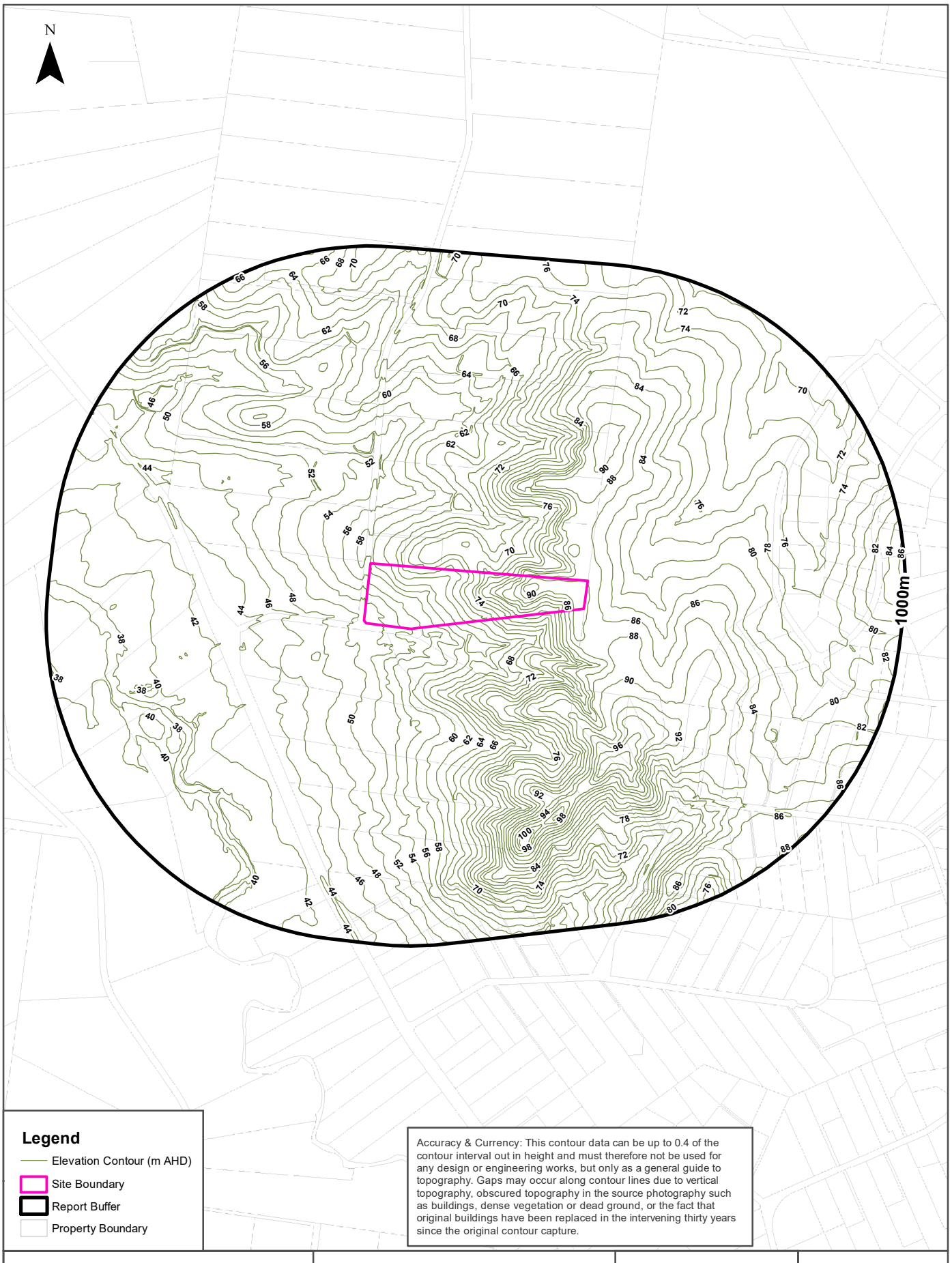
Elevation Contours (m AHD)

290-308 Aldington Road, Kemps Creek, NSW 2178



Hydrogeology & Groundwater

290-308 Aldington Road, Kemps Creek, NSW 2178

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Botany Groundwater Management Zones

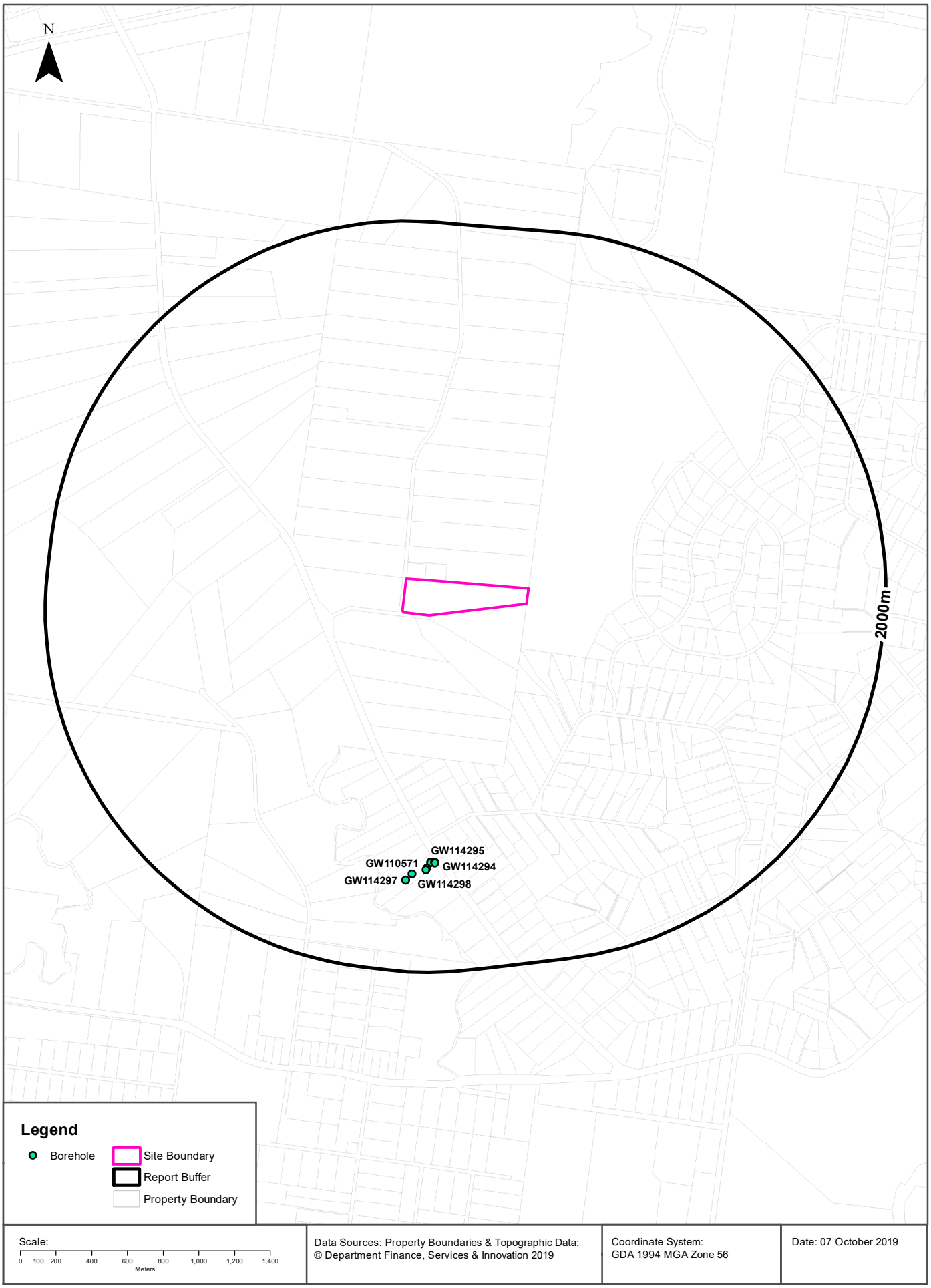
Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
N/A	No records in buffer		

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries

Groundwater Boreholes

290-308 Aldington Road, Kemps Creek, NSW 2178



Hydrogeology & Groundwater

290-308 Aldington Road, Kemps Creek, NSW 2178

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW114295	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	6.00	6.00					1385m	South
GW114294	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	6.00	6.00					1385m	South
GW110570	10BL603558	Bore	Private	Monitoring Bore	Monitoring Bore		25/08/2009	12.00	6.00		4.40			1386m	South
GW110569	10BL603558	Bore	Private	Monitoring Bore	Monitoring Bore		25/08/2009	6.00	12.00		4.40			1390m	South
GW114296	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	6.00	6.00					1417m	South
GW110571	10BL603558	Bore	Private	Monitoring Bore	Monitoring Bore		25/08/2009	12.00	6.00		4.40			1428m	South
GW114298	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	7.00	7.00					1454m	South
GW114297	10BL604605	Bore	Private	Monitoring Bore	Monitoring Bore		28/04/2011	8.00	8.00					1490m	South

Hydrogeology & Groundwater

290-308 Aldington Road, Kemps Creek, NSW 2178

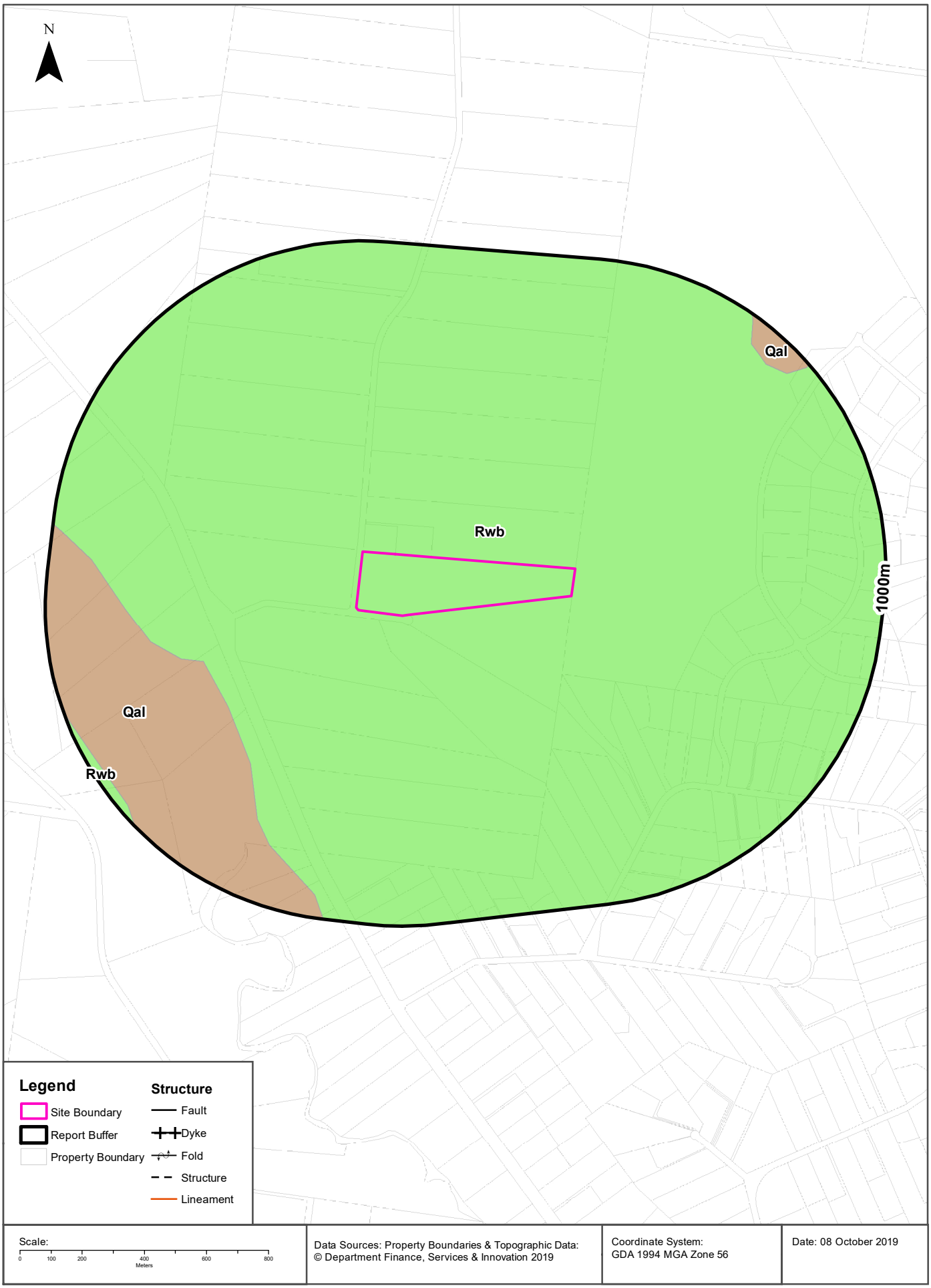
Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

Groundwater No	Drillers Log	Distance	Direction
GW110570	0.00m-1.00m FILL,SILTY CLAY,BROWN 1.00m-6.00m CLAY SILTY,BROWN	1386m	South
GW110569	0.00m-1.00m FILL, SILTY CLAY BROWN 1.00m-6.00m CLAY SILTY, BROWN	1390m	South
GW110571	0.00m-1.00m FILL,SILTY CLAY,BROWN 1.00m-6.00m CLAY SILTY,BROWN	1428m	South

Geology 1:100,000

290-308 Aldington Road, Kemps Creek, NSW 2178



Geology

290-308 Aldington Road, Kemps Creek, NSW 2178

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rwb	Shale, carbonaceous claystone,claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff	Bringelly Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qal	Fine-grained sand, silt and clay				Quaternary		Penrith	1:100,000
Rwb	Shale, carbonaceous claystone,claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff	Bringelly Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

