- Larry Foley Murrong Gillinga.
- Shaen Morgan North East Wiradjuri Company Ltd

NOHC FIELDWORK PERSONNEL

Archaeologists Elle Lillis and Lucy Blackam undertook the survey, recording and artefact collection.

Dr Oliver Macgregor undertook the artefact description.

CONCLUSIONS AND RECOMMENDATIONS

Eight previously recorded sites were located in areas A, B, C, D, E, F and I and have undergone reassessment.

A total of six previously unrecorded Aboriginal sites, WCP690 to WCP695 have been located as a result of this assessment.

Three new Aboriginal site recordings, WCP690, WCP691 and WCP695 were identified within the Wilpinjong project boundary in Areas B, E and F.

Area G and Area H are outside of the project approval boundary. A due diligence assessment was undertaken at each of these sites.

Three new Aboriginal site recordings, WCP692, WCP693 and WCP694 were identified outside the Wilpinjong project boundary in Areas G and H as a result of this due diligence assessment.

One site was returned to its original GPS location in this survey. WCP669 was picked up on 9th March 2017 and at the time the correct boundary was not supplied. This meant that a site was collected and



once realised this was out of the surface collection boundary was returned to the sites GPS position in the following survey on 26th July 2017(Figure 39 and Figure 40).



Figure 39: WCP669 artefact return



Figure 40: WCP669 artefact return



Area A

There are no previously lodged site recordings that occur in Area A:

No new sites were recorded in Area A,

Recommendations:

2. Area A is cleared for impact relative to Figure 39.

Area B

Two previously lodged site recordings occur in Area B:

WCP45 – Rock shelter (NOHC 2005)

WCP46 – Open artefact site (NOHC 2005)

One previously lodged site recording occurs within ten metres of Area B:

WCP521 – Rock shelter with PAD (South East Archaeology 2015)

Two sites (WCP45 and WCP521) were relocated during the current survey program.

One site (WCP46) could not be relocated by the current survey program.

One new site (WCP690) was recorded in Area B.

Recommendations:

5. Newly recorded Aboriginal site (WCP690) should be entered on the Wilpinjong sites database.
6. The current recorded locations for the following sites should be updated on relevant databases. New recordings for these sites are:

WCP45 – 767764.6416289
7. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the Rock shelter site then the extent and type of further work for Rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.
8. Area B is cleared for impact relative to Figure 40 with buffer zones around Rock shelter sites WCP45 and WCP521.

