Alliance Geotechnical

Engineering | Environmental | Testing

Report Type: Stage 1 Preliminary Site Investigation (with Limited Sampling)

Project Address:

290-308 Aldington Road, Kemps Creek NSW Lot 13 in DP253503

> Client Name: CIP Constructions (NSW) Pty Ltd

> > 18 October 2019 Report No: 9687-ER-1-1

We give you the right information to make the right decisions

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DOCUMENT CONTROL

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EXECUTIVE SUMMARY

Alliance Geotechnical Pty Ltd (AG) was engaged by CIP Constructions (NSW) Pty Ltd, to undertake a Stage 1 Preliminary Site Investigation (with Limited Sampling) for 290-308 Aldington Road, Kemps Creek NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

AG has the following project appreciation:

- The site may be proposed for redevelopment, which could result in a potential commercial / industrial land use scenario; and
- A contamination assessment of the site is required as pre-purchase due diligence to inform the potential landowners of contamination risk (if any).
- •

The objectives of this investigation were to:

- Assess the potential for contamination to be present on the site as a result of past and current land use activities;
- Provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting;
- Provide advice on salinity hazards and risks for the site; and
- Provide recommendations for further investigation, management and/or remediation (if warranted).

The scope of works undertaken to address the investigation objectives, included:

- A desktop review of relevant information pertaining to the site;
- A site walkover to understand current site conditions;
- The preparation of a Sampling and Analysis Quality Plan (SAQP);
- Conduct a targeted intrusive site investigation to establish ground conditions and to facilitate the collection of representative soil samples;
- Laboratory analysis of selected samples collected during the field investigation; and
- An assessment of the contamination status of the site and the recommendation of any further remedial requirements associated with the redevelopment of the site (if necessary).

Conclusions

Based on AG's assessment of the desktop review information, fieldwork data and laboratory analytical data, in the context of the proposed redevelopment scenario, AG makes the following conclusions:

- The detected concentrations of identified contaminants of potential concern in the soils assessed are considered unlikely to present:
 - An unacceptable inhalation / vapour intrusion human health exposure risk; or
 - An unacceptable petroleum management limit risk.
- The detected concentrations of contaminants in the soils assessed are considered unlikely to present a direct contact human health risk;
- The detected concentrations of contaminants in the soils assessed are considered unlikely to present an unacceptable ecological health risk;
- Asbestos was not observed or detected within any of the soil samples collected;
- The detected concentrations of nutrients in the soils assessed are considered to be similarly low across the site;
- Soils assessed onsite (up to a depth of 1.0m below ground surface) are considered to be:

- non-saline to very saline;
- non-aggressive to concrete piles;
- non-aggressive to steel piles; and
- non-sodic to sodic.
- The soil materials are considered suitable for the proposed land use setting; and
- The site is deemed unlikely to pose a significant contamination risk to for future development.

Recommendations

Based on the above conclusions, AG makes the following recommendations:

• As the soil materials are considered suitable for the proposed land use (in the context of contamination), no further investigation, management and/or remediation is deemed warranted.

This report, including its conclusions and recommendations, must be read in conjunction with the limitations presented in **Section 18**.

TABLE OF CONTENTS

DOCUMENT CONTROL	2
EXECUTIVE SUMMARY	3

1.	ΙΝΤΙ	RODUCTION1
1.1	1.	Background1
1.2	2.	Objectives1
1.3	3.	Scope of Work1
2.	SITE	IDENTIFICATION
3.	GEC	DLOGY, ACID SULFATE SOILS, TOPOGRAPHY AND HYDROGEOLOGY
3.1	1.	Geology
3.2	2.	Acid Sulfate Soils
3.3	3.	Topography
3.4	4.	Hydrogeology3
4.	SITE	E HISTORY AND LAND USE
4.1	1.	Land Titles4
4.2	2.	Aerial Imagery4
4.3	3.	Anecdotal Information5
4.4	4.	Incident Reports
4.5	5.	Complaints History
4.6	5.	Previous Contamination Assessments5
5.	REG	ULATORY RECORDS
5.1	1.	NSW EPA CLM Act Record of Notices
5.2	2.	NSW EPA POEO Act Register of Licences, Applications and Notices
5.3	3.	NSW EPA CLM Act Register of Notified Sites
5.4	4.	Section 10.7 Planning Certificate
5.5	5.	SafeWork NSW Stored Chemical Information Database (SCID)6
6.	SITE	WALKOVER
6.1	1.	Current Land Use Activity
6.2	2.	Buildings and General Infrastructure
6.3	3.	Boundary Fencing
6.4	4.	Adjacent Land Use Activities
6.5	5.	Odours and Staining11
6.6	6.	Chemical Storage
6.7	7.	Underground and Aboveground Storage Tanks12