Geological Data Source : NSW Department of Industry, Resources & Energy

Naturally Occurring Asbestos Potential

290-308 Aldington Road, Kemps Creek, NSW 2178

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Soil Landscapes

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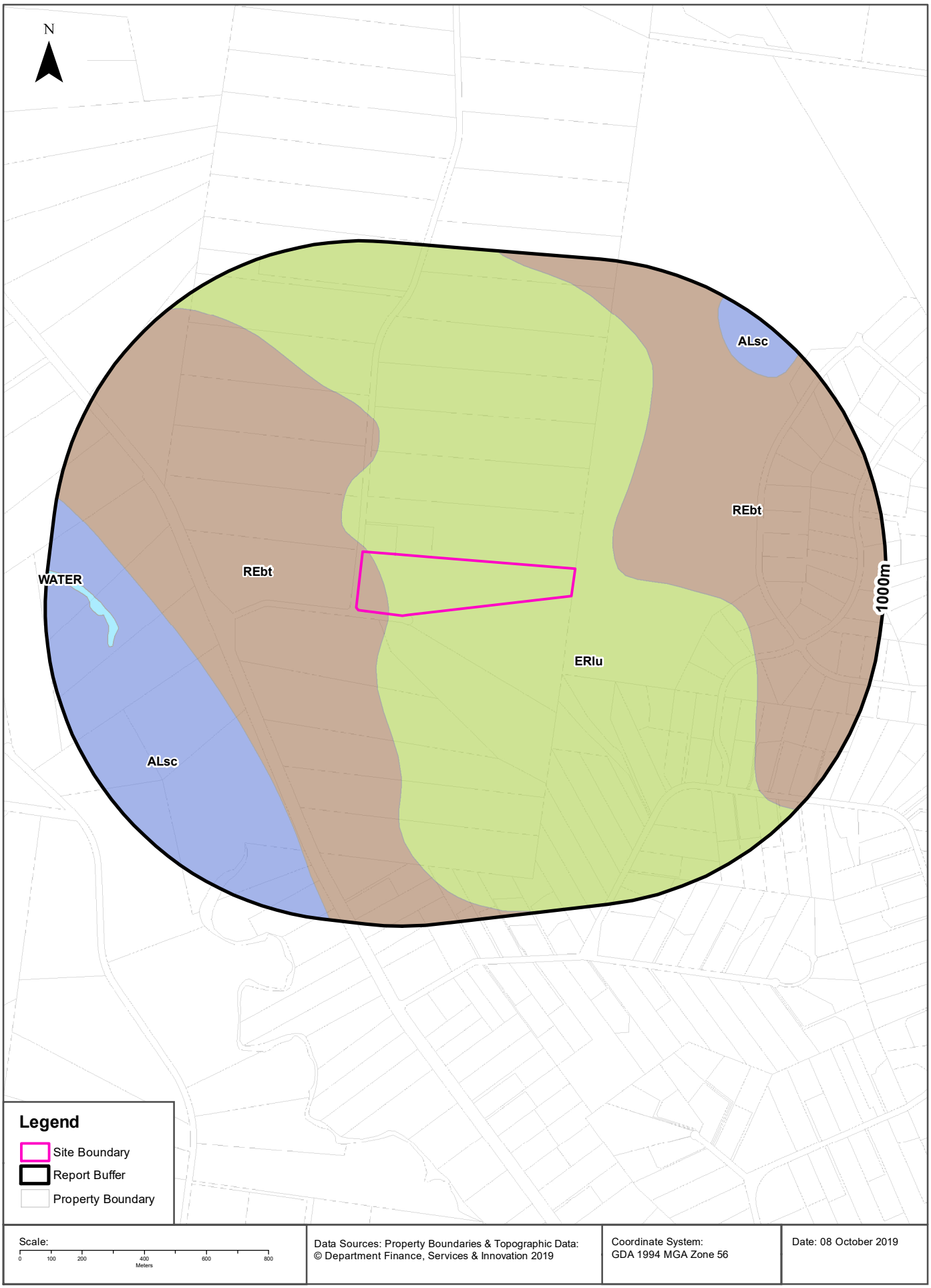


Soils

290-308 Aldington Road, Kemps Creek, NSW 2178

Soil Landscapes

What are the onsite Soil Landscapes?

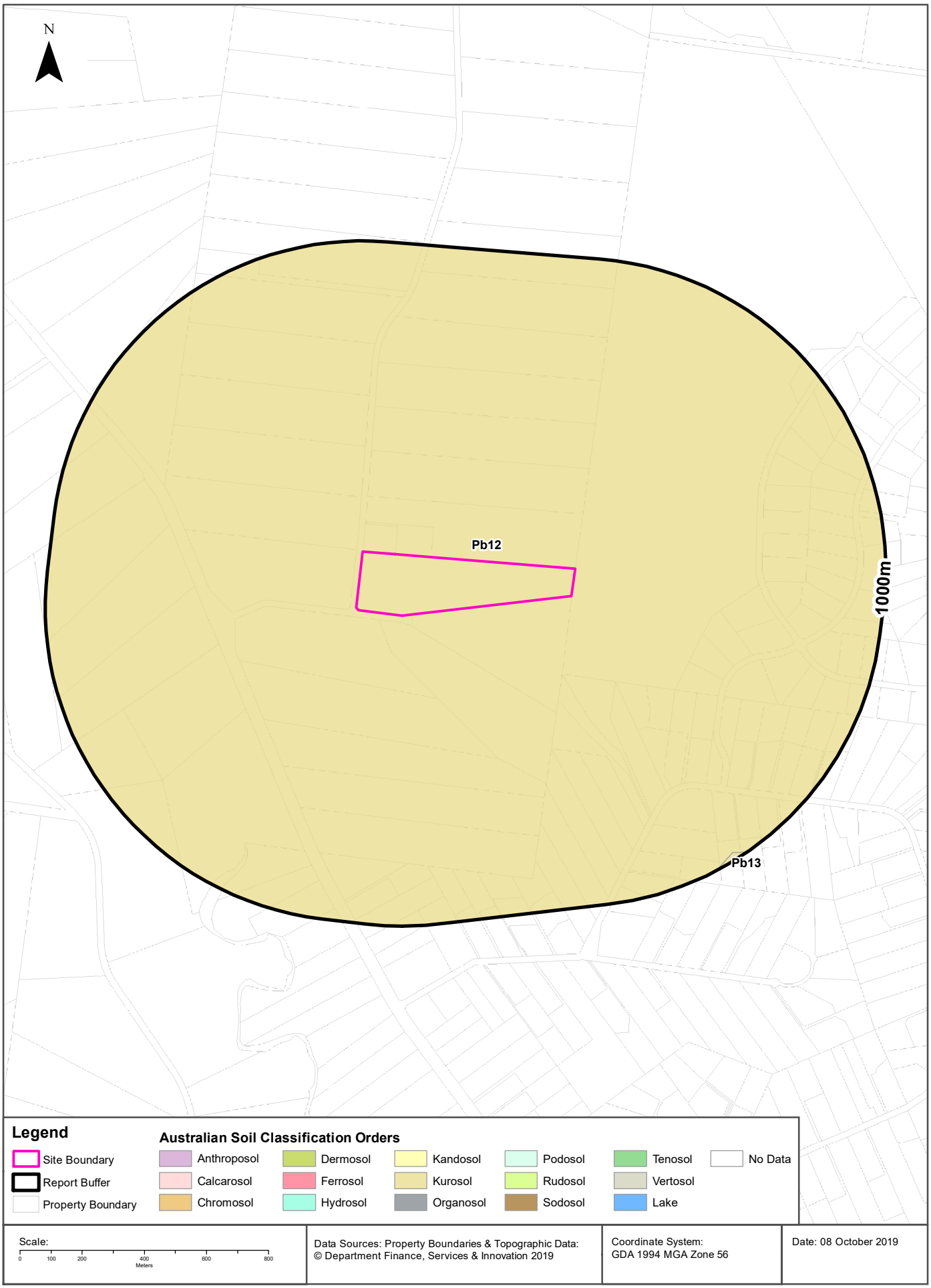
Soil Code	Name	Group	Process	Map Sheet	Scale
ERlu	LUDDENHAM		EROSIONAL	Penrith	1:100,000
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
ALsc	SOUTH CREEK		ALLUVIAL	Penrith	1:100,000
ERlu	LUDDENHAM		EROSIONAL	Penrith	1:100,000
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000
WATER	WATER		WATER	Penrith	1:100,000

Atlas of Australian Soils

290-308 Aldington Road, Kemps Creek, NSW 2178



Soils

290-308 Aldington Road, Kemps Creek, NSW 2178

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance
Pb12	Kurosol	Gently rolling to rounded hilly country with some steep slopes and broad valleys: chief soils are hard acidic red soils (Dr2.21) with hard neutral and acidic yellow mottled soils (Dy3.42 and Dy3.41) on lower slopes and in valleys. Associated are small areas of various soils including (Gn3.54) on some ridges, (Dr3.31) on some slopes; (Dr2.23) in saddles and some mid-slope positions, and some low- lying swampy areas of (Uf6) soils and (Uc1.2) soils with peaty surfaces. Small areas of other soils such as (Db1.2) are likely throughout.	0m
Pb13	Kurosol	Ridge and valley country of gently undulating ridge tops and steep side slopes often with slumping, also rounded hilly to steep hilly areas and relatively narrow valleys: chief soils are hard acidic red soils (Dr2.21) with hard acidic yellow mottled soils (Dy3.41); in places some ironstone gravels occur in both these soils. Associated are hard neutral and alkaline red soils (Dr2.22 and Dr2.23) in saddles and some mid-slope positions; (Dy3.42 and Dy3.43) soils, usually in depressions; and small areas of undescribed soils in wet soaks and valley areas. Small areas of other soils are likely throughout.	974m

Acid Sulfate Soils

290-308 Aldington Road, Kemps Creek, NSW 2178

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

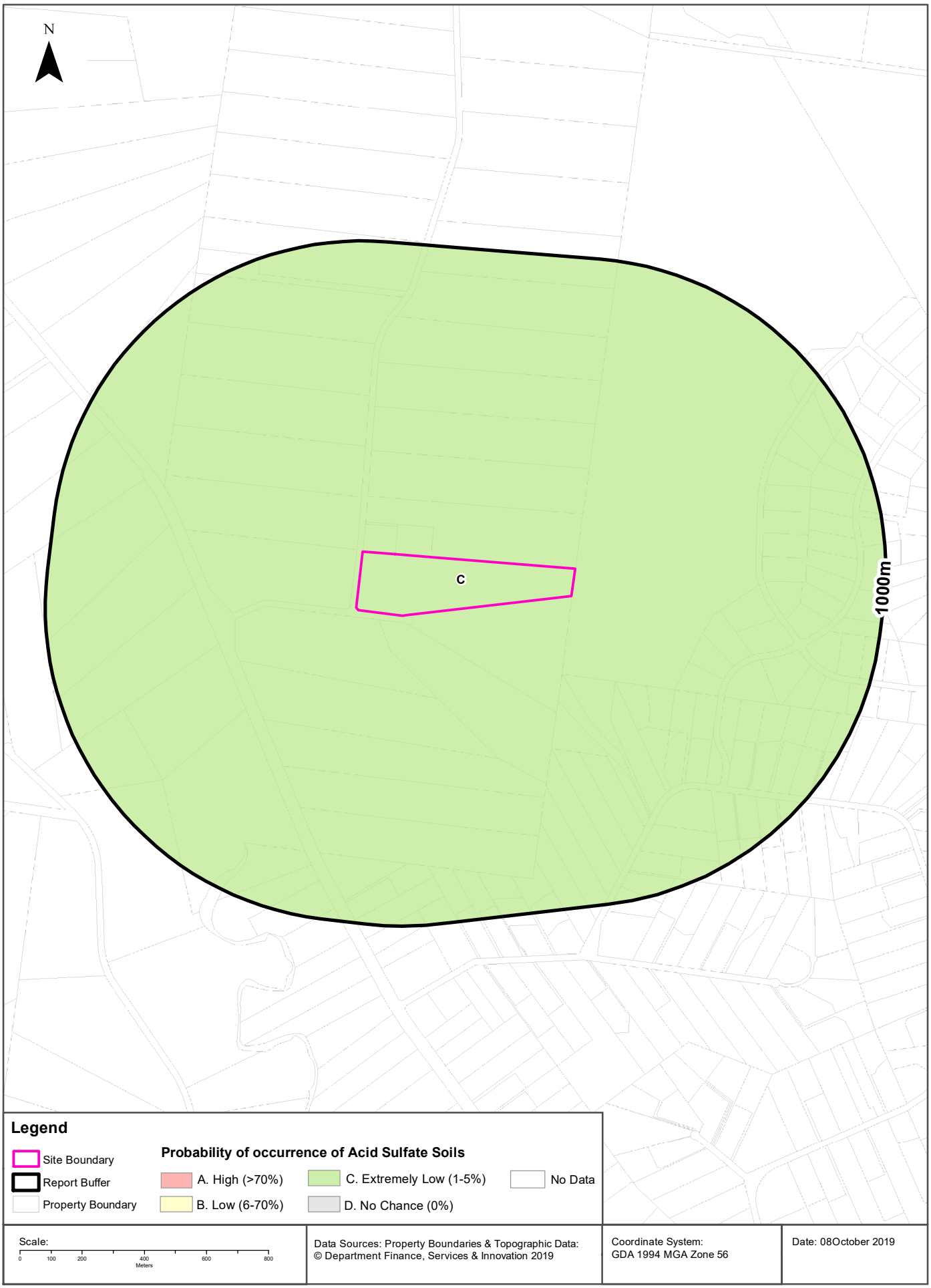
Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