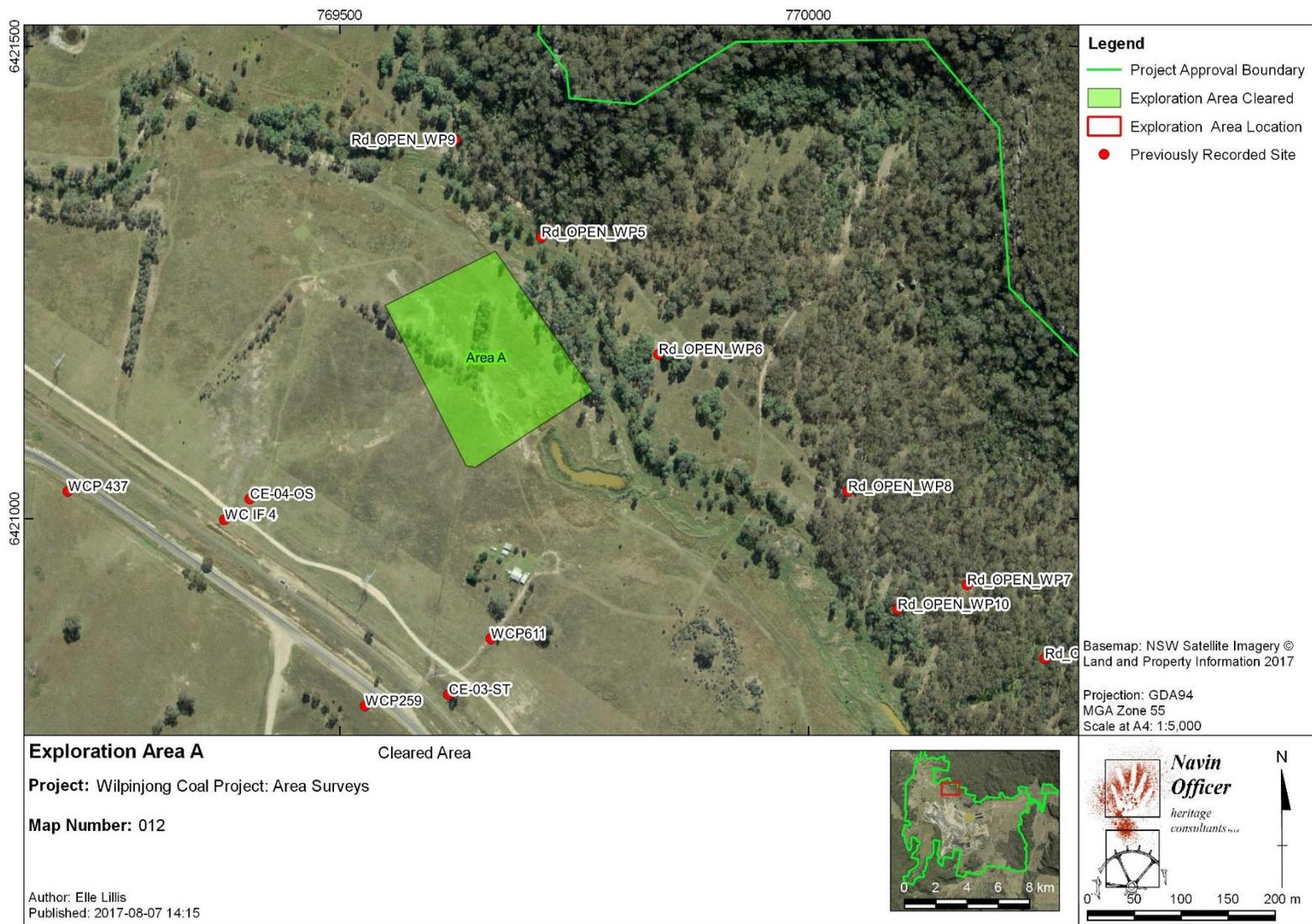


Figure 41 Area cleared for exploration: Area A

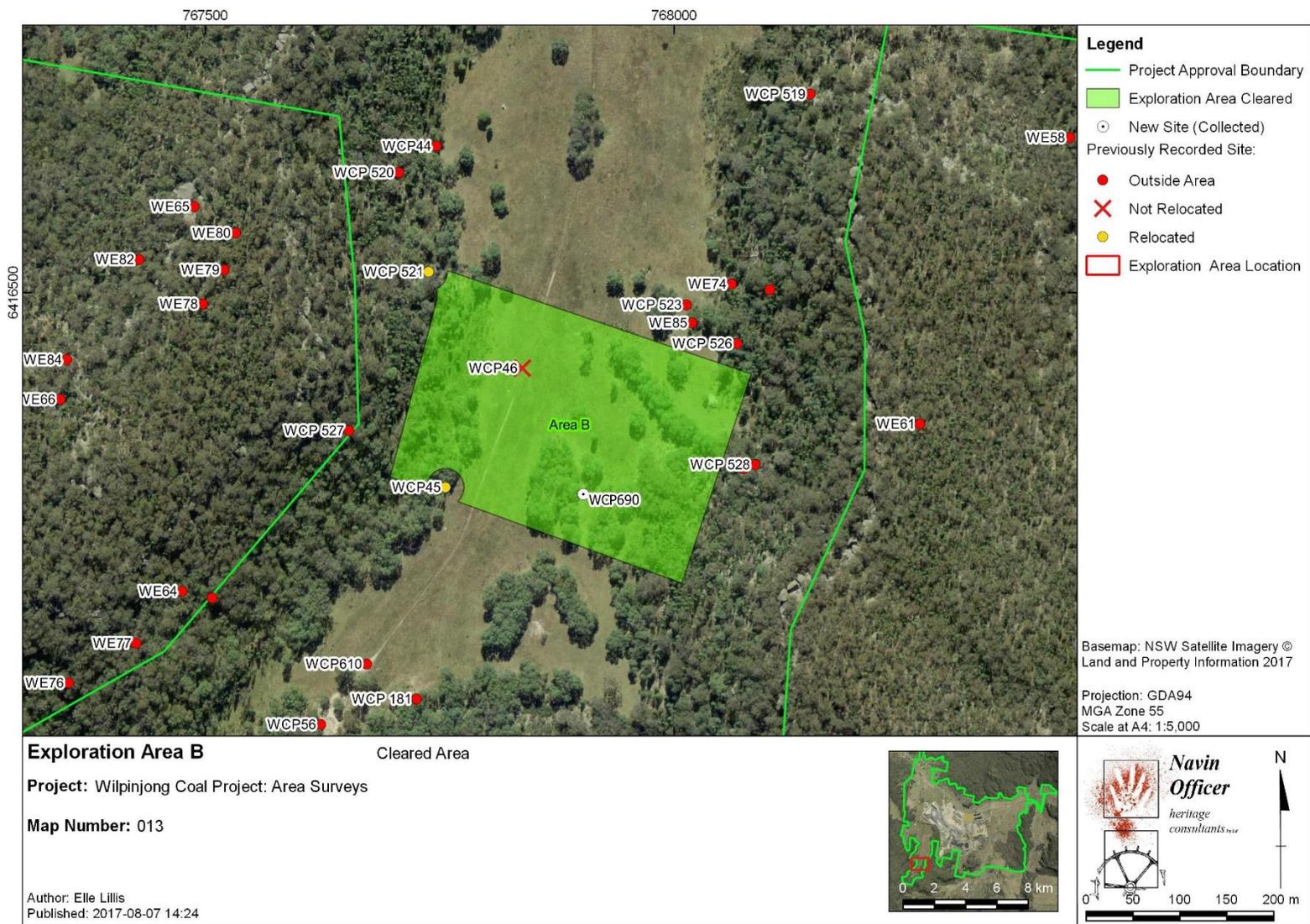


Figure 42 Area cleared for exploration: Area B



Area C

There are no previously lodged site recordings occur in Area C.

No new sites were recorded in Area C.

Part of Area C is located within an area that has been recommended for subsurface testing in the ACHMP.

Recommendations:

3. Part of Area C is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area C should be fenced to avoid impact.
4. Area C is cleared for exploration relative to Figure 41 with a buffer zone around the subsurface testing area.

Area D

One previously lodged site recording occurs in Area D:

CE-09-OS – Open artefact site (Kayandel 2006)

Two previously lodged site recordings occur within ten metres of Area D:

CE-10-OS – Open artefact site (Kayandel 2006)

CE-11-OS – Open artefact site (Kayandel 2006)

One site (CE-11-OS) was re-located and re-assessed, it was determined to be inside Area D.

Two sites (CE-09-OS and CE-10-OS) could not be relocated during the current survey program.

No new sites were recorded in Area D.

Part of Area D is located within an area that has been recommended for subsurface testing in the ACHMP.

Recommendations:

3. The current recorded location for the following site should be updated on relevant databases. The new recording for this site is:

CE-11-OS (WCP285) – GDA94 (Zone 55) 768427.6421750
4. Part of Area D is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area D should be fenced to avoid impact.
5. Area D is cleared for exploration relative to Figure 42 with a buffer zone around the subsurface testing area.



Figure 44 Area cleared for exploration: Area D



Area E

There are no previously lodged site recordings occur in Area E:

One new site (WCP691) was recorded in Area E.

Recommendations:

4. Newly recorded Aboriginal site (WCP691) should be entered on the Wilpinjong sites database.
5. Part of Area E is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area E should be fenced to avoid impact.
6. Area E is cleared for exploration relative to Figure 43 with a buffer zone around the subsurface testing area.

Area F

Three previously lodged site recordings occur in Area F:

WCP530 – Artefact Scatter (South East Archaeology 2015)

WCP533 – Isolated Artefact (South East Archaeology 2015)

WCP525 – Isolated Artefact (South East Archaeology 2015)

Two Sites (WCP525, and WCP530) were relocated and re-assessed.

One site (WCP333) could not be relocated during the current survey program.

One new site (WCP695) was recorded in Area F.

Recommendations:

3. Part of Area F is located within an area that has been recommended for subsurface testing in the ACHMP and is therefore subject to the provisions of the ACHMP. This section in Area F should be fenced to avoid impact.
4. WCP525 in Area F is in an area of moderate to high potential for subsurface artefacts. This area has been assessed as PAD and is recommended to be subject to further subsurface testing to determine the extent of the site. This section in Area F should be fenced to avoid impact.
5. Area F is cleared for exploration relative to Figure 44 with buffer zones around the subsurface testing area and PAD WCP525.



Figure 45 Area cleared for exploration: Area E

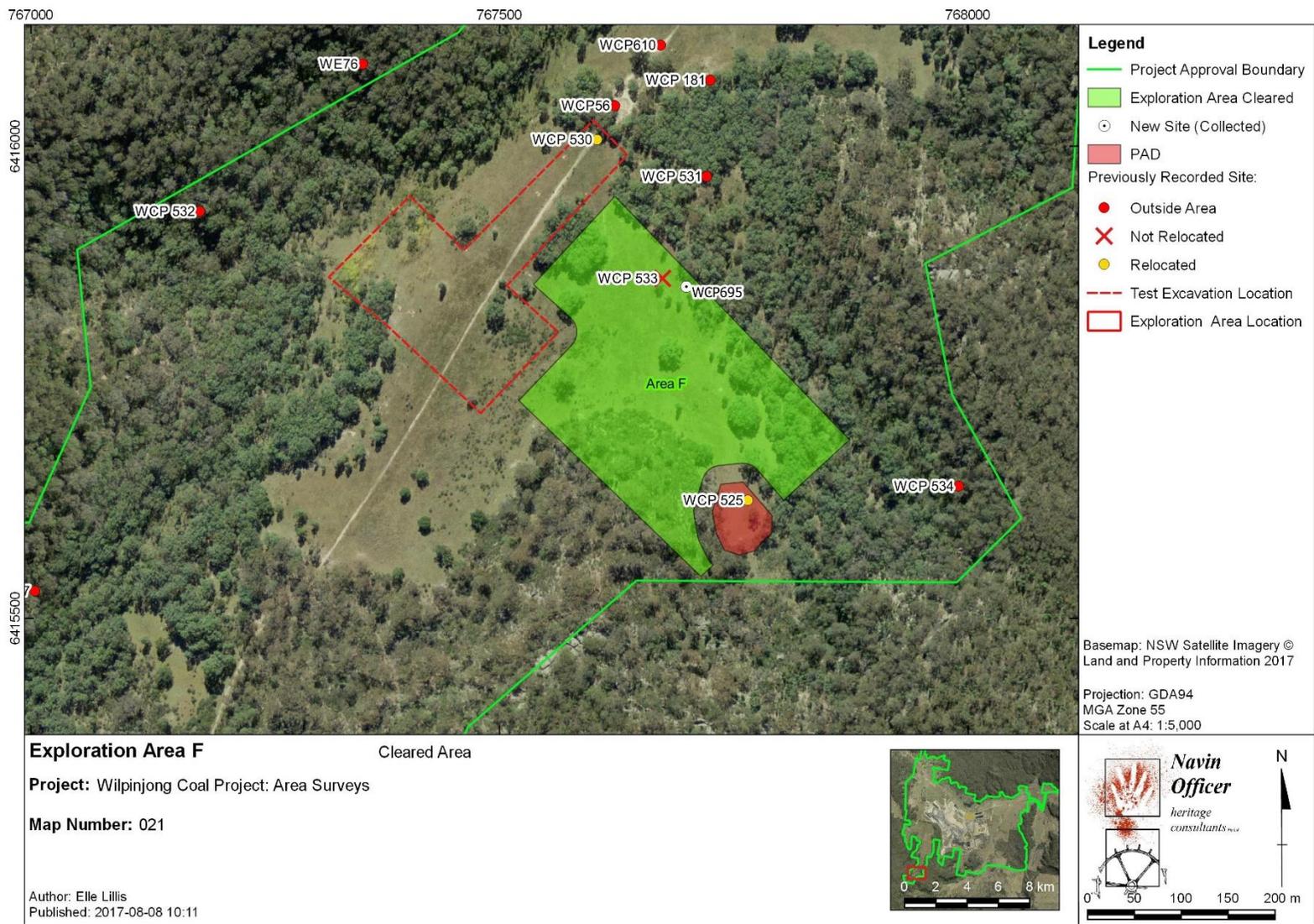


Figure 46 Area cleared for exploration: Area F



Area I

Area I Clearance Survey

Six previously lodged site recordings occur in Area I:

WCP147 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP148 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP229 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP230 – Rock Shelter with Potential Archaeological Deposit (NOHC 2005)

WCP538 – Open Artefact Site (South East Archaeology 2015)

WCP545 – Open Artefact Site (South East Archaeology 2015)

One Previously lodged site recording occurs within twenty metres of Area I in a previously cleared area:

WCP546 – Artefact Scatter (South East Archaeology 2015)

Salvage was attempted at site WCP546 during a previous clearance survey (NOHC 2016) but the site was not able to be relocated.