290-308 Aldington Road, Kemps Creek, NSW 2178



Acid Sulfate Soils

290-308 Aldington Road, Kemps Creek, NSW 2178

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m

Dryland Salinity

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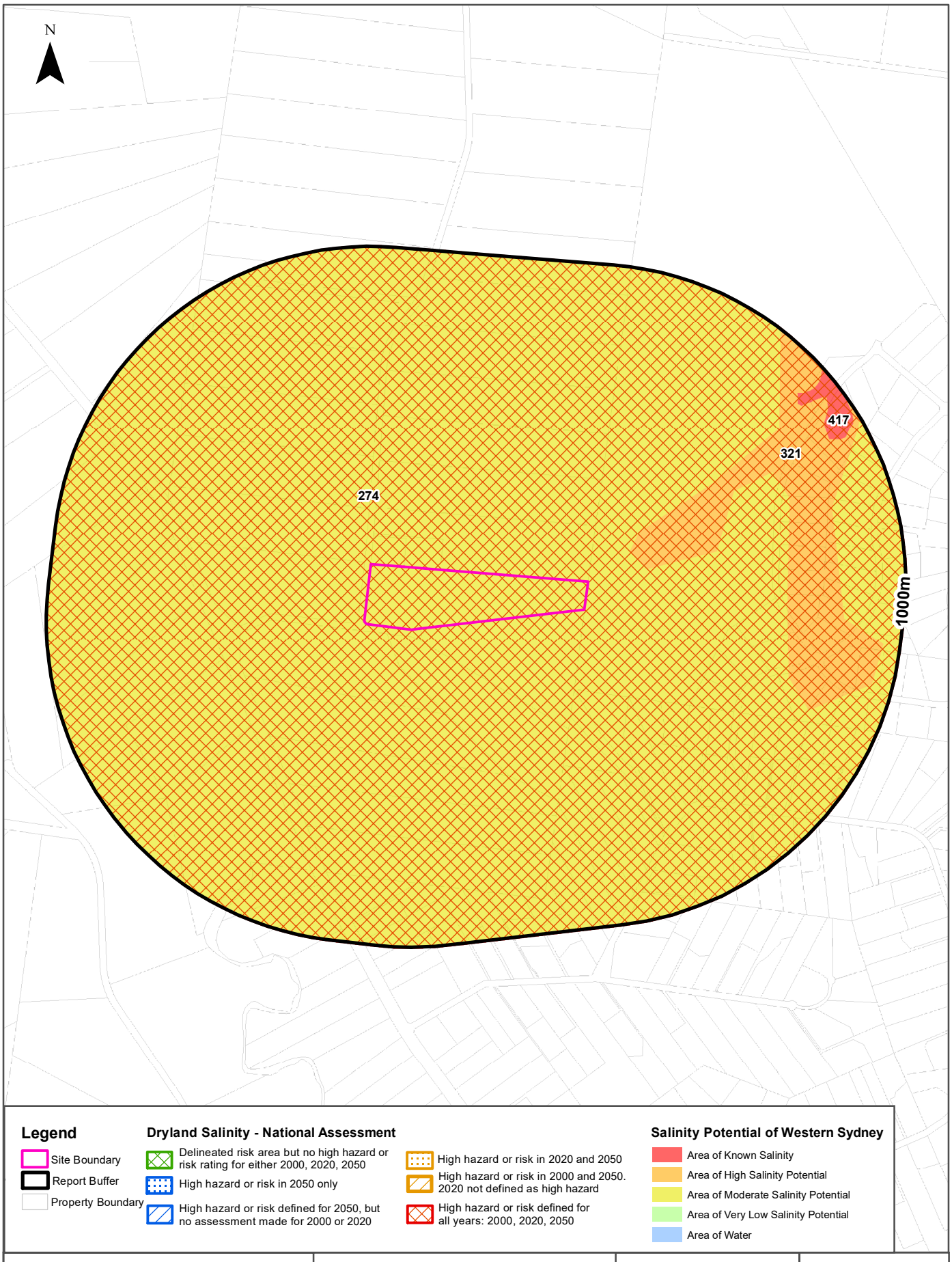


Dryland Salinity

290-308 Aldington Road, Kemps Creek, NSW 2178

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

Is there Dryland Salinity - National Assessment data within the dataset buffer?

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	Onsite

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
274	MODERATE	Area of Moderate Salinity Potential	0m	Onsite
321	HIGH	Area of High Salinity Potential	161m	North
417	SALT	Area of Known Salinity	867m	North East

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage

Mining Subsidence Districts

290-308 Aldington Road, Kemps Creek, NSW 2178

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

State Environmental Planning Policy

290-308 Aldington Road, Kemps Creek, NSW 2178

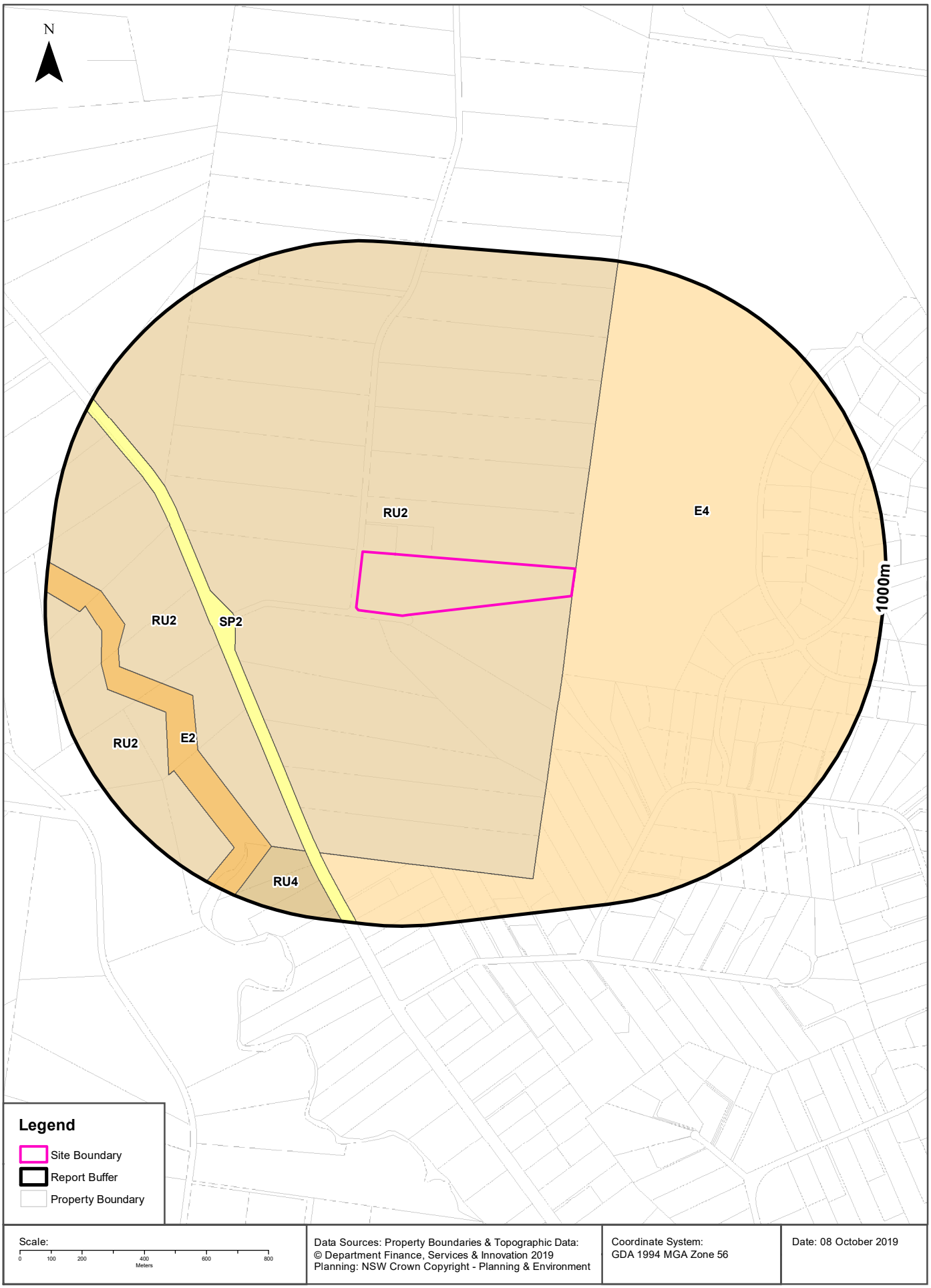
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer							

EPI Planning Zones

290-308 Aldington Road, Kemps Creek, NSW 2178



Environmental Planning Instrument

290-308 Aldington Road, Kemps Creek, NSW 2178

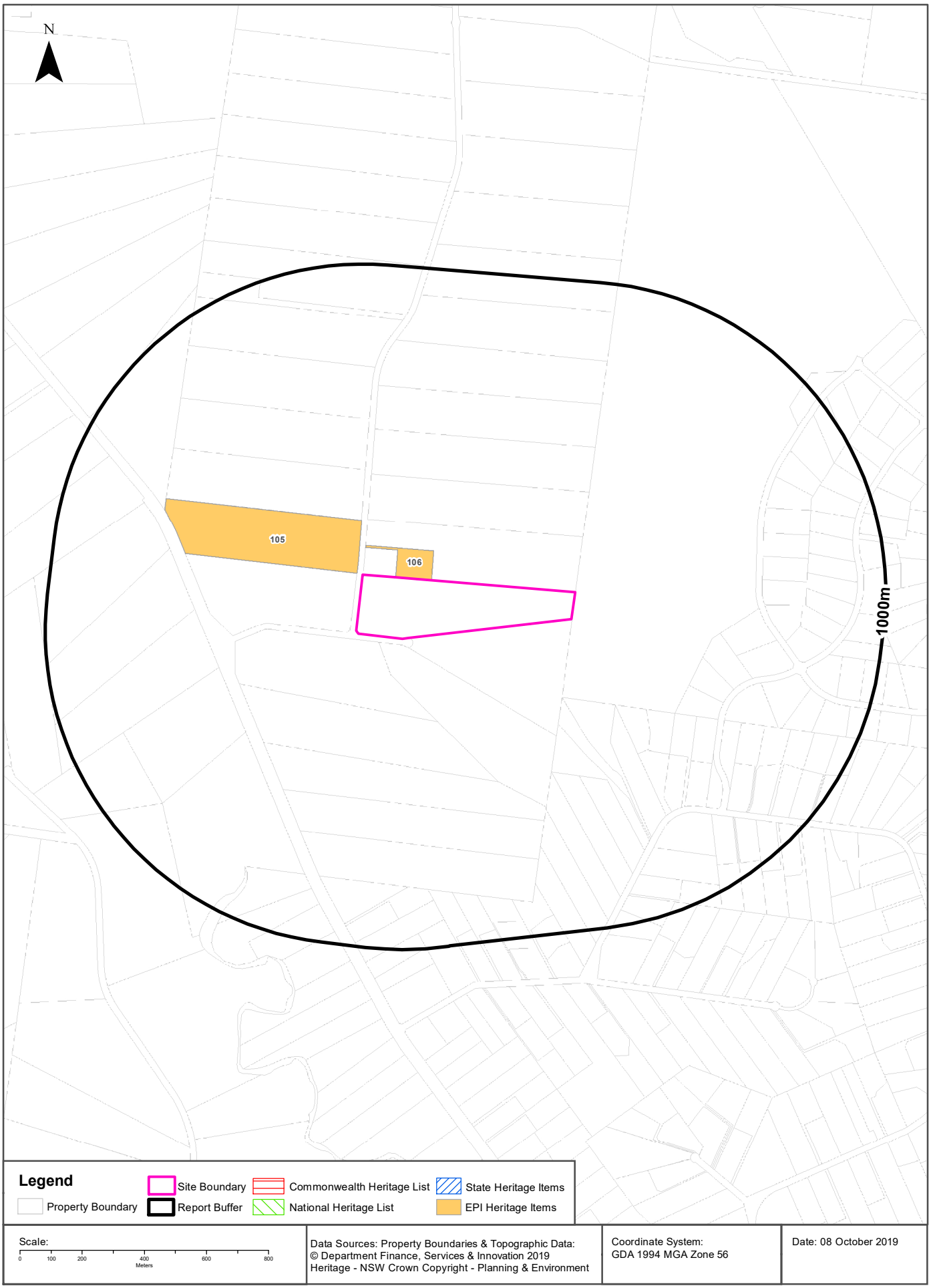
Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU2	Rural Landscape		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		0m	Onsite
E4	Environmental Living		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		0m	South East
SP2	Infrastructure	Classified Road	Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		391m	West
RU2	Rural Landscape		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		453m	North West
E2	Environmental Conservation		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		598m	West
RU2	Rural Landscape		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		699m	South West
RU4	Primary Production Small Lots		Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019		793m	South

Heritage Items

290-308 Aldington Road, Kemps Creek, NSW 2178



Heritage

290-308 Aldington Road, Kemps Creek, NSW 2178

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

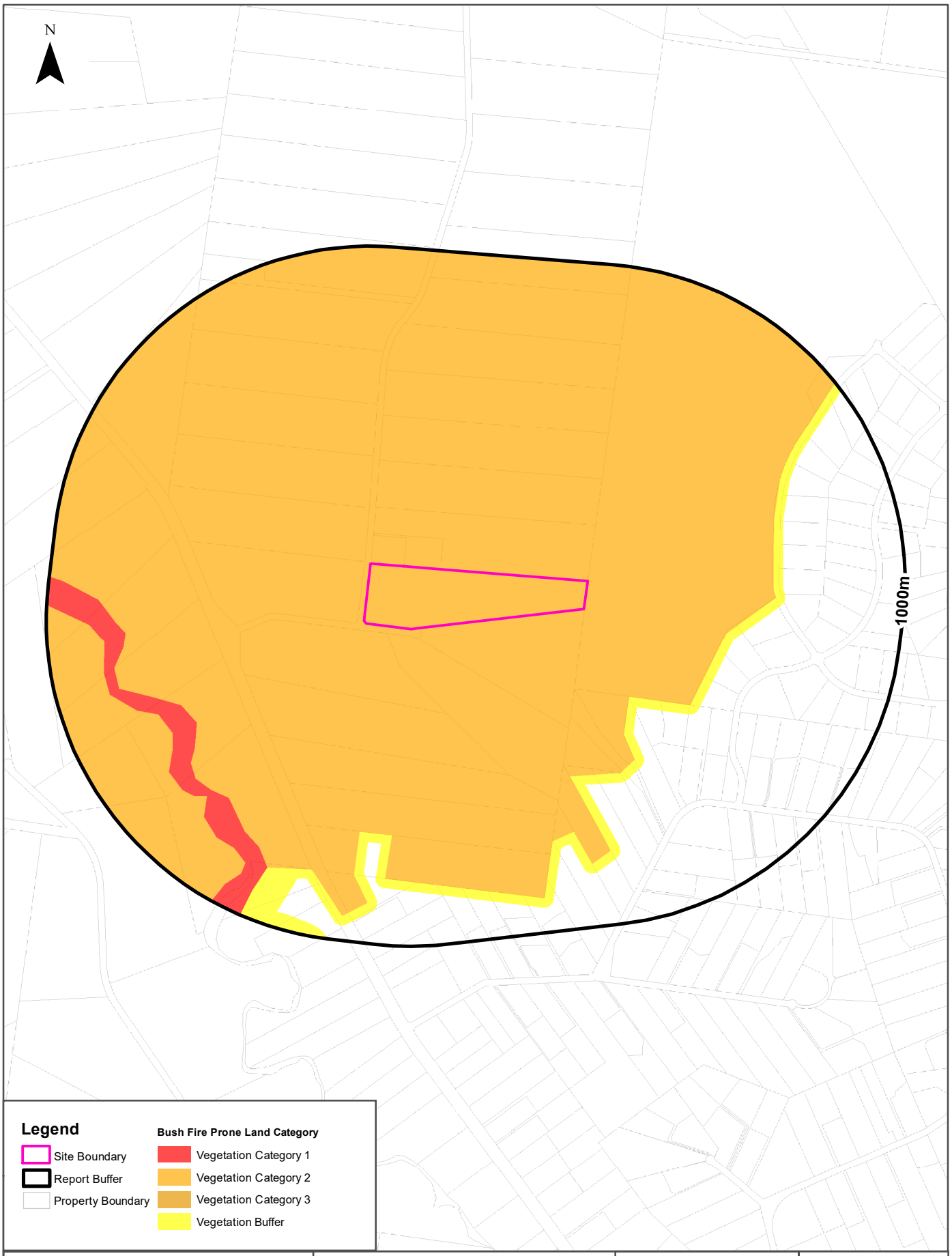
What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
106	Farmhouse	Item - General	Local	Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019	0m	North West
105	Gateposts to Colesbrook	Item - General	Local	Penrith Local Environmental Plan 2010	22/09/2010	22/09/2010	27/09/2019	20m	West