Seven sites (WCP147, WCP148, WCP229, WCP230, WCP538, WCP545, and WCP546) were relocated and re-assessed during the current survey.

No new sites were recorded in Area I.

Recommendations:

3. The current recorded location for site WCP538 should be updated on relevant databases. New coordinates for this site are:

WCP538 – 770715.6415999

4. Rock shelter sites should be avoided by the project. If avoidance is not feasible at the Rock shelter site then the extent and type of further work for Rock shelter sites within the WCPL ACHMP needs to be resolved prior to their impact.
5. Area I is cleared for impact relative to Figure 45 with buffer zones around Rock shelter sites WCP147, WCP148, WCP229 and WCP230.

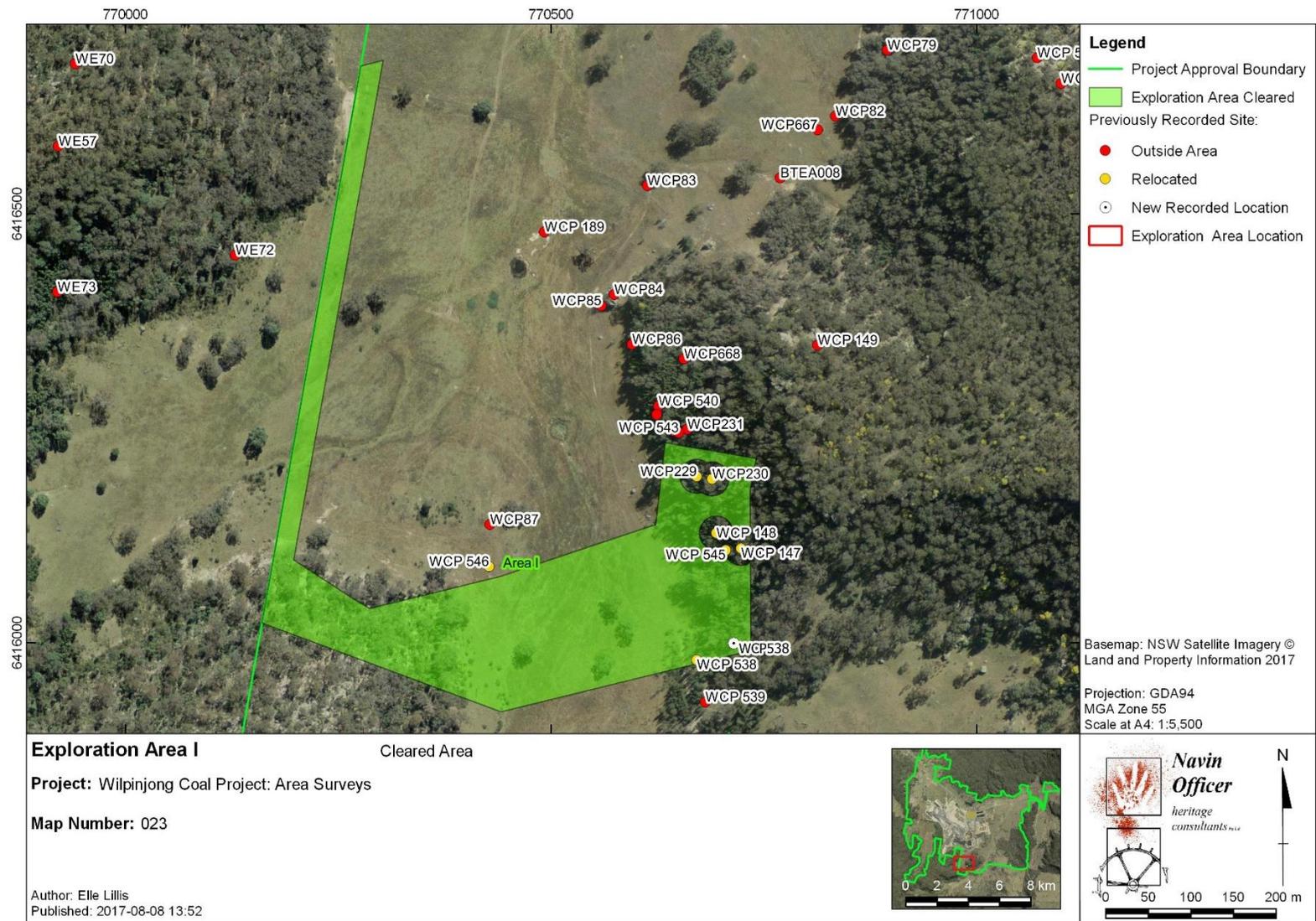


Figure 47 Area cleared for exploration: Area I



Area G Due Diligence

There are no previously lodged site recordings in Area G.

Two new Aboriginal sites (WCP692 and WCP693) were recorded in Area G.

Recommendations:

4. Newly recorded Aboriginal sites (WCP692 and WCP693) should be entered on the Wilpinjong sites database.
5. If these sites cannot be avoided, a programme of surface collection and subsurface archaeological salvage should be conducted prior to impacts. These areas in Area G should be fenced to avoid impact.
6. Area G is cleared for exploration relative to Figure 46 with buffer zones around PADs WCP692 and WCP693.

Area H Due Diligence

One previously lodged site recording occurs in Area H:

WCP569 – Isolated find (South East Archaeology 2015)

This site could not be re-located by the current survey program.

One new site (WCP694) was recorded in Area H.

Recommendations:

4. Newly recorded site WCP694 should be entered on the Wilpinjong Aboriginal sites database.
5. If a site cannot be avoided, a programme of archaeological salvage (surface collection) should be conducted prior to impacts. Sites in Area H should be fenced to avoid impact.
6. Area H is cleared for exploration relative to Figure 47 with buffer zones around open artefact sites WCP569 and WCP694.



Figure 48 Area cleared for exploration: Area G

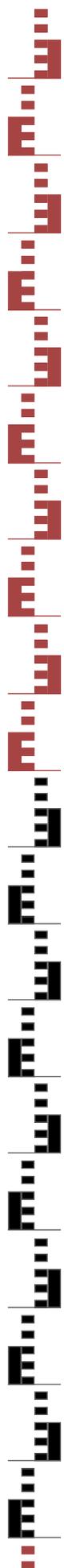


Figure 49 Area cleared for exploration: Area H



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Scarred Trees WCP96, 97, 98, 196 and 197 Wilpinjong Coal Mine, NSW

Salvage Report

July 2017



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1. INTRODUCTION

1.1. Background

As part of the on-going management of Aboriginal cultural heritage sites subject to direct impact from the operation of the Wilpinjong Coal Mine, five scarred trees (WCP 96, 97, 98, 196 and 197), were the subject of salvage operations in May 2016 (Figure 1). Each tree had previously been the subject of archaeological and arboricultural interpretation, analysis and assessment (NOHC 2005, WCPL 2005, UTM 2013, NOHC 2016).

These sites are located within Area 17 as depicted in Figure 1. The clearance survey of Area 17 found eleven scarred trees, of these

- Nine trees were elected for 3D scanning program (WCP94-99, WCP101, WCP196 and WCP197).
- Five trees were elected for salvage program (WCP94, WCP95, WCP97, WCP98 and WCP99).
- Two trees were elected for possible salvage (WCP96 and WCP196).
- Two trees were elected to be removed from AHIMS scarred tree record (WCP100 and WCP169).

At the time of the current survey WCP96, 97, 98, 196 and WCP 197 were removed.

The physical salvage of the five trees was a required action specified in the Wilpinjong Coal Mine – Aboriginal Cultural Heritage Management Plan (WCPL 2006). The conduct of the management plan is an action undertaken for the purpose of complying with Director General Requirements issued by the Department of Planning and Infrastructure for a Major Project (Part 3A – now repealed) under the Environmental Planning and Assessment Act 1979.

Previous scarred tree salvage operations conducted at the Wilpinjong Coal Mine had variously employed a methodology which attempted to maximise the recovery of the scarred portion of the trunk, and particular, the basal portion, by uprooting the tree by pushing it over mechanically. It was observed that although this avoided the need to employ a chainsaw in cutting the trunk close to ground level, it increased the risk of structural damage to the salvaged trunk. Demolition forces which proved difficult to control were the force needed to extract the tree from the ground, and controlling the subsequent fall of the trunk.

In response to these assessments a new salvage methodology was developed by NOHC for Wilpinjong Coal for which a major objective was the effective salvage of trunks considered to be structurally fragile and vulnerable to applied force. This methodology was utilised in May 2016 for the salvage of trees WCP89, 90 and 91. It was deemed to be very successful based on the result that all salvaged trunk sections were recovered without breakage or structural failure.

This report documents the conduct of salvage of scarred trees WCP 96, 97, 98, 196 and 197 using the revised methodology, once again each tree remained in-tack during the salvage program.

Attached to the hardcopy of this report is a USB storage device containing a digital photographic record of the salvage operations.



1.2 Copyright, Restricted information and Confidentiality

Copyright to this report rests with Peabody Energy except for the following:

- The Navin Officer Heritage Consultants logo and business name (copyright to this rests with Navin Officer Heritage Consultants Pty Ltd);
- Generic content and formatting which is not specific to this project or its results (copyright to this material rests with Navin Officer Heritage Consultants Pty Ltd);
- Descriptive text and data relating to Aboriginal objects which must, by law, be provided to OEHL for its purposes and use;
- Information which, under Australian law, can be identified as belonging to Indigenous intellectual property;
- Content which was sourced from and remains part of the public domain

No information provided by Aboriginal stakeholders in this report has been specifically identified as requiring access restrictions due to its cultural sensitivity.

No information in this report has been classified as confidential.

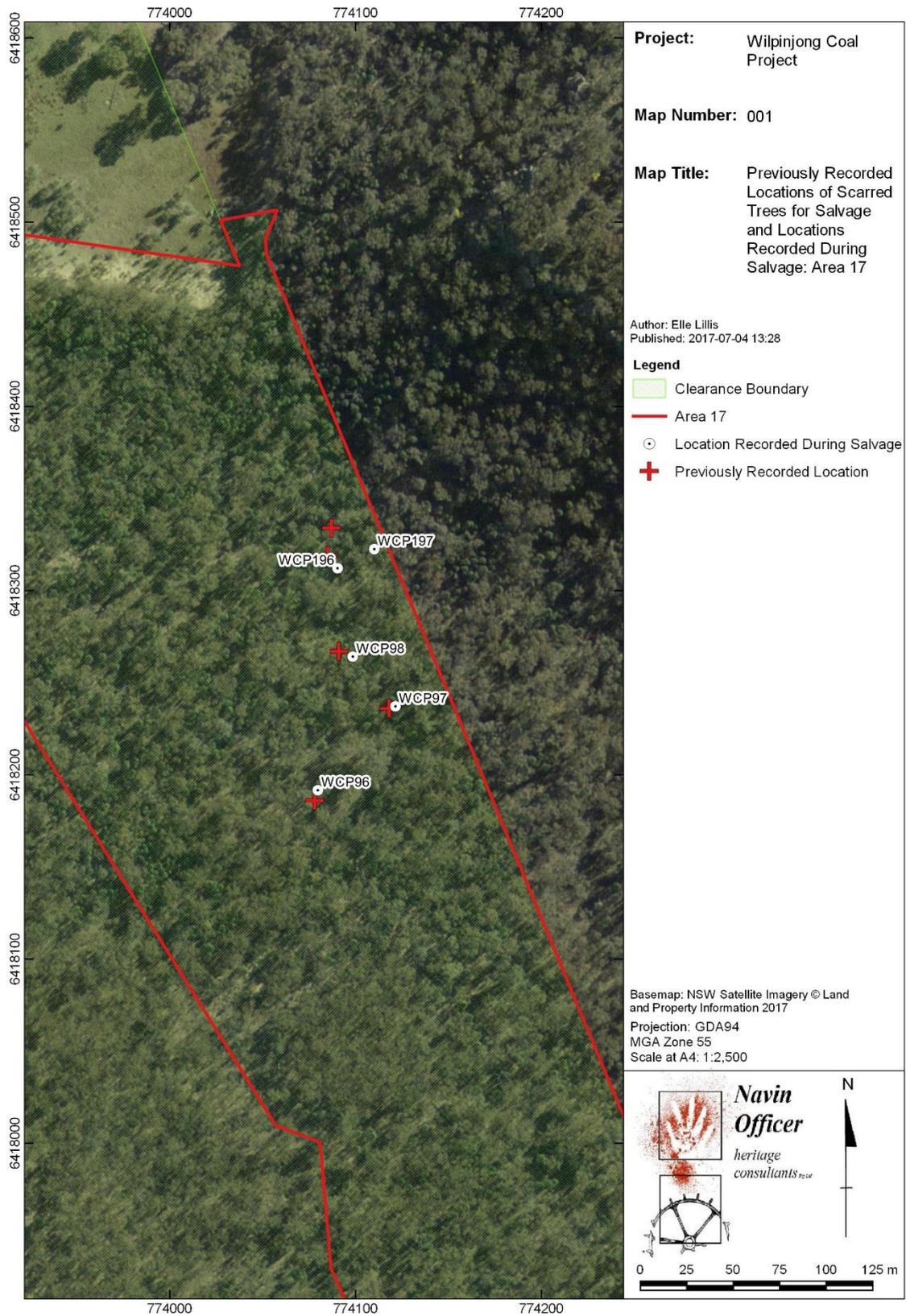


Figure 1 Location of Salvage scarred trees in Area 17



2. METHODOLOGY

2.1 Project Personnel

Personnel involved in the project were:

Jo Dibden Archaeological salvage direction, report writing, general photography
Archaeologist, Navin Officer Heritage Consultants

Elle Lillis

Aboriginal stakeholder field representatives

Larry Foley Murong Gailinga Aboriginal and Torres Strait Island
Corporation

Christine Maynard Mudgee Local Aboriginal Land Council

Coral Williams Warrabinga Native Title Claimants Aboriginal Corporation

Wilpinjong Coal Pty Ltd personnel included:

Clark Potter Senior Environmental Advisor

2.2 Field Equipment Utilised

General photography

Panasonic Lumix AVCHD Lite HD compact digital camera, 14 Mega Pixels 28mm Wide,
Model DMC FT2

Supplied by Wilpinjong Coal Pty Ltd

Elevated work platform HA260PX (Furneys Hire)

Terex AT20 Franna SWL 20T (Mudgee Cranes)

Excavator: 329DL CAT 32 tonne

Omnituff polywoven strap 19mm Hi Vis 06-NSAW75P indicative break strain: 1100kg webbing

Treated pine 'sleepers' 200mm x 75mm x 2400mm

Non-woven stable fibre geotextile

2.3 Field Program

The field component of the salvage program was conducted over the course of two days between 15th and 16th May 2017.

2.4 Salvage Methodology

The following procedure was followed in sequence for each tree scar:

1. Conduct inspection of condition and context of trees. Identify any areas requiring special attention or management including: structural integrity, fragile features, fauna, necessity for excavation, access constraints, and requirement for machinery platforms. Determine the extent of the required salvaged portion of the tree trunk, ensuring that this area includes any suspected fully occluded sections at the top and bottom of the original scar, and an appropriate buffer distance.



2. Construct access tracks for Franna and elevated working platform access, as necessary.
3. Remove any superficial dirt or other debris which may obscure laser and photographic recording.
4. Conduct terrestrial and hand held 3D laser scanning survey, and create systematic High resolution colour photographic record. This was undertaken by internal Wilpinjong Staff.
5. Remove canopy branches and any upper sections of trunk not required for salvage, using chainsaw and personnel within an elevated working platform, Ensure that there is substantial length to allow the securing of the trunk to an overhead crane/franna without impacting the occluded and unoccluded sections of the scar. Care should be taken to protect and avoid impacting the scarred portion of trunk from falling limbs.
6. As necessary, use excavator to excavate around base of tree to provide enough clearance/depth for the safe use of a chainsaw and to gain enough clearance below trunk scar.
7. Secure the top of the remaining trunk to an overhead crane/franna. As necessary, slight upward tension can be applied by the crane/franna. During this process if the tree is deemed to fragile it will be wrapped with geotextile.
8. Review location of basal chainsaw cut, taking into consideration, area required for salvage, the necessity for a straight cut, or a scarf and hinge, slope and tendency to fall, and likely depth of wood prior to encountering termite nest or other internal non-wooden material. Remove obscuring dirt or other hazards.
9. Conduct chainsaw cut around base of, and below scarred section of trunk. The use of wedges may be beneficial. Where a scar extends close to or into the base of a tree, it is beneficial to salvage as much of the trunk as possible. In such cases a straight cut, utilising wedges, is preferable to employing a scarf and back cut and a hinge detachment.
10. As necessary maintain upward tension on the upper trunk using overhead crane/franna. Following completion of the chainsaw basal cut, detach and/or raise the salvaged section trunk away from the stump
11. With the use of a crane/franna, transport the salvaged section of trunk to a flatbed truck, ensuring that the scarred sections and any fragile features are not subject to direct impact
12. Secure trunks to truck for transport. Ensure that some form of pedestal or packing (such as the sleepers) are used between the trunk and truck surface.
13. Transport salvaged trunks to storage facility. Use crane/franna to remove from truck flatbed and position into storage facility, as necessary.