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards - Bush Fire Prone Land

290-308 Aldington Road, Kemps Creek, NSW 2178



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2019. Property Boundaries: © Department Finance, Services & Innovation 2019

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 October 2019

Natural Hazards

290-308 Aldington Road, Kemps Creek, NSW 2178

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 2	0m	Onsite
Vegetation Buffer	308m	South West
Vegetation Category 1	616m	South West

Ecological Constraints - Remnant Vegetation of the Cumberland Plain

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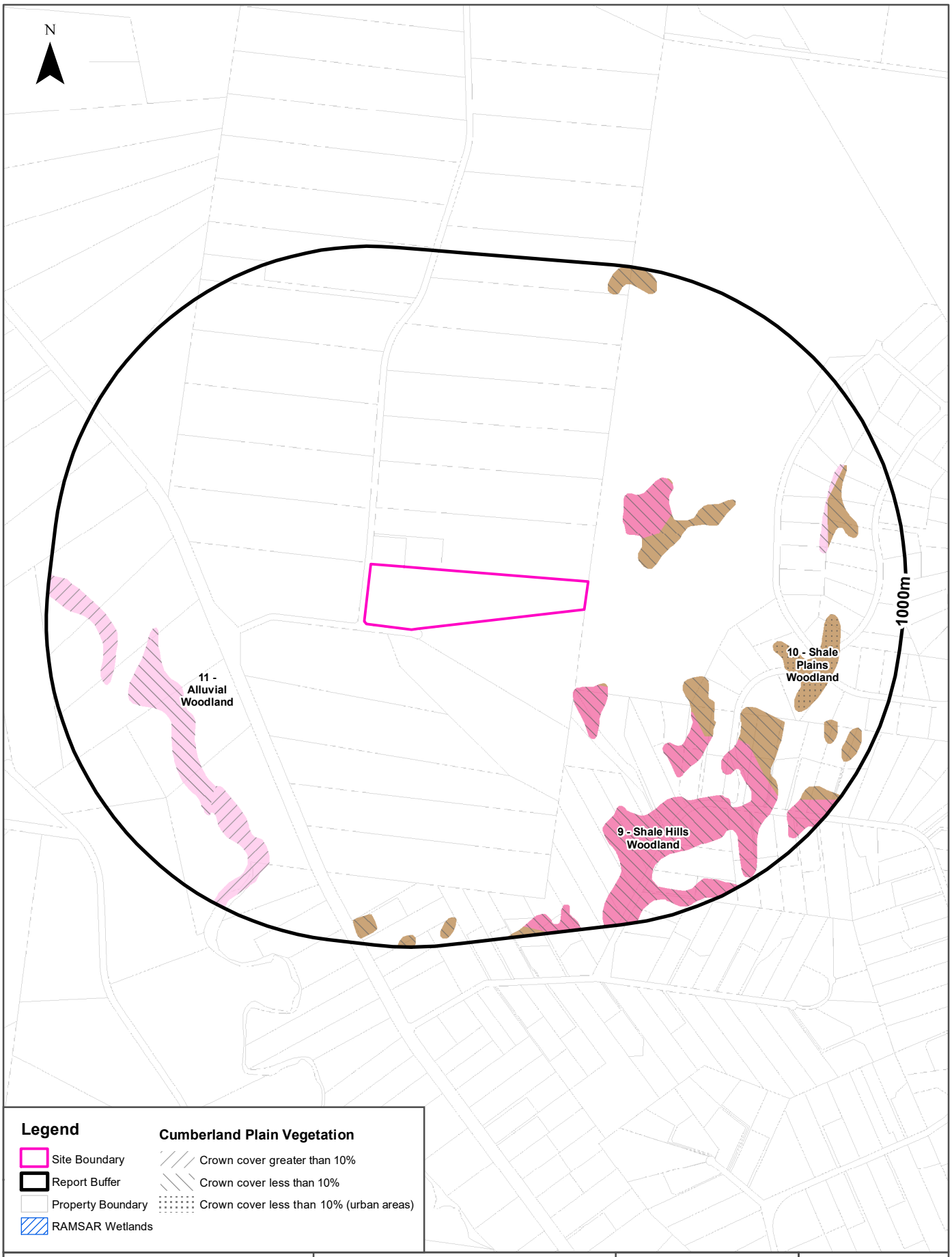


Ecological Constraints

290-308 Aldington Road, Kemps Creek, NSW 2178

Remnant Vegetation of the Cumberland Plain

What remnant vegetation of the Cumberland Plain exists within the dataset buffer?

Description	Crown Cover	Distance	Direction
10 - Shale Plains Woodland	Crown cover less than 10%	170m	East
9 - Shale Hills Woodland	Crown cover less than 10%	192m	North East
10 - Shale Plains Woodland	Crown cover less than 10% (urban areas)	601m	East
11 - Alluvial Woodland	Crown cover less than 10%	610m	South West
11 - Alluvial Woodland	Crown cover greater than 10%	684m	South West

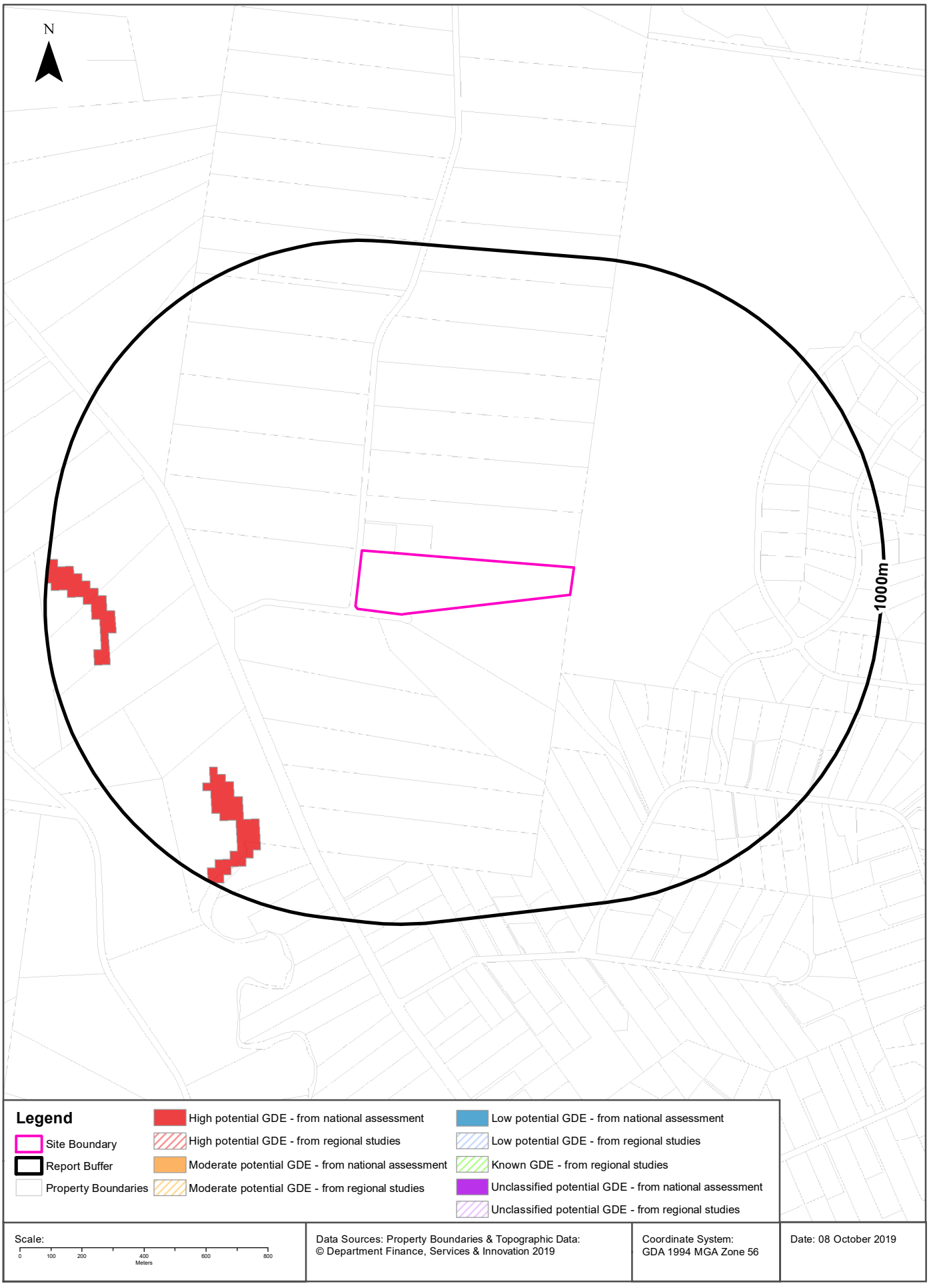
Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

290-308 Aldington Road, Kemps Creek, NSW 2178



Ecological Constraints

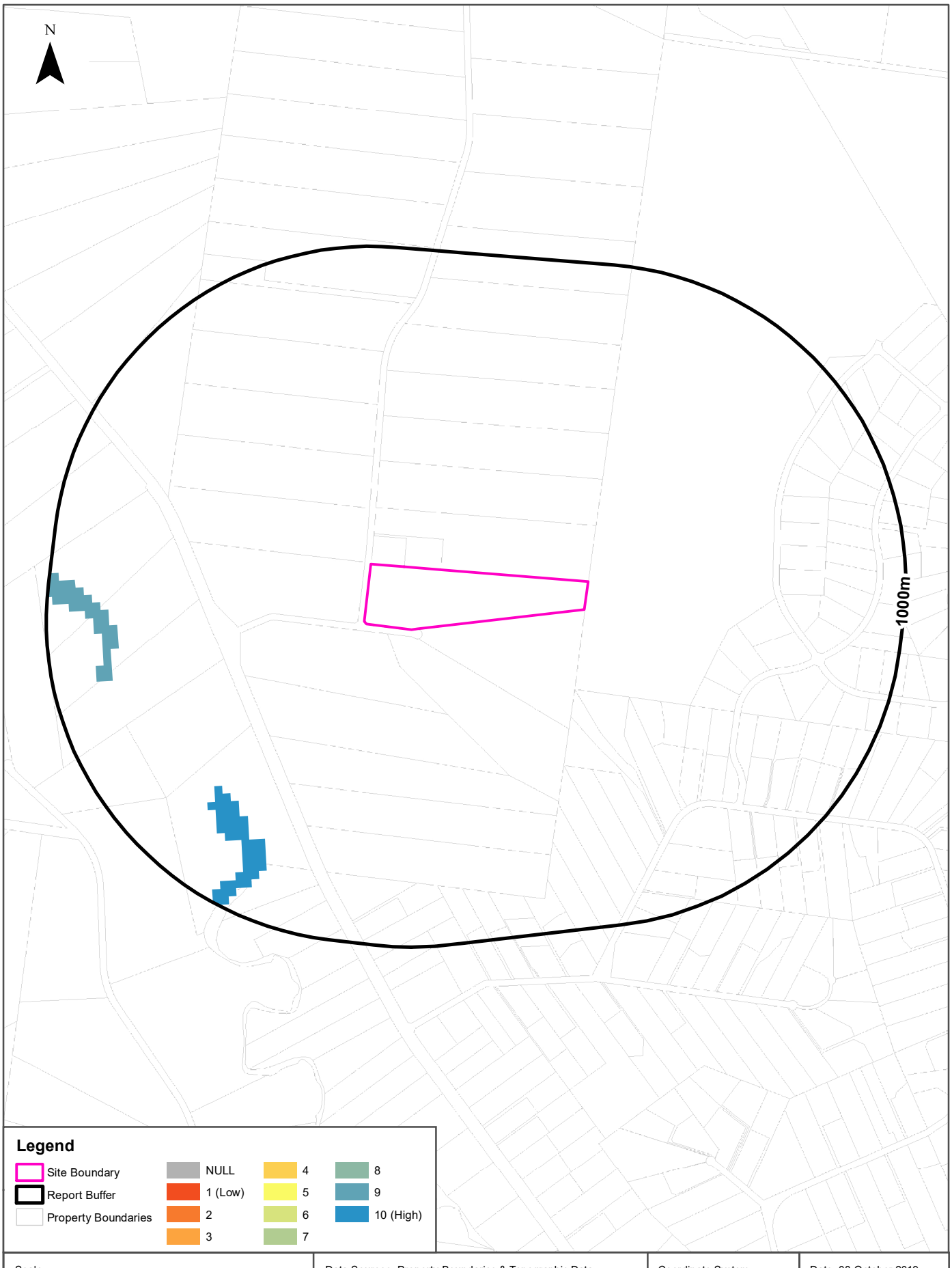
290-308 Aldington Road, Kemps Creek, NSW 2178

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	High potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	680m

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

290-308 Aldington Road, Kemps Creek, NSW 2178



Ecological Constraints

290-308 Aldington Road, Kemps Creek, NSW 2178

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	10	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	680m
Terrestrial	9	Undulating to low hilly country, mainly on shale.	Vegetation	Unconsolidated sedimentary	775m

Ecological Constraints

290-308 Aldington Road, Kemps Creek, NSW 2178

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardea ibis	Cattle Egret	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Merops ornatus	Rainbow Bee-eater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Neophema splendida	Scarlet-chested Parrot	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Plegadis falcinellus	Glossy Ibis	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Todiramphus chloris	Collared Kingfisher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Gastropoda	Meridolum corneovirens	Cumberland Plain Land Snail	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Lucasium stenodactylum	Crowned Gecko	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Argyrotegium nitidulum	Shining Cudweed	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Cynanchum elegans	White-flowered Wax Plant	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Dillwynia tenuifolia		Endangered Population, Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Dillwynia tenuifolia		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Not Sensitive	Extinct	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Marsdenia viridiflora subsp. viridiflora	Native Pear	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Persoonia nutans	Nodding Geebung	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pimelea curviflora var. curviflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Pimelea spicata	Spiked Rice-flower	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pterostylis saxicola	Sydney Plains Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	Pultenaea parviflora		Endangered	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

Data obtained 04/10/2019

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      (ii) content which is derived from content described in paragraph (i);
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   (h) the Report does not include any information relating to the actual state or condition of the Property;
   (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
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   (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
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   (a) acknowledges that the Lotsearch (nor any of its officers, employees or agents), nor any of its Third Party Content Supplier have any liability to it under or in connection with the

Report or these Terms;

(b) waives any right it may have to claim against Third Party Content Supplier in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms; and

(c) releases each Third Party Content Supplier from any claim it may have otherwise had in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms.