3. SITE DESCRIPTIONS

WCP96

GDA 7747100.6418263

An assessment of WCP96 was undertaken by NOHC (2005) who determined the two scars may be Aboriginal or European in origin.

In 2013, an additional assessment of WCP96, a Yellow Box approximately between 300 -<350 years old, was undertaken by UTM who determined the origin of both scar wounds were likely to be Aboriginal. One scar was determined to be between 125 - <175 years old and the other 150 - <200 years old.

Proposal for salvage of WCP96 was discussed with the Aboriginal representatives on site during April 2016 (Figure 2).

WCP96 was nominated for 3D scanning.

WCP96 had been previously considered in poor condition and apprehension over scar preservation during the removal process was raised. The proposed salvage of WCP96 was decided onsite at imaging stage following consultation with tree removalist and Aboriginal representatives. WCP96 had blown over in a wind storm prior to visit the tree was still salvaged.

New location data was recorded for Modified Tree WCP96 during the current salvage program from GDA 774078.6418186 to GDA 774079.6418191



Figure 2 WCP96 scar 1 and 2



4.0 TREE ASSESSMENT - Assessment of Tree/s – Tree 22 / 96

Tree No. / Reference No. Genus & species Common Name	1. Age Class Y = Young M = Mature O = Over-mature (Senescent) 2. Age range of tree in yrs. approx. 3. Age range of wound in yrs. approx.	Condition G = Good F = Fair P = Poor M = Moribund D = Dead	Form D = Dominant C = Co-dominant I = Intermediate S = Suppressed F = Forest E = Emergent	Height in metres approx. / Crown spread approx. length x breadth metres / Crown spread orientation.	Trunk diameter in mm @ 1.4m, or as stated / Trunk diameter orientation.	Crown cover / Crown density approx. %	IRV Age, Vigour, Condition / Index Rating App A.
22 / 96 <i>Eucalyptus melliodora</i> A. Cunn. Ex Schauer Yellow Box	1. O 2. >300 - <350 3.1 125 - 175 3.2 150 - <200	P	D	18 / 12 Radial	1100 x 1000, 1050 Av N/S	45 75	OGVF - 5

Description - general

Eucalyptus melliodora A. Cunn. Ex Schauer - Yellow Box, is a medium-sized woodland to occasionally tall forest tree (Brooker and Kleinig 1999, p. 248, Boland *et al*, 2006, p. 498) with crown spread 8-25 m and a height of 10-30 m (Elliot and Jones 1986, p. 145) or 15-30 m, with a trunk diameter 1.0 m DBH or more, with trunk one third or half the tree height (Boland *et al*, 2006, p. 498). Yellow Box a high green density (GD) approximately 1230 kg / m³ and an air dry density (ADD) of 1030 kg/ m³ heartwood durable (Bootle 1985, p. 257), resistant to *Lyctus borers*, heartwood hard, strong and very durable, termite resistant, used for heavy engineering, construction, poles, fencing material and railway sleepers (Boland *et al*, 2006, p. 498), burns well and is an excellent honey tree (Elliot and Jones 1986, p. 147). The durable wood is indicative of gradual deterioration since wounding.

Description - specific

This tree is senescent and of poor condition, 300 - <350 years old. Caulescent, trunk to 4.0 m approx., crown deliquescent, symmetrical, with 2 trunk wounds each on the southeast and east sides.

Wound 1

Trunk wound, basal, broad rectangular-square, on southeast side, extending ground to 3600 mm and 1800 mm circumference at widest generally with successional wounding of the right margin. Wound face entire to heartwood with weathering medium as delignification, with some heaving and cracking vertically along ray cells towards center. Wound face extending from ground to 2300 mm and 1800 mm circumference at widest at center (Photograph 22.1). Wound margins: right irregular and left entire, apex truncate and base truncate. Initial wound margins not evident. Depth of margins: right 70 - 200 mm proximal to distal and left 70 - 220 mm proximal to distal. Width of margins: not evident.

This wound is expected to have affected approximately 60% of the trunk circumference *in situ*. The wound is expected to be 125 - <175 years old. From the dimensions and age of the tree, depth of the wound margins, medium weathering of its durable heartwood as delignification, the wound is likely to be of Aboriginal cultural origin.

Wound 2

Trunk wound, basal, narrow triangular, on east side, extending from ground – 900 mm and 200 mm at widest at 200 mm with successional wounding of the right margin. Wound face entire to heartwood with weathering medium as delignification, extending from ground to 900 mm and 200 mm at widest at 200 mm (Photograph 22.2). Wound margins: right entire and left entire, apex acute and base truncate. Initial wound margins not evident. Depth of margins: right 500 mm and left 3000 mm. Width of margins: not evident.



This wound is expected to have affected approximately 10% of the trunk circumference *in situ*. The wound is expected to be 150 - <200 years old. From the dimensions, age of the tree, size, dimensions and medium weathering as delignification of the durable wood, the wound is likely to be of Aboriginal cultural origin.

Risks to tree

Damage from fire, fungal decay, termite damage and continued structural deterioration leading to the collapse of the trunk or first order structural branches.



Photograph 22.0



Photograph 22.1

Photograph 22.0 By Danny Draper. View to north of Tree 22 / 96, *Eucalyptus melliodora* A. Cunn. Ex Schauer – Yellow Box.

Photograph 22.1 By Danny Draper. View to northwest. Wound 1 shown with a yellow folding ruler extended to 1 m.

Photograph 22.2 By Danny Draper. View to west. Wound 2 shown with a yellow folding ruler extended to 1 m.



Photograph 22.2



WCP97

GDA 774121.6418237

An assessment of WCP97 was undertaken by NOHC (2005) who determined the scar to be mostly on the fallen and dead section of trunk may be Aboriginal or European in origin. In 2013, an additional assessment of WCP97, a Yellow Box, was undertaken by UTM who determined the age range of tree as 300 - <350 and the scar wound to be between 150 and 200 years old with origin likely to be Aboriginal.

Proposal for salvage of WCP97 was discussed with the Aboriginal representatives on site during April 2016 (Figure 3).

WCP97 was nominated for 3D scanning.

WCP97 section was salvaged.

New location data was recorded for Modified Tree WCP9 during the current salvage program from GDA 774118.6418236 to GDA 774121.6418237



Figure 3 WCP97 view of fallen trunk and remaining stump



4.0 TREE ASSESSMENT - Assessment of Tree/s – Tree 23 / 97

Tree No. / Reference No. Genus & species Common Name	1. Age Class Y = Young M = Mature O = Over-mature (Senescent)	Condition G = Good F = Fair P = Poor M = Moribund D = Dead	Form D = Dominant C = Co-dominant I = Intermediate S = Suppressed F = Forest E = Emergent	Height in metres approx. / Crown spread approx. length x breadth metres / Crown spread orientation.	Trunk diameter in mm @ 1.4m, or as stated / Trunk diameter orientation.	Crown cover / Crown density approx. %	BRV Age, Vigour, Condition / Index Rating App A.
23 / 97 <i>Eucalyptus melliodora</i> A. Cunn. Ex Schauer Yellow Box	1. O 2. 300 - <350 3.1 150 - <200	P	D	19 / 6x4 EW	700, Radial	30 50	OGVP - 4

Description - general

Eucalyptus melliodora A. Cunn. Ex Schauer - Yellow Box, is a medium-sized woodland to occasionally tall forest tree (Brooker and Kleinig 1999, p. 248, Boland *et al*, 2006, p. 498) with crown spread 8-25 m and a height of 10-30 m (Elliot and Jones 1986, p. 145) or 15-30 m, with a trunk diameter 1.0 m DBH or more, with trunk one third or half the tree height (Boland *et al*, 2006, p. 498). Yellow Box a high green density (GD) approximately 1230 kg / m³ and an air dry density (ADD) of 1030 kg / m³ heartwood durable (Bootle 1985, p. 257), resistant to *Lyctus borers*, heartwood hard, strong and very durable, termite resistant, used for heavy engineering, construction, poles, fencing material and railway sleepers (Boland *et al*, 2006, p. 498), burns well and is an excellent honey tree (Elliot and Jones 1986, p. 147). The durable wood is indicative of gradual deterioration since wounding.

Description - specific

This tree is senescent, up to 300 - <350 years old. Caulescent, trunk to 8.0 m approx., deliquescent, forest form, failed and collapsed at 900 mm, trunk section containing wound on ground and other trunk sections remaining (Photograph 23.2). Crown regrowth from basal epicormic shoots. Wound on northeast side of trunk.

Wound 1

Trunk wound, broad elliptical, on northeast side, trunk failed and collapsed at 900 mm, trunk section containing wound on ground extending from 900 – 2000 mm and 770 mm circumference at widest at center. Wound face entire to heartwood with weathering medium as delignification, with some spiral cracking vertically along ray cells (Photograph 23.1). Wound face extending from 900 - 2000 mm and 770 mm circumference at widest at center. Wound margins: right entire and left entire, apex rounded and base rounded but broken and separated when trunk collapsed (Photograph 23.1). Initial wound margins not evident. Depth of margins: right 110 mm and left 90 mm. Width of margins: not evident.

This wound is expected to have affected approximately 40% of the trunk circumference *in situ*. The wound is expected to be 150 - <200 years old. From the dimensions and age of the tree, depth of the wound margins, medium weathering of its durable heartwood as delignification, the wound is likely to be of Aboriginal cultural origin.

Risks to tree

Damage from fire, fungal decay, termite damage and continued structural deterioration leading to the collapse of the trunk or first order structural branches.





WCP98

GDA 774098.6418264

An assessment of WCP98 was undertaken by NOHC (2005) who determined wound with one upper straight row of axe marks may be of Aboriginal or European origin.

An additional assessment by UTM (2013) of WCP98, a Yellow Box approximately 250 - <300 years old, bore two scars and determined the origin of one scar (aged between 100 - <150 years old) likely to be Aboriginal and one scar a branch tear approximately 20 - <50 years old.

Proposal for salvage of WCP98 was discussed with the Aboriginal representatives on site during the April 2016 survey (Figure 4).

WCP98 was nominated for 3D scanning and the salvage program. Salvage occurred at May 2017 salvage program

New location data was recorded for Modified Tree WCP98 during the current salvage program from GDA 774091.6418267 to GDA 774098.6418264



Figure 4 WCP98 Aboriginal scar (left) and branch tear scar (right)



4.0 TREE ASSESSMENT - Assessment of Tree/s – Tree 19 / 98

Tree No. / Reference No. Genus & species Common Name	1. Age Class Y = Young M = Mature O = Over-mature (Senescent) 2. Age range of tree in yrs. approx. 3. Age range of wound in yrs. approx.	Condition G = Good F = Fair P = Poor M = Moribund D = Dead	Form D = Dominant C = Co-dominant I = Intermediate S = Suppressed F = Forest E = Emergent	Height in metres approx. / Crown spread approx. length x breadth metres / Crown spread orientation.	Trunk diameter in mm @ 1.4m, or as stated / Trunk diameter orientation.	Crown cover / Crown density approx. %	BRIV Age, Vigour, Condition / Index Rating App A.
19 / 98 <i>Eucalyptus melliodora</i> A. Cunn. Ex Schauer Yellow Box	1. M 2. 250 - <300 3.1 100 - <150 3.2 20 - <50	F	D	18 / 12 Radial	800x700, 800 Av N/S	90 90	MGVF - 9

Description - general

Eucalyptus melliodora A. Cunn. Ex Schauer - Yellow Box, is a medium-sized woodland to occasionally tall forest tree (Brooker and Kleinig 1999, p. 248, Boland *et al*, 2006, p. 498) with crown spread 8-25 m and a height of 10-30 m (Elliot and Jones 1986, p. 145) or 15-30 m, with a trunk diameter 1.0 m DBH or more, with trunk one third or half the tree height (Boland *et al*, 2006, p. 498). Yellow Box a high green density (GD) approximately 1230 kg / m³ and an air dry density (ADD) of 1030 kg/ m³ heartwood durable (Bootle 1985, p. 257), resistant to *Lyctus borers*, heartwood hard, strong and very durable, termite resistant, used for heavy engineering, construction, poles, fencing material and railway sleepers (Boland *et al*, 2006, p. 498), burns well and is an excellent honey tree (Elliot and Jones 1986, p. 147). The durable wood is indicative of gradual deterioration since wounding.

Description - specific

This tree is mature and of fair condition, 250 - <300 years old. Caulescent, trunk to 4.0 m approx., crown deliquescent, asymmetrical, with 2 trunk wounds each on the west and north sides. The wound to north is a branch tear, evident from the remaining concave wound face and larger uniformly margins towards the apex as per a branch collar, likely derived from a failed mature basal epicormic shoot and will not be discussed further, but is shown in Photograph 19.2. The tree has a large prominent basal flare with a mature basal epicormic shoot 160 mm DBH below the wound to west, likely to have arisen in response to the wounding stimulus. The tree has a partially occluded wound on the upper trunk from 2.6 – 4.0 m approx. derived from the loss of the apical meristem and trunk section, with trunk section lost remaining beside the tree evident in Photograph 19.1. This trunk section is hollow and likely collapsed as a result of loading forces overcoming its structurally unsound condition.

Wound 1

Trunk wound, broad elliptical, on west side, extending from 700 - 2600 mm and 450 mm at widest at center. Wound face entire to heartwood with medium weathering as delignification, and spiral vertical cracks as ray cells desiccate and separate. Wound face extending from 900 – 2800 mm and 650 mm circumference at widest at center (Photograph 19.1). Wound margins entire, apex acute and base rounded. Initial wound margins not evident. Depth of margins: right 160 - 100 mm proximal to distal, left 100 mm. Width of margins: unable to be determined.

This wound is expected to have affected approximately 60% of the trunk circumference *in situ*. The wound is expected to be 100 - <150 years old. From the dimensions and age of the tree, depth of the wound margins and extent of margin development, medium weathering of its durable heartwood as delignification, the wound is likely to be of Aboriginal cultural origin.



Risks to tree

Damage from fire, fungal decay, termite damage and continued structural deterioration leading to the collapse of the trunk or first order structural branches.



Photograph 19.0



Photograph 19.1

Photograph 19.0 By Danny Draper. View to east of Tree 19 / 98, *Eucalyptus melliodora* A. Cunn. Ex Schauer – Yellow Box (center).

Photograph 19.1 By Danny Draper. View to east. Wound 1 shown with a yellow folding ruler extended to 1 m. Orange brace shows the partially occluded wound on the trunk from the loss of the apical meristem and trunk section, with trunk section lost indicated by the red arrow. Mature basal epicormic shoot below wound likely to have arisen in response to the wounding stimulus.

Photograph 19.2 By Danny Draper. View to south. Wound 2 shown with a yellow folding ruler extended vertically to 1.0 m. Exposed section of wound face, indicated by red arrow, concave indicative of a branch tear wound, and likely a mature epicormic shoot.



Photograph 19.2



WCP196
GDA 774090.6418312

An assessment of WCP196 was undertaken by NOHC (2005) who determined the scar may be Aboriginal or European in origin.

In 2013, an additional assessment of WCP196, a Yellow Box approximately aged between 200 -<250 years old, was undertaken by UTM who determined the age of scar between 50 - <75 years old and likely to be of Aboriginal origin.

Proposal for salvage of WCP196 was discussed with the Aboriginal representatives on site during the April 2016 survey (Figure 5).

WCP196 was nominated for 3D scanning.

WCP196 is in poor condition and apprehension over scar preservation during the removal process was raised. The proposed salvage of WCP196 will be decided onsite at imaging stage following consultation with tree removalist and Aboriginal representatives.

This process occurred onsite in May 2017 and WCP196 was salvaged.