5. The End User acknowledges that any Third Party Supplier shall be entitled to plead the benefits conferred on it under clause 4, despite not being a party to these terms.
6. End User must not remove any copyright notices, trade marks, digital rights management information, other embedded information, disclaimers or limitations from the Report or authorise any person to do so.
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8. To the extent permitted by law and subject to paragraph 9, all implied terms, representations and warranties whether statutory or otherwise relating to the subject matter of these Terms other than as expressly set out in these Terms are excluded.
9. Subject to paragraph 6, Lotsearch excludes liability to End User for loss or damage of any kind, however caused, due to Lotsearch's negligence, breach of contract, breach of any law, in equity, under indemnities or otherwise, arising out of all acts, omissions and events whenever occurring.
10. Lotsearch acknowledges that if, under applicable State, Territory or Commonwealth law, End User is a consumer certain rights may be conferred on End User which cannot be excluded, restricted or modified. If so, and if that law applies to Lotsearch, then, Lotsearch's liability is limited to the greater of an amount equal to the cost of resupplying the Report and the maximum extent permitted under applicable laws.
11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:

    (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or

    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

    irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
12. These Terms are subject to New South Wales law.

APPENDIX E

PLANNING CERTIFICATE

PENRITH CITY COUNCIL

Civic Centre
601 High Street, Penrith

PO Box 60 Penrith NSW 2751

Telephone: 02 4732 7777
Facsimile: 02 4732 7958

Email: pencit@penrithcity.nsw.gov.au

PLANNING CERTIFICATE UNDER SECTION 10.7

Environmental Planning and Assessment Act, 1979

Property No: 104899
Your Reference:
Contact No:

Issue Date: 02 October 2019
Certificate No: 19/03963

Issued to: Alliance Geotechnical
10 Welder Road
SEVEN HILLS

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND **Parish: MELVILLE**

Location: 290-308 Aldington Road KEMPS CREEK NSW 2178
Land Description: Lot 13 DP 253503

- PART 1 PRESCRIBED MATTERS –

In accordance with the provisions of Section 10.7(2) of the Act the following information is furnished in respect of the abovementioned land:

1 *NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs*

1(1) The name of each environmental planning instrument that applies to the carrying out of development on the land:

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):

State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)
State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)
State Environmental Planning Policy No.21 - Caravan Parks.
State Environmental Planning Policy No.33 - Hazardous and Offensive Development.

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State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.
State Environmental Planning Policy No.55 - Remediation of Land.
State Environmental Planning Policy No.64 - Advertising and Signage.
State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.
State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
State Environmental Planning Policy (State Significant Precincts) 2005.
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2013.
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.
State Environmental Planning Policy (Infrastructure) 2007.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.
State Environmental Planning Policy (Affordable Rental Housing) 2009.
State Environmental Planning Policy (State and Regional Development) 2011.
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017.
State Environmental Planning Policy (Education Establishments and Child Care Centre Facilities) 2017.
State Environmental Planning Policy (Primary Production and Rural Development) 2019.
State Environmental Planning Policy (Western Sydney Employment Area) 2009 applies to the land.

1(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act:

An Annual Update Amendment Planning Proposal applies to this land.

The Planning Proposal seeks to resolve several policy changes, contemporise certain elements and undertake "housekeeping" changes which are minor in nature. (See www.penrithcity.nsw.gov.au for details).

Draft State Environmental Planning Policy (Western Sydney Corridors) may apply to the land. Further information is available here: https://www.transport.nsw.gov.au/corridors.

On 22 June 2018, the NSW Government announced changes to the recommended alignments for the Western Sydney corridors, including continuing with the previously gazetted 1951 corridor for the Bells Line of Road Castlereagh Connection.

Draft State Environmental Planning Policy (Primary Production & Rural Development) applies to the land.

Draft State Environmental Planning Policy (Environment) applies to the land.

Draft State Environmental Planning Policy (Remediation of Land) applies to the land.

Draft Standard Instrument (Local Environmental Plans) Order 2006 applies to the land.

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Draft State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 applies to the land.

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

2 *ZONING AND LAND USE UNDER RELEVANT LEPs*

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone RU2 Rural Landscape
(Penrith Local Environmental Plan 2010)

1 Objectives of zone

To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
To maintain the rural landscape character of the land.
To provide for a range of compatible land uses, including extensive agriculture.
To minimise conflict between land uses within the zone and land uses within adjoining zones.
To preserve and improve natural resources through appropriate land management practices.
To ensure development is compatible with the environmental capabilities of the land and does not unreasonably increase the demand for public services or public facilities.

2 Permitted without consent

Extensive agriculture; Home occupations

3 Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Aquaculture; Building identification signs; Business identification signs; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Farm buildings; Flood mitigation works; Forestry; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural supplies; Schools; Secondary dwellings; Stock and sale yards; Tourist and visitor accommodation; Veterinary hospitals

4 Prohibited

Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

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Flood planning

All or part of the subject land is identified in Penrith Local Environmental Plan 2010 (PLEP 2010) Clause 7.2 Flood Planning. Development consent is required for any development on land to which Clause 7.2 of PLEP 2010 applies.

Rural subdivision

Under the terms of Clause 4.2 of Penrith Local Environmental Plan 2010 land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone RU6 Transition may, with development consent, be subdivided for the purpose of primary production to create a lot of a size that is less than the minimum size shown on the Penrith Local Environmental Plan 2010 Lot Size Map in relation to that land. Such a lot cannot be created if an existing dwelling would, as a result of the subdivision, be situated on the lot; and a dwelling cannot be erected on such a lot.

Residential development and subdivision prohibited in certain rural, residential and environment protection zones

Under the terms of Clause 4.2A of Penrith Local Environmental Plan 2010 (PLEP 2010) on land within Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots, Zone RU5 Village, Zone R5 Large Lot Residential, Zone E3 Environmental Management or Zone E4 Environmental Living development consent must not be granted for the erection of a dwelling house on a lot resulting from the closure of part or all of a road, whether before or after the commencement of this Plan. This requirement does not apply to a lot created by the consolidation of a lot resulting from a road closure with an adjoining lot that did not result from a road closure.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

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Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 9: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 10: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 11: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

2(e) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed:

(Information is provided in this section only if any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

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3 COMPLYING DEVELOPMENT

HOUSING CODE

(The Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

RURAL HOUSING CODE

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Rural Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

LOW RISE MEDIUM DENSITY HOUSING CODE

(The Low Rise Medium Density Housing Code only applies if the land is within Zones R1, R2, R3 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Low Rise Medium Density Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

Please note that Council has been deferred from the application of Part 3B of the Low Rise Medium Density Housing Code until 1 July 2020. That Part will not apply to Penrith Local Government Area during this time.

GREENFIELD HOUSING CODE

(The Greenfield Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument, and if the land is identified as a Greenfield Housing Code Area by the Greenfield Housing Code Area Map.)

Complying development under the Greenfield Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones, and if the land is identified as a Greenfield Housing Code Area by the Greenfield Housing Code Area Map.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

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GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE

(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Commercial and Industrial (New Buildings and Alterations) Code **may** be carried out on the land if the land is within one of the abovementioned zones.

FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

The land is not proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961.

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is not affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or

(b) an environmental planning instrument, or
(c) a resolution of council.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies
The land is affected by the Asbestos Policy adopted by Council.
The land is not affected by any other policy adopted by the council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

(b) Other Public Authority Policies
The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.
The land is not affected by a policy adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council, that restricts the development of the land because of the likelihood of land slip, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) Development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) (if such uses are permissible on the land) is subject to flood related development controls.

(2) Development on the land or part of the land for industrial or commercial purposes (if such uses are permissible on the land) is subject to flood related development controls.
Development on the land or part of the land for purposes other than industrial or commercial, or for purposes other than those referred to in (1) above, will be considered on a merits based approach and flood related development controls may apply.

Note: The land is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. On application and payment of the prescribed fee Council may be able to provide in writing a range of advice in regard to the extent of flooding affecting the property.

8 LAND RESERVED FOR ACQUISITION

No environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park).

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*. (Note. biodiversity certified land includes land certified under Part 7AA of the *Threatened Species Conservation Act 1995* that is taken to be certified under Part 8 of the *Biodiversity Conservation Act 2016*.))

10 BIODIVERSITY STEWARDSHIP SITES

(Information is provided in this section only if Council has been notified by the Chief Executive of the Office of Environment and Heritage that the land is land to which a biobanking stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* relates. Note. Biodiversity stewardship agreements include biobanking agreements under Part 7A of the *Threatened Species Conservation Act 1995* that are taken to be biodiversity stewardships agreements under Part 5 of the *Biodiversity Conservation Act 2016*)

10A NATIVE VEGETATION CLEARING SET ASIDES

(Information is provided in this section only if Council has been notified of the existence of a set aside area by Local Land Services or it is registered in the public register under which section 60ZC of the *Local Land Services Act 2013* relates).

11 BUSH FIRE PRONE LAND

All of the land is identified as bush fire prone land according to Council records. Guidance as to restrictions that may be placed on the land as a result of the land being bush fire prone can be obtained by contacting Council. Such advice would be subject to further requirements of the NSW Rural Fire Services.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan approved under the *Native Vegetation Act 2003* applies and continues in force.)

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13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only if there is a direction by the Minister in force under section 75P(2)(c1) of the Act (repealed on 1st October 2011) that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (seniors housing), of which the council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

(a) there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land; and/or

(b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

PENRITH CITY COUNCIL

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PLANNING CERTIFICATE UNDER SECTION 10.7

Environmental Planning and Assessment Act, 1979

NOTE: The following matters are prescribed by section 59(2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate

(a) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 - a copy of which has been provided to Council.)

Note: Section 10.7(5) information for this property may contain additional information regarding contamination issues.

20 LOOSE FILL ASBESTOS INSULATION

(Information is provided in this section only if there is a residential premises listed on the register of residential premises that contain or have contained loose-fill asbestos insulation (as required by Division 1A of Part 8 of the Home Building Act 1989))

21 AFFECTED BUILDING NOTICES AND BUILDING PRODUCT RECTIFICATION ORDERS

(Information is provided in this section only if Council is aware of any "affected building notice" and/or a "building product rectification order" in force for the land).

Note: The Environmental Planning and Assessment Amendment Act 2017 commenced operation on the 1 March 2018. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017, and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

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PLANNING CERTIFICATE UNDER SECTION 10.7

Environmental Planning and Assessment Act, 1979

10.7(5) Certificate
This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 10.7(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 10.7(6) which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate.

Note:

- Council's 10.7(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au . Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.

* Threatened Species Conservation Act 1995

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

* Agricultural Activities Within Rural Areas

This property is located in a rural area and there may be certain agricultural activities occurring that some people may find offensive (for example noise, dust and odours). This should be considered if you purchase the subject property or build a dwelling thereon.
If you do purchase the subject property or build a dwelling, the potential impact that your activities (for example pets, inadequate fencing, drainage, litter and poor weed control) might have on the agricultural activities in the area should also be considered.

* Scenic and Landscape Values

The land is identified as "Land with Scenic and Landscape Values" on the Penrith Local Environmental Plan 2010 Scenic and Landscape Values Map. See Clause 7.5 of Penrith Local Environmental Plan 2010 and Chapter C1 Site Planning and Design of Penrith Development Control Plan 2014.

* Preservation of Trees and Vegetation

See Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

* Dual Occupancy and Secondary Dwellings Controls

See Clause 7.10 of Penrith Local Environmental Plan 2010 for specific controls relating to dual occupancy and secondary dwellings in Zones RU1, RU2, RU4, E3 and E4.

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PLANNING CERTIFICATE UNDER SECTION 10.7

Environmental Planning and Assessment Act, 1979

* Development Control Plan General Information

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.

The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park
- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair,
- St Marys / St Marys North, and
- Sydney Science Park.

Penrith Development Control Plan 2014 may be accessed at https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/

*** Western Sydney Airport**

The land the subject of this certificate is in the vicinity of the proposed Badgery's Creek airport site and is located within the Australian Noise Exposure Forecast (ANEF) shown on the map in Appendix U of the 1985 draft environmental impact statement for the second Sydney Airport.
The land is affected by the **20 - 25 ANEF**.
In regard to land affected by the ANEF Clause 7.9 of Penrith Local Environmental Plan No.2010 states:

"**7.9 Development of land in the flight paths of the site reserved for the proposed Second Sydney Airport**

(1) The objective of this clause is to ensure that development in the vicinity of the proposed Badgery's Creek airport site:
  (a) has regard to the use or potential future use of the site as an airport, and
  (b) does not hinder or have any other adverse impact on the development or operation of an airport on that site.

(2) This clause applies to development that:
  (a) is on land that:
    (i) is near the proposed Badgery's Creek airport site, and
    (ii) is in an ANEF contour of 20 or greater, and
  (b) the consent authority considers is likely to be adversely affected by aircraft noise.

(3) Before determining a development application for development to which this clause applies, the consent authority:
  (a) must consider whether the development will result in an increase in the number of dwellings or people affected by aircraft noise, and
  (b) must consider the location of the development in relation to the criteria set out in Table 2.1 (Building Site Acceptability Based on ANEF Zones) in AS 2021-2000, and
  (c) must be satisfied that the development will meet AS 2021-2000 with respect to interior noise levels for the purposes of:
    (i) if the development will be in an ANEF contour or 20 or greater - child care centres, educational establishments, entertainment facilities, hospitals, places of public worship, public administration buildings or residential accommodation, and
    (ii) if the development will be in an ANEF contour of 25 or greater - commercial premises, hostels or hotel or motel accommodation.

(4) In this clause:
  ANEF contour means a noise exposure contour shown as an ANEF contour on the map in Appendix U of the draft environmental impact statement for the Second Sydney Airport, copies of which are deposited in the Office of the Council and of the Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government.
  AS 2021-2000 means AS 2021-2000, *Acoustics-Aircraft noise intrusion-Building siting and construction."*

(Note: The Australian Government announced on 15 April 2014 that Badgerys Creek will be the site for a new airport for Western Sydney. On 12 December 2016, the Government announced the approval of the Airport Plan, authorising Stage 1 of the Western Sydney Airport. Stage 1 comprises a single runway and facilities to cater for up to 10 million passengers a year. This approval follows an assessment of the Airport Plan and its Environmental Impact Statement by the Environment Minister. Enquiries regarding the Western Sydney

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PLANNING CERTIFICATE UNDER SECTION 10.7

Environmental Planning and Assessment Act, 1979

Airport should be made with the Department of Infrastructure and Regional Development. (Website: <http://westernsydneyairport.gov.au>)).

Warwick Winn
General Manager

PER

Please note:
Certain amendments to the Environmental Planning and Assessment Act 1979 No 203 (Act) commenced on 1 March 2018.
The Environmental Planning and Assessment (Amendment) Act 2017 No 60 makes structural changes to the Act and, as a consequence, the Act has been renumbered in a decimal format. For example, Section 149 Planning Certificates have become Section 10.7 Certificates. Some of the information in this certificate may refer to the previous version of the Act.
Council is committed to updating all relevant documents in a timely manner. This will include planning instruments, applications, approvals, orders, certificates, forms and other associated documents in both printed and electronic versions. Council is required to implement these changes and regrets any inconvenience caused to the local business, industry and the community.

APPENDIX F

BOREHOLE LOGS

Alliance Geotechnical
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Alliance Geotechnical Pty Ltd
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BH No: BH 01
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D
Hole Location: Refer Drawing 9687-GR-1-A
Driller: CB
Logged: MS
RL Surface:
Contractor: BG Drilling Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT	Groundwater Not Encountered		0		--	FILL: Clay, medium to high plasticity, MC<PL, brown-grey, with silt (Appears moderately compacted).	DS	M	--	FILL
			1		CH	CLAY, high plasticity, orange-brown mottled grey, MC<PL, trace silt, trace fine gravel.		M	St - VSt	RESIDUAL
			2		--	SHALE, extremely to highly weathered, very low strength, brown, with frequent clay layers.	DS	--	--	BEDROCK
			3			Borehole BH 01 terminated at 3m				
			4							
			5							
			6							

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BH No: BH 02
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D
Hole Location: Refer Drawing 9687-GR-1-A
Driller: CB
Logged: MS

RL Surface:
Contractor: BG Drilling Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT					--	TOPSOIL/FILL: Silty Clay, low to medium plasticity, MC~PL, grey-brown, with rootlets	DS	M	--	TOPSOIL/FILL
	Groundwater Not Encountered		1		CI-CH	CLAY, medium to high plasticity, MC>PL, red-brown mottled grey, trace fine gravel.	DS	M - W	F	RESIDUAL
			2			- As above, but MC<PL	SPT 4, 5, 7 N=12	M	St	
			3		CI-CH	Silty CLAY, medium to high plasticity, MC<PL, orange-grey, with shale layers.	SPT 7, 15, 15 N=30	M	H	
			4			Borehole BH 02 terminated at 3.5m				
			5							
			6							

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BH No: BH 03
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D
Hole Location: Refer Drawing 9687-GR-1-A
Driller: CB
Logged: MS
RL Surface:
Contractor: BG Drilling Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT	Groundwater Not Encountered				--	TOPSOIL/FILL: Silty Clay, low plasticity, grey, trace fine gravel.	DS	D	--	TOPSOIL/FILL
			1		CI-CH	Silty CLAY, medium to high plasticity, MC~PL, orange-brown mottled grey.		M	St	RESIDUAL
						- As above, but MC<PL, with shale layers.	SPT 7, 25/120mm		H	
			2		--	SHALE, extremely to highly weathered, very low strength, grey-brown, with frequent clay layers.		D	--	BEDROCK
			3		--	SHALE, highly weathered, very low to low strength, grey.		D	--	
			4			Borehole BH 03 terminated at 3.1m				TC Bit Refusal
			5							
			6							

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BH No: BH 04
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D | **Hole Location:** Refer Drawing 9687-GR-1-A | **Driller:** CB | **Logged:** MS
RL Surface: | **Contractor:** BG Drilling Pty Ltd | **Bearing:** --- | **Checked:** LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT	Groundwater Not Encountered				--	FILL: Sandy Gravel, medium to coarse grained, well graded, fine to medium grained sand, grey-brown, with clay (Appears well compacted).	DS	D	--	FILL
					Cl	Silty CLAY, medium plasticity, orange-brown-grey, MC<PL, with shale gravel.	DS	D	H	RESIDUAL
			1		Cl	Silty CLAY, medium plasticity, orange-brown, MC<PL, with shale layers.		D	H	
			2		--	SHALE, extremely weathered, very low strength, grey-brown, with clay layers.		D	--	BEDROCK
			3			Borehole BH 04 terminated at 3m				
			4							
			5							
			6							

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BH No: BH 05
Sheet: 1 of 2
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D | **Hole Location:** Refer Drawing 9687-GR-1-A | **Driller:** CB | **Logged:** MS
RL Surface: | **Contractor:** BG Drilling Pty Ltd | **Bearing:** --- | **Checked:** LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT	Groundwater Not Encountered				--	TOPSOIL/FILL: Silty Clay, low plasticity, trace fine sand, trace roots.	DS	D	--	TOPSOIL/FILL
					CI-CH	Silty CLAY, medium plasticity, MC>PL, orange-brown mottled grey.		M	St	RESIDUAL
			1			- As above but dry, hard.		D	H	
						- As above with shale layers.	SPT 10, 12, 18 N=30	D	H	
			2		--	SHALE, highly weathered, very low to low strength, grey, with clay bands.		D	--	BEDROCK
			3				SPT 17, 25/5mm Hammer Bounce			
			4							
			5							
					--	SHALE, highly weathered, low strength, dark grey.		D	--	
			6							

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BH No: BH 05
Sheet: 2 of 2
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D
Hole Location: Refer Drawing 9687-GR-1-A
Driller: CB
Logged: MS
RL Surface:
Contractor: BG Drilling Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT					--	SHALE, highly weathered, low strength, dark grey. *(continued)*		D	--	
			7			Borehole BH 05 terminated at 6.7m				TC bit refusal
			8							
			9							
			10							
			11							
			12							

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BH No: BH 06
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D
Hole Location: Refer Drawing 9687-GR-1-A
Driller: CB
Logged: MS
RL Surface:
Contractor: BG Drilling Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT	Groundwater Not Encountered				--	TOPSOIL/FILL: Silty Clay, low plasticity, MC>PL, dark grey, trace fine sand, trace rootlets.	DS	M	--	TOPSOIL/FILL
					CH	CLAY, high plasticity, MC~PL, orange-brown mottled grey.		M	St	RESIDUAL
			1		--	SHALE, extremely to highly weathered, very low to low strength, grey-brown, with clay bands.		D	--	BEDROCK
			2				SPT 4, 12, 23 N=35			
			3							
			4							
			5		--	SHALE, highly weathered, very low to low strength, dark grey.		D	--	
			6			Borehole BH 06 terminated at 5.7m				TC bit refusal

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BH No: BH 07
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 110mm

Rig Type: Hanjin 8D
Hole Location: Refer Drawing 9687-GR-1-A
Driller: CB
Logged: MS

RL Surface:
Contractor: BG Drilling Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
ADT	Groundwater Not Encountered				--	TOPSOIL/FILL: Silty Clay, low plasticity, grey, with rootlets.		M	--	TOPSOIL/FILL
					CH	CLAY, high plasticity, MC~PL, pale grey mottled red, with silt.	DS DS	M	St	RESIDUAL
			1		CI	Silty CLAY, medium plasticity, MC<PL, orange-brown mottled grey.		D	St - VSt	
			2		--	SHALE, extremely to highly weathered, very low strength, grey-brown, with clay bands.	SPT 3, 25/140mm Hammer Bounce	D	--	BEDROCK
			3		--	SHALE, highly weathered, very low to low strength, dark grey.		D	--	
			4 5 6			Borehole BH 07 terminated at 3.5m				TC bit refusal

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BH No: BH 08
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 60mm

Rig Type: Hand Held Push Tube
Hole Location: Refer Drawing 9687-GR-1-A
Driller: JW
Logged: JW
RL Surface:
Contractor: Alliance Geotechnical Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
HA	Groundwater Not Encountered				-	FILL: Silty CLAY, brown.	DS	M	S	FILL
			0.5		CH	CLAY, pale brown and orange.	DS	M	St	RESIDUAL
			1.0							
			1.5			Borehole BH 08 terminated at 1.1m				
			2.0							

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BH No: BH 09
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 60mm

Rig Type: Hand Held Push Tube **Hole Location:** Refer Drawing 9687-GR-1-A **Driller:** JW **Logged:** JW
RL Surface: **Contractor:** Alliance Geotechnical Pty Ltd **Bearing:** --- **Checked:** LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
HA	Groundwater Not Encountered				-	FILL: Silty CLAY, brown.	DS	M	S	FILL
			0.5		CH	CLAY, brown and orange.	DS	M	St	RESIDUAL
			1.0							
			1.5			Borehole BH 09 terminated at 1.1m				
			2.0							

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BH No: BH 10
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 60mm

Rig Type: Hand Held Push Tube
Hole Location: Refer Drawing 9687-GR-1-A
Driller: JW
Logged: JW
RL Surface:
Contractor: Alliance Geotechnical Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
HA	Groundwater Not Encountered		0.5		-	FILL: Silty CLAY, brown, friable.	DS	D	St	FILL
			1.0		CH	CLAY, brown.	DS	M	St	RESIDUAL
			1.5			Borehole BH 10 terminated at 1.1m				
			2.0							

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

BH No: SS01
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 500mm

Rig Type: Hand Excavated
Hole Location: Refer Drawing 9687-GR-1-A
Driller: JW
Logged: JW
RL Surface:
Contractor: Alliance Geotechnical Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
HA	Not Encountered				ML	SILT, brown, trace organics.	DS	W	S	ALLUVIUM
			0.5			Borehole SS01 terminated at 0.3m				
			1.0							
			1.5							
			2.0							

Alliance Geotechnical
Manage the earth, eliminate the risk

Alliance Geotechnical Pty Ltd
T: 1800 288 188
E: office@allgeo.com.au
W: www.allgeo.com.au

BH No: SS02
Sheet: 1 of 1
Job No: 9687

Borehole Log

Client: ESR Group
Project: Proposed Industrial Subdivision
Location: 290-308 Allington Road, Kemps Creek NSW 2178

Started: 4/10/19
Finished: 4/10/19
Borehole Size 500mm

Rig Type: Hand Excavated
Hole Location: Refer Drawing 9687-GR-1-A
Driller: JW
Logged: JW
RL Surface:
Contractor: Alliance Geotechnical Pty Ltd
Bearing: ---
Checked: LM

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Moisture Condition	Consistency/ Density Index	Additional Observations
HA	Not Encountered				-	FILL: Silty CLAY, brown.	DS	M	S	FILL
			0.5			Borehole SS02 terminated at 0.3m				
			1.0							
			1.5							
			2.0							

BOREHOLE (NO COORD/RL) 9687 - 290-308 ALDINGTON ROAD, KEMPS CREEK LOGS.GPJ GINT STD AUSTRALIA.GDT 18/10/19

APPENDIX G

LABORATORY CERTIFICATES

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☑ **Sydney Laboratory** Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2, 91 Leach Highway, Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 2 Kingston Town Close, Oakleigh, VIC 3166 03 8564 5000 EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	9687	Project Manager	AIDAN ROONEY
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	KEMPS CREEK	EDD Format (ESdat, EQuIS, Custom)	
Contact Name					
Phone №	0424066612				
Special Directions					
Purchase Order					
Quote ID №					

														Containers								Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)
				Analyses (Note: Where metals are required, please specify "Total" or "Filtered". SUITE code must be used to ensure SUITE pricing)	TRH / BTEX	PAH	OCP/OPP	NUTRIENTS (B19A)	METALS (8)	ASBESTOS (0.001%)	BTEX	HOLD	Salinity Suite	Aggressivity	Ion Exchange Suite (B20)									
№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))													1L Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	☐ Overnight (9am)* ☐ 1 Day* ☐ 2 Day* ☐ 3 Day* ☑ 5 Day * Surcharges apply ☐ Other ( )
1	BH1-0.4-0.5	4/10/19	S		X	X	X	X	X	X					X									
2	BH1-1.3-1.4	4/10/19	S									X												
3	BH2-0.1-0.2	4/10/19	S		X	X	X	X	X	X					X									
4	BH2-0.5-0.6	4/10/19	S											X										
5	BH3-0.1-0.2	4/10/19	S		X	X	X	X	X	X														
6		4/10/19	S																					
7	BH4-0.2-0.3	4/10/19	S		X	X	X	X	X	X					X									
8	BH4-0.5-0.6	4/10/19	S									X												
9	BH5-0.1-0.2	4/10/19	S		X	X	X	X	X	X					X									
10	BH5-1.5-1.6	4/10/19	S											X										
11	BH6-0.1-0.2	4/10/19	S		X	X	X	X	X	X														
12	BH6-1.5-1.6	4/10/19	S									X												
13	BH7-0.1-0.3	4/10/19	S		X	X	X	X	X	X					X									
14	BH7-0.3-0.7	4/10/19	S									X												
15	BH8-0.0-0.2	4/10/19	S		X	X	X	X	X	X					X									
16	BH8-0.4-0.6	4/10/19	S									X												
17	BH9-0.0-0.2	4/10/19	S		X	X	X	X	X	X					X									
18	BH9-0.3-0.5	4/10/19	S									X												
19	BH10-0.0-0.2	4/10/19	S		X	X	X	X	X	X					X									
20	BH10-0.5-0.7	4/10/19	S									X												
			Total Counts		10	10	10	10	10	10		7			8									