New location data was recorded for Modified Tree WCP196 during the current salvage program from GDA 774085.64183119 to GDA 774090.6418312

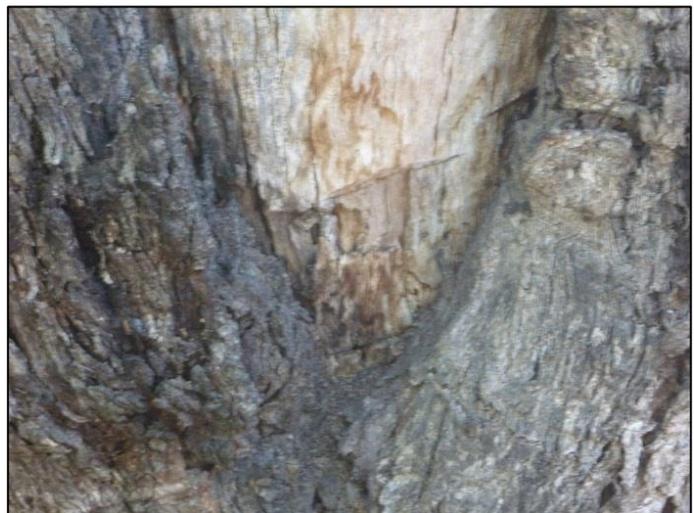


Figure 5 WCP196 axe marks (right)



4.0 TREE ASSESSMENT - Assessment of Tree/s – Tree 20 / 196

Tree No. / Reference No. Genus & species Common Name	1. Age Class Y = Young M = Mature O = Over-mature (Senescent) 2. Age range of tree in yrs. approx. 3. Age range of wound in yrs. approx.	Condition G = Good F = Fair P = Poor M = Moribund D = Dead	Form D = Dominant C = Co-dominant I = Intermediate S = Suppressed F = Forest E = Emergent	Height in metres approx. / Crown spread approx. length x breadth metres / Crown spread orientation.	Trunk diameter in mm @ 1.4m, or as stated / Trunk diameter orientation.	Crown cover / Crown density approx. %	IRV Age, Vigour, Condition / Index Rating App A.
20 / 196 <i>Eucalyptus melliodora</i> A. Cunn. Ex Schauer Yellow Box	1. 0 2. 200 - <250 3.1 50 - <75	P	D	14 / 8 Radial	760x600, 680 Av E/W	50 70	OGVP - 4

Description - general

Eucalyptus melliodora A. Cunn. Ex Schauer - Yellow Box, is a medium-sized woodland to occasionally tall forest tree (Brooker and Kleinig 1999, p. 248, Boland *et al*, 2006, p. 498) with crown spread 8-25 m and a height of 10-30 m (Elliot and Jones 1986, p. 145) or 15-30 m, with a trunk diameter 1.0 m DBH or more, with trunk one third or half the tree height (Boland *et al*, 2006, p. 498). Yellow Box a high green density (GD) approximately 1230 kg / m³ and an air dry density (ADD) of 1030 kg/ m³ heartwood durable (Bootle 1985, p. 257), resistant to *Lyctus borers*, heartwood hard, strong and very durable, termite resistant, used for heavy engineering, construction, poles, fencing material and railway sleepers (Boland *et al*, 2006, p. 498), burns well and is an excellent honey tree (Elliot and Jones 1986, p. 147). The durable wood is indicative of gradual deterioration since wounding.

Description - specific

This tree is senescent, up to 200 - <250 years old. Caulescent, trunk to 2.76 m as distal section lost (Photograph 20.1), crown deliquescent, symmetrical, comprised of remaining lateral branches in the lower crown with one wound on the north side. The trunk is expected to be hollow or hollowing and likely collapsed as a result of loading forces overcoming its structurally unsound condition.

Wound 1

Trunk wound, oval, on south side, but incomplete distally (Photograph 20.1), extending from 800 – 2760 mm and 490 mm circumference at widest at center. Wound face entire, jagged distally with medium weathering of sapwood to heartwood with minimum weathering as delignification, with lacerations 60 mm long consistent with steel axe cuts evident as 2 lines adjacent the wound base at 840 and 950 mm, with one 25 mm section of 1 cut evident at 840 mm partially occluded and 1 complete cut and a 25 mm section occluded by the right wound margin at 950 mm. Wound face extending from 800 – 2760 mm and 490 mm circumference at widest at center. Wound margins entire save for distal ends, apex missing and base acute. Initial wound margins not evident. Depth of margins: right 120 - 150 mm proximal to distal and left 50 - 60 mm proximal to distal. Width of margins: not evident.

This wound is expected to have affected approximately 20% of the trunk circumference *in situ*. The wound is expected to be 50 - <75 years old. From the dimensions and age of the tree, depth of the wound margins, medium weathering of its sapwood and durable heartwood as delignification, the wound is likely to be of Aboriginal cultural origin.

Risks to tree

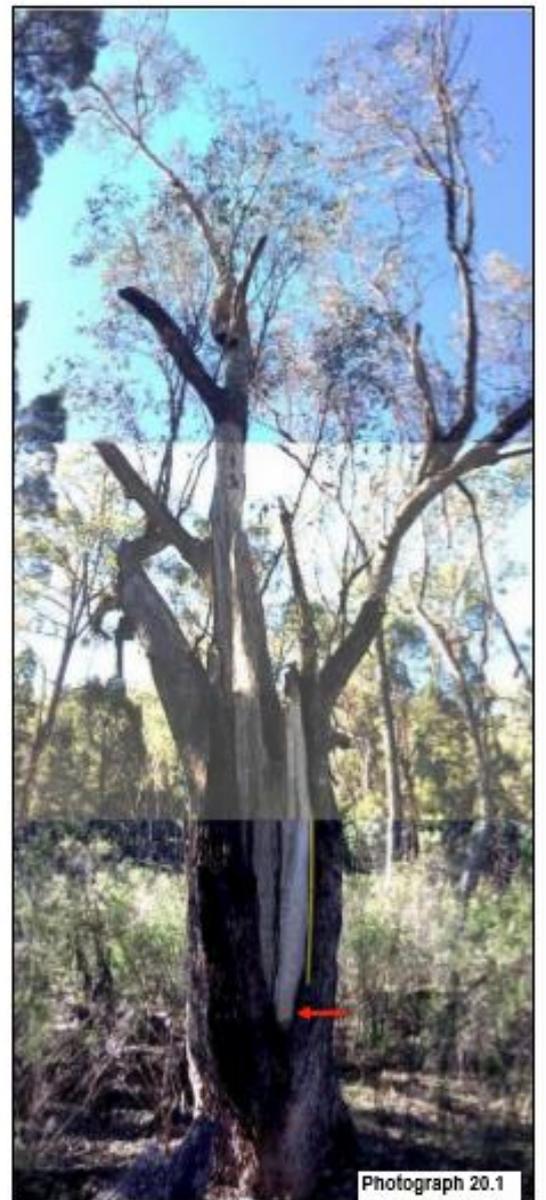
Damage from fire, fungal decay, termite damage and continued structural deterioration leading to the collapse of the trunk or first order structural branches.



Photograph 20.0

Photograph 20.0 By Danny Draper. View to south of Tree 20 / 196, *Eucalyptus melliodora* A. Cunn. Ex Schauer – Yellow Box (center).

Photograph 20.1 By Danny Draper. View to north. Wound 1 shown with a yellow folding ruler extended to 1 m, wound incomplete with loss of apical meristem and trunk section. Arrow indicates 2 rows of axe cuts, partially occluded.



Photograph 20.1



WCP197

GDA 774110.6418322

An assessment of WCP197 was undertaken by NOHC (2005) who determined scars may be Aboriginal or European in origin, with upper part of one scar obscured and a straight row of axe marks present at lower end of scar.

In 2013, an additional assessment of WCP197, a White Box approximately between 300 -<350 years old, was undertaken by UTM who determined the origin of both scar wounds were likely to be Aboriginal. Both scars were determined to be between 100 - <150 years old.

Proposal for salvage of WCP197 was discussed with the Aboriginal representatives on site during the April 2016 assessment (Figure 6).

WCP197 was nominated for 3D scanning.

WCP197 was initially not included for salvage in this discussion but in the most recent survey it was decided with the Aboriginal representatives on site to salvage.