Sampler(s)	JW	Handed over by	JW	Email for Invoice	Enviro@allgeo.com.au	Email for Results	Enviro@allgeo.com.au	Sample Comments / Dangerous Goods Hazard Warning		

Method of Shipment	☑ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Jacob Walker	Signature		Date		Time			
Eurofins | mgt Laboratory Use Only	Received By	Grace Tuckwell	SYD ⓒ BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	4/10	Time	5:23	Temperature	18.8
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	/ /	Time	:	Report №	680974

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☒ Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	ALLIANCE GEOTECHNICAL	Project №	9687	Project Manager	AIDAN ROONEY	Sampler(s)	JW
Address	10 WELDER ROAD, SEVEN HILLS NSW	Project Name	KEMPS CREEK	EDD Format (ESdat, EQuIS, Custom)		Handed over by	JW
Contact Name						Email for Invoice	Enviro@allgeo.com.au
Phone №	0424066612					Email for Results	Enviro@allgeo.com.au
Special Directions							
Purchase Order							
Quote ID №							

Analyses (Note: Where metals are requested, please specify "Total" or "Filtered" | SUITE code must be used to attract SUITE pricing)

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)
☐ Overnight (9am)*
☐ 1 Day* ☐ 2 Day*
☐ 3 Day* ☒ 5 Day
* Surcharges apply
☐ Other ( )

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	TRH / BTEX	PAH	OCP/OPP	NUTRIENTS (B19A)	METALS (8)	ASBESTOS (0.001%)	BTEX	HOLD	Aggressivity	ASBESTOS	Ion Exchange Suite (B20)	Sample Comments / Dangerous Goods Hazard Warning
1	SS01	4/10/19	S/W				X	X							
2	SS02	4/10/19	S	X	X	X	X	X	X						
3	TRIP SPIKE									X					
4	TRIP BLANK									X					
5	FRAG-1	4/10/19	FRAG										X		
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
	Total Counts			1	1	1	2	2	1	2					

Method of Shipment	☒ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Jacob Walker	Signature	[signature]	Date	Time
Eurofins | mgt Laboratory Use Only	Received By	Grace Tunkwell	(SYD) | BNE | MEL | PER | ADL | NTL | DRW	Signature	[signature]	Date 14/10	Time 5:23	Temperature	18.8
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date / /	Time :	Report №	680974

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Aidan Rooney**

Report **680974-S**
Project name KEMPS CREEK
Project ID 9687
Received Date Oct 04, 2019

Client Sample ID			**BH1-0.4-0.5**	**BH2-0.1-0.2**	**BH3-0.1-0.2**	**BH4-0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S19-Oc08933**	**S19-Oc08934**	**S19-Oc08935**	**S19-Oc08936**
Date Sampled			**Oct 04, 2019**	**Oct 04, 2019**	**Oct 04, 2019**	**Oct 04, 2019**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	51	< 50	55
TRH C29-C36	50	mg/kg	< 50	51	< 50	57
TRH C10-C36 (Total)	50	mg/kg	< 50	102	< 50	112
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	99	77	135	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH1-0.4-0.5	BH2-0.1-0.2	BH3-0.1-0.2	BH4-0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08933	S19-Oc08934	S19-Oc08935	S19-Oc08936
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	77	82	81	71
p-Terphenyl-d14 (surr.)	1	%	104	126	102	118
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	82	110	87	99
Tetrachloro-m-xylene (surr.)	1	%	99	114	101	103
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	82	110	87	99
Tetrachloro-m-xylene (surr.)	1	%	99	114	101	103

Client Sample ID			BH1-0.4-0.5	BH2-0.1-0.2	BH3-0.1-0.2	BH4-0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08933	S19-Oc08934	S19-Oc08935	S19-Oc08936
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	45	33	-	240
Nitrate & Nitrite (as N)	5	mg/kg	< 5	< 5	< 5	< 5
Total Kjeldahl Nitrogen (as N)	10	mg/kg	710	1300	930	1500
Total Nitrogen (as N)	10	mg/kg	710	1300	930	1500
Exchangeable Sodium Percentage (ESP)	0.1	%	2.2	4.5	-	7.0
Magnesium (exchangeable)	0.1	meq/100g	12	12	-	7.0
Phosphorus	5	mg/kg	340	320	340	1700
Potassium (exchangeable)	0.1	meq/100g	0.4	0.5	-	1.5
Sodium (exchangeable)	0.1	meq/100g	0.6	1.4	-	2.9
% Moisture	1	%	16	23	18	9.3
Heavy Metals						
Arsenic	2	mg/kg	11	7.3	10	9.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	17	16	27	21
Copper	5	mg/kg	27	21	44	61
Lead	5	mg/kg	21	20	28	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	24	13	24	27
Zinc	5	mg/kg	75	40	77	110
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	13	16	-	29
Cation Exchange Capacity	0.05	meq/100g	26	30	-	41

Client Sample ID			BH5-0.1-0.2	BH6-0.1-0.2	BH7-0.1-0.3	BH8-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08937	S19-Oc08938	S19-Oc08939	S19-Oc08940
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	122	111	117	115
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			BH5-0.1-0.2	BH6-0.1-0.2	BH7-0.1-0.3	BH8-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08937	S19-Oc08938	S19-Oc08939	S19-Oc08940
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	59	59	56	59
p-Terphenyl-d14 (surr.)	1	%	107	100	105	100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			BH5-0.1-0.2	BH6-0.1-0.2	BH7-0.1-0.3	BH8-0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08937	S19-Oc08938	S19-Oc08939	S19-Oc08940
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchlorendate (surr.)	1	%	94	85	83	80
Tetrachloro-m-xylene (surr.)	1	%	89	89	92	93
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	94	85	83	80
Tetrachloro-m-xylene (surr.)	1	%	89	89	92	93
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	63	-	55	45
Nitrate & Nitrite (as N)	5	mg/kg	7.6	6.5	< 5	< 5
Total Kjeldahl Nitrogen (as N)	10	mg/kg	3500	2400	980	2200
Total Nitrogen (as N)	10	mg/kg	3507.6	2406.5	980	2200
Exchangeable Sodium Percentage (ESP)	0.1	%	1.4	-	11	3.6
Magnesium (exchangeable)	0.1	meq/100g	6.6	-	16	6.1
Phosphorus	5	mg/kg	1000	610	340	920
Potassium (exchangeable)	0.1	meq/100g	3.1	-	0.6	2.9
Sodium (exchangeable)	0.1	meq/100g	0.3	-	2.5	0.7
% Moisture	1	%	17	15	18	14
Heavy Metals						
Arsenic	2	mg/kg	10	9.2	17	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	17	23	21
Copper	5	mg/kg	37	28	39	26
Lead	5	mg/kg	26	18	16	35
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	23	21	11	15
Zinc	5	mg/kg	100	63	50	70
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	10	-	3.5	9.4
Cation Exchange Capacity	0.05	meq/100g	20	-	23	19

Client Sample ID			BH9-0.0-0.2	BH10-0.0-0.2	SS01	SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08941	S19-Oc08942	S19-Oc08943	S19-Oc08944
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	27
TRH C15-C28	50	mg/kg	< 50	< 50	-	82
TRH C29-C36	50	mg/kg	< 50	< 50	-	140
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	249
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	0.4	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	0.4	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	127	112	-	122
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	180
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	180
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	69	74	-	56
p-Terphenyl-d14 (surr.)	1	%	106	106	-	106

Client Sample ID			BH9-0.0-0.2	BH10-0.0-0.2	SS01	SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08941	S19-Oc08942	S19-Oc08943	S19-Oc08944
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	-	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	-	< 0.2
Dibutylchlorendate (surr.)	1	%	77	75	-	93
Tetrachloro-m-xylene (surr.)	1	%	91	96	-	91
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	77	75	-	93
Tetrachloro-m-xylene (surr.)	1	%	91	96	-	91
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	13	970	-	-
Nitrate & Nitrite (as N)	5	mg/kg	< 5	270	< 5	56
Total Kjeldahl Nitrogen (as N)	10	mg/kg	1100	1800	2400	5900
Total Nitrogen (as N)	10	mg/kg	1100	2070	2400	5956
Exchangeable Sodium Percentage (ESP)	0.1	%	5.0	5.4	-	-
Magnesium (exchangeable)	0.1	meq/100g	6.6	2.7	-	-
Phosphorus	5	mg/kg	460	580	890	1600
Potassium (exchangeable)	0.1	meq/100g	0.4	2.7	-	-
Sodium (exchangeable)	0.1	meq/100g	0.7	0.4	-	-
% Moisture	1	%	15	13	35	26

Client Sample ID			BH9-0.0-0.2	BH10-0.0-0.2	SS01	SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08941	S19-Oc08942	S19-Oc08943	S19-Oc08944
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	12	13	6.7	15
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	25	21	25
Copper	5	mg/kg	26	66	36	41
Lead	5	mg/kg	35	56	20	28
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	16	36	12	23
Zinc	5	mg/kg	68	150	61	140
Cation Exchange Capacity						
Calcium (exchangeable)	0.1	meq/100g	5.4	0.9	-	-
Cation Exchange Capacity	0.05	meq/100g	13	6.7	-	-

Client Sample ID			TRIP SPIKE	TRIP BLANK	BH2-0.5-0.6	BH5-1.5-1.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Oc08945	S19-Oc08946	S19-Oc08949	S19-Oc08950
Date Sampled			Oct 04, 2019	Oct 04, 2019	Oct 04, 2019	Oct 04, 2019
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	97	< 0.1	-	-
Toluene	0.1	mg/kg	97	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	130	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	96	< 0.2	-	-
o-Xylene	0.1	mg/kg	96	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	96	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	105	95	-	-
Chloride	10	mg/kg	-	-	230	490
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	90	130
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	7.1	5.6
Resistivity*	0.5	ohm.m	-	-	560	380
Sulphate (as SO4)	10	mg/kg	-	-	43	< 10
% Moisture	1	%	-	-	17	9.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 10, 2019	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Oct 10, 2019	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 10, 2019	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 10, 2019	
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 10, 2019	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Oct 10, 2019	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Sydney	Oct 10, 2019	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Oct 10, 2019	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Chloride	Sydney	Oct 10, 2019	28 Days
- Method: E045 /E047 Chloride			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Oct 10, 2019	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Sulphate (as SO4)	Sydney	Oct 10, 2019	28 Days
- Method: E045 Anions by Ion Chromatography			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	Oct 10, 2019	7 Days
- Method: LTM-INO-4030 Conductivity			
Magnesium (exchangeable)	Melbourne	Oct 09, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Potassium (exchangeable)	Melbourne	Oct 09, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Sodium (exchangeable)	Melbourne	Oct 09, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity and ESP			
Cation Exchange Capacity	Melbourne	Oct 09, 2019	180 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N)	Melbourne	Oct 09, 2019	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Total Kjeldahl Nitrogen (as N)	Melbourne	Oct 09, 2019	28 Days
- Method: LTM-INO-4310 TKN in Waters & Soils by FIA			
Exchangeable Sodium Percentage (ESP)	Melbourne	Oct 09, 2019	28 Days
- Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)			
Eurofins | mgt Suite B19A: Total N (TKN, NOx), Total P			
Phosphorus	Melbourne	Oct 09, 2019	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Oct 04, 2019	14 Days
- Method: LTM-GEN-7080 Moisture			

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Sydney
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16 Mars Road
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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: Alliance Geotechnical
Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: KEMPS CREEK
Project ID: 9687

Order No.:
Report #: 680974
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Oct 4, 2019 5:23 PM
Due: Oct 14, 2019
Priority: 5 Day
Contact Name: Aidan Rooney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	Metals M8	BTEX	Eurofins | mgt Suite B13	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Eurofins | mgt Suite B7	Eurofins | mgt Suite B19A: Total N (TKN, NOx), Total P
Melbourne Laboratory - NATA Site # 1254 & 14271												X	X	X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X		X	X	
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	BH1-0.4-0.5	Oct 04, 2019		Soil	S19-Oc08933	X					X		X	X	X	X
2	BH2-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08934	X					X		X	X	X	X
3	BH3-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08935	X					X			X	X	X
4	BH4-0.2-0.3	Oct 04, 2019		Soil	S19-Oc08936	X					X		X	X	X	X
5	BH5-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08937	X					X		X	X	X	X
6	BH6-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08938	X					X			X	X	X
7	BH7-0.1-0.3	Oct 04, 2019		Soil	S19-Oc08939	X					X		X	X	X	X
8	BH8-0.0-0.2	Oct 04, 2019		Soil	S19-Oc08940	X					X		X	X	X	X
9	BH9-0.0-0.2	Oct 04, 2019		Soil	S19-Oc08941	X					X		X	X	X	X

eurofins | Environment Testing

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Melbourne Laboratory - NATA Site # 1254 & 14271												X	X	X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X		X	X	
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
10	BH10-0.0-0.2	Oct 04, 2019		Soil	S19-Oc08942	X					X		X	X	X	X
11	SS01	Oct 04, 2019		Soil	S19-Oc08943				X					X		X
12	SS02	Oct 04, 2019		Soil	S19-Oc08944	X					X			X	X	X
13	TRIP SPIKE	Oct 04, 2019		Soil	S19-Oc08945					X						
14	TRIP BLANK	Oct 04, 2019		Soil	S19-Oc08946					X						
15	TRIP SPIKE LAB	Oct 04, 2019		Soil	S19-Oc08947					X						
16	FRAG-1	Oct 04, 2019		Building Materials	S19-Oc08948		X									
17	BH2-0.5-0.6	Oct 04, 2019		Soil	S19-Oc08949							X		X		
18	BH5-1.5-1.6	Oct 04, 2019		Soil	S19-Oc08950							X		X		
19	BH1-1.3-1.4	Oct 04, 2019		Soil	S19-Oc08951			X								
20	BH4-0.5-0.6	Oct 04, 2019		Soil	S19-Oc08952			X								

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Melbourne Laboratory - NATA Site # 1254 & 14271												X	X	X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X		X	X	
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
21	BH6-1.5-1.6	Oct 04, 2019		Soil	S19-Oc08953			X								
22	BH7-0.3-0.7	Oct 04, 2019		Soil	S19-Oc08954			X								
23	BH8-0.4-0.6	Oct 04, 2019		Soil	S19-Oc08955			X								
24	BH9-0.3-0.5	Oct 04, 2019		Soil	S19-Oc08956			X								
25	BH10-0.5-0.7	Oct 04, 2019		Soil	S19-Oc08957			X								
Test Counts						11	1	7	1	3	11	2	8	14	11	12