New location data was recorded for Modified Tree WCP197 during the current salvage program from GDA 774087.6418334 to GDA 774110.6418322



Figure 6 WCP197 scar 1 and 2



4.0 TREE ASSESSMENT - Assessment of Tree/s – Tree 18 / 197

Tree No. / Reference No. Genus & species Common Name	1. Age Class Y = Young M = Mature O = Over-mature (Senescent) 2. Age range of tree in yrs. approx. 3. Age range of wound in yrs. approx.	Condition G = Good F = Fair P = Poor M = Moribund D = Dead	Form D = Dominant C = Co-dominant I = Intermediate S = Suppressed F = Forest E = Emergent	Height in metres approx. / Crown spread approx. length x breadth metres / Crown spread orientation.	Trunk diameter in mm @ 1.4m, or as stated / Trunk diameter orientation.	Crown cover / Crown density approx. %	IRV Age, Vigour, Condition Index Rating App A.
18 / 197 <i>Eucalyptus albens</i> Benth. White Box	1. O 2. >300 - <350 3.1 >100 - <150 3.2 >100 - <150	F	D	18 / 12 Radial	1100x600, 850 Av E/W	70 85	OGVF - 5

Description - general

Eucalyptus albens Benth. - White Box, is a small to medium sized woodland tree (Brooker and Kleinig 1999, p. 221) to tall tree with crown spread 10-15 m and a height of 10-25 m (Elliot and Jones 1986, p. 17), with a trunk diameter 0.5-1.0 m DBH, moderately straight trunk up to half or more the height on better soils (Boland *et al*, 2006, p. 464). White Box has heartwood of medium to high density, 1005-1180 kg / m³, moderately durable, resistant to *Lyctus* borers and termites, interlocked grain, used for heavy engineering construction as poles, railway sleepers, fencing, firewood (Boland *et al*, 2006, p. 464), and is a valuable honey tree (Elliot and Jones 1986, p. 17). The durable wood is indicative of gradual deterioration since wounding.

Description - specific

This tree is senescent and of fair condition, 300 - <350 years old. Caulescent, trunk to 4.0 m approx., crown deliquescent, symmetrical, with 2 trunk wounds each on the south and east sides. Mature basal epicormic shoot 100 mm DBH below wound on east side of trunk, likely to have arisen in response to the wounding stimulus.

Wound 1

Trunk wound, broad oval, mostly occluded on south side, extending from 300 - 2100 mm and 500 mm at widest at center. Wound face entire, almost occluded, exposed heartwood with medium weathering as delignification, extending from 500 – 1050 mm and 200 mm at widest at 500 mm (Photograph 18.1). Wound margins entire, apex acute and base truncate at basal flare where it extends to a first order structural root. Initial wound margins not evident. Depth of margins: right 120 mm left 130 mm. Width of margins: right 120 mm and left 600 mm.

This wound is expected to have affected approximately 25% of the trunk circumference *in situ*. The wound is expected to be >100 - <150 years old. From the dimensions and age of the tree, depth of the wound margins and extent of margin development and near occlusion, medium weathering of its durable heartwood as delignification, the wound is likely to be of Aboriginal cultural origin.

Wound 2

Trunk wound, occluded, oval, on east side, extending from 600 – 1000 mm and 350 mm at widest at center. Wound face occluded (Photograph 18.2). Wound margins occluded. Initial wound margins approximately shown in Photograph 19.2, represented with a dotted outline. Depth of margins and Width of margins are not applicable.



This wound is expected to have affected approximately 10% of the trunk circumference *in situ*. The wound is expected to be >100 - <150 years old. From the dimensions, age of the tree, size, dimensions and shape of the occluded wound, the wound is likely to be of Aboriginal cultural origin.

Risks to tree

Damage from fire, fungal decay, termite damage and continued structural deterioration leading to the collapse of the trunk or first order structural branches.



Photograph 18.0 By Danny Draper. Tree 18 / 169 *Eucalyptus albens* Benth. White Box, view to northeast.



Photograph 18.1

Photograph 18.1 By Danny Draper. View to north. Wound 1 on north side of trunk with a yellow folding ruler extended to 1.0 m, orange brace show extent of initial wound. Wound base extends to a first order structural root.



Photograph 18.2

Photograph 18.2 By Danny Draper. View to west. Wound 2, occluded on east side of trunk with a yellow folding ruler extended to 1.0 m, occlusion seam left of ruler. Orange broken line shows approximate outline of wound. Dead, mature epicormic shoot below wound, expected to have arisen in response to the wounding stimulus.



4. RECORD MANAGEMENT

The function of this report, as a baseline and archival record is associated with a number of priorities regarding its curation and storage. Standards and guidelines published by the NSW Heritage Office, now the NSW Office of Environment and Heritage, state that an archival record;

‘should be placed in public ownership, ie in a public library or archive or with a government department, in accordance with Article 28 of the Burra Charter. Ideally copies should be placed in a relevant library and with the owner of the item or client who commissioned the recording.’ (NSW Heritage Office 1998:14).

In order to comply with this requirement, it is recommended that Peabody Energy Australia consider the provision and/or storage of copies of this report, either in hard copy or electronic format as appropriate, to some or all of the following institutions and archives:

- Peabody Energy Australia archive
- Registered Aboriginal stakeholders
- NSW Office of Environment and Heritage
- Australian National Library
- Mid-Western Regional Council Library
- Mudgee Historical Society Inc archive



5. PHOTOGRAPHIC RECORD OF SALVAGE

5.1 WCP 96



WCP96 salvaging scarred tree section looking east



WCP96 wrapping sections looking south



WCP96 lifting scarred section looking south



WCP96 wrapping portion 3 looking south



5.2 WCP 97



WCP 97 removing scarred section looking south west



WCP 97 removing grown limbs looking south



WCP 97 removing and wrapping fallen section with scar looking south east



WCP 97 moving fallen section looking south west



5.3 WCP 98



WCP 98 discussing salvage looking east



WCP 98 branch removal looking south east



WCP 98 laying tree down looking south west



WCP 98 removing scarred section looking west



WCP 98 cutting above scar looking south



WCP 98 scarred section on truck



5.4 WCP 196



WCP 196 removing crown branches looking north



WCP 196 wrapping scar section



WCP 196 after removal



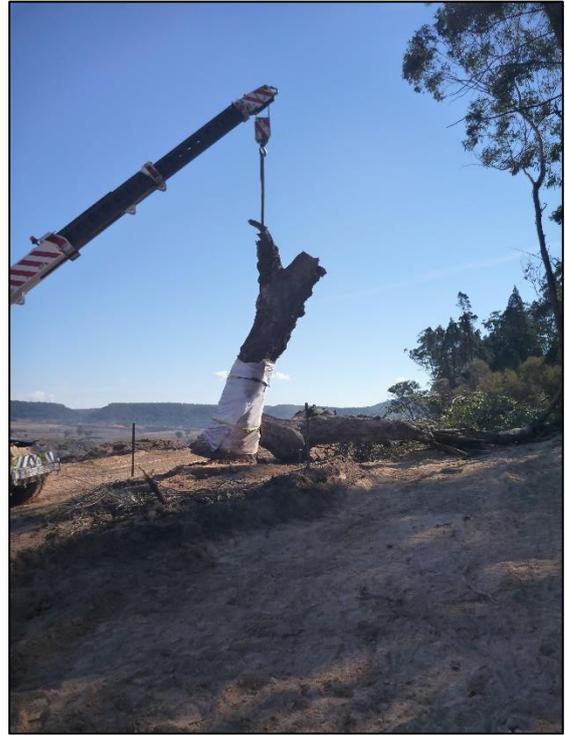
WCP 196 stump after removal



5.5 WCP 197



WCP 197 cutting the base looking north



WCP 197 removing scarred section looking north east



WCP 197 removing scarred section looking north east



WCP 197 stump after removal



6. REFERENCES

- Navin Officer Heritage Consultants (NOHC) 2005 Wilpinjong Coal Project Aboriginal Cultural Heritage Assessment. Report to Resource Strategies on behalf of Wilpinjong Coal Pty Ltd.
- Navin Officer Heritage Consultants (NOHC) 2016 Wilpinjong Coal Mine Aboriginal Cultural Heritage Clearance Works Areas 2, 3 (part), 6, 14, Stem Pad, Pit 5 Monitor Station, Optic Fibre Route (part) and 17 (revised)
- NSW Heritage Office 1998 Heritage Information Series, How to Prepare Archival Records of Heritage Items. NSW Heritage Office, Parramatta.
- Urban Tree Management (UTM) 2013 Report: Arboricultural Assessment of Scarred Tree/s at Wilpinjong Coal Mine, Ulan Wollar Road Wilpinjong New South Wales. Report to Wilpinjong Coal Pty Ltd, Peabody Energy Australia. Reference 15134
- Wilpinjong Coal Pty Ltd. (WCPL) 2005 Wilpinjong Coal Project, Appendix F. Aboriginal Cultural Heritage Assessment. Prepared by Navin Officer Heritage Consultants Pty Ltd.
- Wilpinjong Coal Pty Ltd. (WCPL) 2006 Wilpinjong Coal Project Aboriginal Cultural Heritage Management Plan and North Eastern Wiradjuri Cultural Heritage Management Plan. Prepared by Wilpinjong Coal Pty Ltd.

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