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/kg	< 5			5	Pass	
Total Kjeldahl Nitrogen (as N)	mg/kg	< 10			10	Pass	
Exchangeable Sodium Percentage (ESP)	%	< 0.1			0.1	Pass	
Magnesium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Potassium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Sodium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Cation Exchange Capacity							
Calcium (exchangeable)	meq/100g	< 0.1			0.1	Pass	
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	90			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	90			70-130	Pass	
o-Xylene	%	91			70-130	Pass	
Xylenes - Total	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	98			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	70			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	73			70-130	Pass	
Acenaphthylene	%	72			70-130	Pass	
Anthracene	%	72			70-130	Pass	
Benz(a)anthracene	%	73			70-130	Pass	
Benzo(a)pyrene	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	%	72			70-130	Pass	
Benzo(g.h.i)perylene	%	71			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	73			70-130	Pass	
Dibenz(a.h)anthracene	%	77			70-130	Pass	
Fluoranthene	%	74			70-130	Pass	
Fluorene	%	73			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	74			70-130	Pass	
Naphthalene	%	74			70-130	Pass	
Phenanthrene	%	74			70-130	Pass	
Pyrene	%	76			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	102			70-130	Pass	
4.4'-DDD	%	88			70-130	Pass	
4.4'-DDE	%	110			70-130	Pass	
4.4'-DDT	%	100			70-130	Pass	
a-BHC	%	87			70-130	Pass	
Aldrin	%	103			70-130	Pass	
b-BHC	%	93			70-130	Pass	
d-BHC	%	105			70-130	Pass	
Dieldrin	%	110			70-130	Pass	
Endosulfan I	%	101			70-130	Pass	
Endosulfan II	%	107			70-130	Pass	
Endosulfan sulphate	%	103			70-130	Pass	
Endrin	%	122			70-130	Pass	
Endrin aldehyde	%	91			70-130	Pass	
Endrin ketone	%	116			70-130	Pass	
g-BHC (Lindane)	%	102			70-130	Pass	
Heptachlor	%	108			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	101			70-130	Pass	
Methoxychlor	%	87			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	116			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	95			70-130	Pass	
Resistivity*	%	95			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	85			70-130	Pass	
LCS - % Recovery							
Heavy Metals							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	92			70-130	Pass	
Cadmium			%	91			70-130	Pass	
Chromium			%	91			70-130	Pass	
Copper			%	94			70-130	Pass	
Lead			%	94			70-130	Pass	
Mercury			%	99			70-130	Pass	
Nickel			%	99			70-130	Pass	
Zinc			%	94			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S19-Oc08933	CP	%	71			70-130	Pass	
TRH C10-C14	S19-Oc06522	NCP	%	97			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S19-Oc08933	CP	%	80			70-130	Pass	
Toluene	S19-Oc08933	CP	%	77			70-130	Pass	
Ethylbenzene	S19-Oc08933	CP	%	75			70-130	Pass	
m&p-Xylenes	S19-Oc08933	CP	%	79			70-130	Pass	
o-Xylene	S19-Oc08933	CP	%	78			70-130	Pass	
Xylenes - Total	S19-Oc08933	CP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S19-Oc08933	CP	%	85			70-130	Pass	
TRH C6-C10	S19-Oc16930	NCP	%	79			70-130	Pass	
TRH >C10-C16	S19-Oc06522	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S19-Oc08960	NCP	%	77			70-130	Pass	
Acenaphthylene	S19-Oc08960	NCP	%	77			70-130	Pass	
Anthracene	S19-Oc08960	NCP	%	78			70-130	Pass	
Benz(a)anthracene	S19-Oc08960	NCP	%	75			70-130	Pass	
Benzo(a)pyrene	S19-Oc08960	NCP	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	S19-Oc08960	NCP	%	75			70-130	Pass	
Benzo(g.h.i)perylene	S19-Oc08960	NCP	%	88			70-130	Pass	
Benzo(k)fluoranthene	S19-Oc08960	NCP	%	78			70-130	Pass	
Chrysene	S19-Oc08960	NCP	%	76			70-130	Pass	
Dibenz(a.h)anthracene	S19-Oc08960	NCP	%	88			70-130	Pass	
Fluoranthene	S19-Oc08960	NCP	%	78			70-130	Pass	
Fluorene	S19-Oc08960	NCP	%	77			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S19-Oc08960	NCP	%	90			70-130	Pass	
Naphthalene	S19-Oc08960	NCP	%	78			70-130	Pass	
Phenanthrene	S19-Oc08960	NCP	%	79			70-130	Pass	
Pyrene	S19-Oc08960	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S19-Oc08960	NCP	%	105			70-130	Pass	
4.4'-DDD	S19-Oc08960	NCP	%	115			70-130	Pass	
4.4'-DDE	S19-Oc08960	NCP	%	110			70-130	Pass	
4.4'-DDT	S19-Oc08960	NCP	%	72			70-130	Pass	
a-BHC	S19-Oc08960	NCP	%	93			70-130	Pass	
Aldrin	S19-Oc08960	NCP	%	98			70-130	Pass	
b-BHC	S19-Oc08960	NCP	%	97			70-130	Pass	
d-BHC	S19-Oc08960	NCP	%	104			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dieldrin	S19-Oc08960	NCP	%	111			70-130	Pass	
Endosulfan I	S19-Oc08960	NCP	%	105			70-130	Pass	
Endosulfan II	S19-Oc08960	NCP	%	111			70-130	Pass	
Endosulfan sulphate	S19-Oc08960	NCP	%	115			70-130	Pass	
Endrin	S19-Oc08865	NCP	%	101			70-130	Pass	
Endrin aldehyde	S19-Oc08960	NCP	%	105			70-130	Pass	
Endrin ketone	S19-Oc08960	NCP	%	109			70-130	Pass	
g-BHC (Lindane)	S19-Oc08960	NCP	%	104			70-130	Pass	
Heptachlor	S19-Oc08960	NCP	%	102			70-130	Pass	
Heptachlor epoxide	S19-Oc08960	NCP	%	99			70-130	Pass	
Hexachlorobenzene	S19-Oc08960	NCP	%	99			70-130	Pass	
Methoxychlor	S19-Oc08960	NCP	%	70			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S19-Oc08960	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Zinc	S19-Oc08865	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S19-Oc08942	CP	%	90			70-130	Pass	
Cadmium	S19-Oc08942	CP	%	115			70-130	Pass	
Chromium	S19-Oc08942	CP	%	107			70-130	Pass	
Copper	S19-Oc08942	CP	%	123			70-130	Pass	
Lead	S19-Oc08942	CP	%	81			70-130	Pass	
Mercury	S19-Oc08942	CP	%	121			70-130	Pass	
Nickel	S19-Oc08942	CP	%	117			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S19-Oc14309	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S19-Oc14309	NCP	mg/kg	60	51	15	30%	Pass	
TRH C29-C36	S19-Oc14309	NCP	mg/kg	120	110	13	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S19-Oc14309	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S19-Oc14309	NCP	mg/kg	150		14	30%	Pass	
TRH >C34-C40	S19-Oc14309	NCP	mg/kg	< 100		23	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Phenanthrene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S19-Oc08959	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S19-Oc08959	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S19-Oc08959	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1221	S19-Oc08959	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Total PCB*	S19-Oc08959	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphorus	S19-Oc08936	CP	mg/kg	1700	1700	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S19-Oc08937	CP	%	17	17	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S19-Oc08941	CP	mg/kg	12	11	8.0	30%	Pass	
Cadmium	S19-Oc08941	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S19-Oc08941	CP	mg/kg	23	25	10	30%	Pass	
Copper	S19-Oc08941	CP	mg/kg	26	28	6.0	30%	Pass	
Lead	S19-Oc08941	CP	mg/kg	35	31	12	30%	Pass	
Mercury	S19-Oc08941	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S19-Oc08941	CP	mg/kg	16	15	2.0	30%	Pass	
Zinc	S19-Oc08941	CP	mg/kg	68	75	9.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S19-Oc08942	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S19-Oc08942	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S19-Oc08942	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S19-Oc08942	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S19-Oc08942	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S19-Oc08942	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S19-Oc08942	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S19-Oc08942	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S19-Oc08942	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	S19-Oc08944	CP	mg/kg	56	58	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S19-Oc08809	NCP	mg/kg	12	11	10	30%	Pass	
Sulphate (as SO4)	S19-Oc08809	NCP	mg/kg	180	190	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Oc08950	CP	uS/cm	130	140	9.0	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Oc08950	CP	pH Units	5.6	5.5	Pass	30%	Pass	
Resistivity*	S19-Oc08950	CP	ohm.m	380	350	9.2	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Andrew Black	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Inorganic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Julie Kay	Senior Analyst-Inorganic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Certificate of Analysis

Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Alliance Geotechnical
10 Welder Road
Seven Hills
NSW 2147

Attention:	Aidan Rooney
Report	680974-AID
Project Name	KEMPS CREEK
Project ID	9687
Received Date	Oct 04, 2019
Date Reported	Oct 14, 2019

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name KEMPS CREEK
Project ID 9687
Date Sampled Oct 04, 2019
Report 680974-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH1-0.4-0.5	19-Oc08933	Oct 04, 2019	Approximate Sample 512g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH2-0.1-0.2	19-Oc08934	Oct 04, 2019	Approximate Sample 458g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH3-0.1-0.2	19-Oc08935	Oct 04, 2019	Approximate Sample 316g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH4-0.2-0.3	19-Oc08936	Oct 04, 2019	Approximate Sample 441g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH5-0.1-0.2	19-Oc08937	Oct 04, 2019	Approximate Sample 359g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH6-0.1-0.2	19-Oc08938	Oct 04, 2019	Approximate Sample 424g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH7-0.1-0.3	19-Oc08939	Oct 04, 2019	Approximate Sample 537g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH8-0.0-0.2	19-Oc08940	Oct 04, 2019	Approximate Sample 427g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH9-0.0-0.2	19-Oc08941	Oct 04, 2019	Approximate Sample 410g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
BH10-0.0-0.2	19-Oc08942	Oct 04, 2019	Approximate Sample 492g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS02	19-Oc08944	Oct 04, 2019	Approximate Sample 379g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
FRAG-1	19-Oc08948	Oct 04, 2019	Approximate Sample 19g / 60x30x5mm Sample consisted of: Grey compressed fibre cement	No asbestos detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Oct 11, 2019	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Oct 11, 2019	Indefinite

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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: Alliance Geotechnical
Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: KEMPS CREEK
Project ID: 9687

Order No.:
Report #: 680974
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Oct 4, 2019 5:23 PM
Due: Oct 14, 2019
Priority: 5 Day
Contact Name: Aidan Rooney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	Metals M8	BTEX	Eurofins | mgt Suite B13	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Eurofins | mgt Suite B7	Eurofins | mgt Suite B19A: Total N (TKN, NOx), Total P
Melbourne Laboratory - NATA Site # 1254 & 14271												X	X	X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X		X	X	
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	BH1-0.4-0.5	Oct 04, 2019		Soil	S19-Oc08933	X					X		X	X	X	X
2	BH2-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08934	X					X		X	X	X	X
3	BH3-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08935	X					X			X	X	X
4	BH4-0.2-0.3	Oct 04, 2019		Soil	S19-Oc08936	X					X		X	X	X	X
5	BH5-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08937	X					X		X	X	X	X
6	BH6-0.1-0.2	Oct 04, 2019		Soil	S19-Oc08938	X					X			X	X	X
7	BH7-0.1-0.3	Oct 04, 2019		Soil	S19-Oc08939	X					X		X	X	X	X
8	BH8-0.0-0.2	Oct 04, 2019		Soil	S19-Oc08940	X					X		X	X	X	X
9	BH9-0.0-0.2	Oct 04, 2019		Soil	S19-Oc08941	X					X		X	X	X	X

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NATA # 1261
Site # 23736

Company Name: Alliance Geotechnical
Address: 10 Welder Road
Seven Hills
NSW 2147

Project Name: KEMPS CREEK
Project ID: 9687

Order No.:
Report #: 680974
Phone: 1800 288 188
Fax: 02 9675 1888

Received: Oct 4, 2019 5:23 PM
Due: Oct 14, 2019
Priority: 5 Day
Contact Name: Aidan Rooney

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence /Presence	HOLD	Metals M8	BTEX	Eurofins | mgt Suite B13	Aggressivity Soil Set	Eurofins | mgt Suite B20	Moisture Set	Eurofins | mgt Suite B7	Eurofins | mgt Suite B19A: Total N (TKN, NOx), Total P
Melbourne Laboratory - NATA Site # 1254 & 14271												X	X	X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X		X	X	
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
10	BH10-0.0-0.2	Oct 04, 2019		Soil	S19-Oc08942	X					X		X	X	X	X
11	SS01	Oct 04, 2019		Soil	S19-Oc08943				X					X		X
12	SS02	Oct 04, 2019		Soil	S19-Oc08944	X					X			X	X	X
13	TRIP SPIKE	Oct 04, 2019		Soil	S19-Oc08945					X						
14	TRIP BLANK	Oct 04, 2019		Soil	S19-Oc08946					X						
15	FRAG-1	Oct 04, 2019		Building Materials	S19-Oc08948		X									
16	BH2-0.5-0.6	Oct 04, 2019		Soil	S19-Oc08949							X		X		
17	BH5-1.5-1.6	Oct 04, 2019		Soil	S19-Oc08950							X		X		
18	BH1-1.3-1.4	Oct 04, 2019		Soil	S19-Oc08951			X								
19	BH4-0.5-0.6	Oct 04, 2019		Soil	S19-Oc08952			X								
20	BH6-1.5-1.6	Oct 04, 2019		Soil	S19-Oc08953			X								

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Melbourne Laboratory - NATA Site # 1254 & 14271												X	X	X		X
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X		X	X	
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 23736																
21	BH7-0.3-0.7	Oct 04, 2019		Soil	S19-Oc08954			X								
22	BH8-0.4-0.6	Oct 04, 2019		Soil	S19-Oc08955			X								
23	BH9-0.3-0.5	Oct 04, 2019		Soil	S19-Oc08956			X								
24	BH10-0.5-0.7	Oct 04, 2019		Soil	S19-Oc08957			X								
Test Counts						11	1	7	1	2	11	2	8	14	11	12

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to “non-bonded / friable”.
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

S19-Oc08934, S19-Oc08935, S19-Oc08936, S19-Oc08937, S19-Oc08938, S19-Oc08940, S19-Oc08941, S19-Oc08942, S19-Oc08944: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.