	6.8.	Fill Material	12
	6.9.	Wastes	12
	6.10.	Asbestos Containing Materials	12
	6.11.	Phytotoxicity	13
	6.12.	Surface Water and Site Drainage	13
	6.13.	Adjacent Ecological Receptors	13
7	. DAT	A INTEGRITY ASSESSMENT	14
8	. PRE	LIMINARY CONCEPTUAL SITE MODEL	15
	8.1.	Areas of Environmental Concern	15
	8.2.	Land Use Setting	17
	8.3.	Human Health - Direct Contact	17
	8.4.	Human Health - Inhalation / Vapour Intrusion	17
	8.5.	Human Health - Aesthetics	17
	8.6.	Management Limits for Petroleum Hydrocarbon Compounds	17
	8.7.	Ecological Health – Terrestrial Ecosystems	18
9	. DAT	A QUALITY OBJECTIVES	19
	9.1.	Step 1: State the problem	19
	9.2.	Step 2: Identify the decision/goal of the study	19
	9.3.	Step 3: Identify the information inputs	19
	9.4.	Step 4: Define the boundaries of the study	20
	9.5.	Step 5: Develop the analytical approach (or decision rule)	21
	9.5.3	1. Rinsate Blanks	21
	9.5.2	2. Trip Spikes and Trip Blank Samples	21
	9.5.3	3. Laboratory Analysis Quality Assurance / Quality Control	21
	9.5.4	4. If/Then Decision Rules	21
	9.6.	Step 6: Specify the performance or acceptance criteria	22
	9.7.	Step 7: Develop the plan for obtaining data	24
	9.7.1	1. Sampling Point Density and Locations	24
	9.7.2	2. Sampling Methodology	25
	9.7.3	3. Identification, Storage and Handling of Samples	25
	9.7.4	4. Decontamination	26
	9.7.	5. Laboratory Selection	26
	9.7.0	6. Laboratory Analytical Schedule	26
	9.7.	7. Laboratory Holding Times, Analytical Methods and Limits of Reporting	26
1	0. IN	ITRUSIVE SAMPLING METHODOLOGY	28
	10.1.	Scope of Fieldworks	28
	10.2.	Laboratory Analysis	28

11. F	IELD	WORK	29
11.1.	Soil	Sampling	29
11.2.	Site	Geology	29
11.3.	Odo	urs	30
11.4.	Stai	ning	30
11.5.	Pote	ential Asbestos Containing Materials	30
12. L	ABO	RATORY ANALYSIS	31
13. C	ΟΑΤΑ	QUALITY INDICATOR ASSESSMENT	32
13.1.	Com	pleteness	32
13.2.	Com	nparability	33
13.3.	Rep	resentativeness	33
13.4.	Prec	ision	34
13.5.	Αссι	Jracy	34
14. C	DISCU	SSION	36
14.1.	Hun	nan Health - Direct Contact (Commercial / Industrial)	36
14.	1.1.	TRH	36
14.	1.2.	BTEX	36
14.	1.3.	РАН	36
14.	1.4.	OCP	36
14.	1.5.	PCBs	36
14.	1.6.	Metals	36
14.	1.7.	Asbestos	36
14.2.	Hun	nan Health – Inhalation / Vapour Intrusion (Commercial / Industrial)	37
14.	2.1.	TRH	37
14.	2.2.	BTEX	37
14.	2.3.	РАН	37
14.3.	TPH	Management Limits (Commercial / Industrial)	37
14.4.	Aest	hetics	37
14.5.	Terr	estrial Ecosystems	37
14.	5.1.	Ecological Screening Levels (ESLs)	37
15. F	REVIS	ED CONCEPTUAL SITE MODEL	39
16. C	CONC	LUSIONS AND RECOMMENDATIONS	40
17. 9	STATE	MENT OF LIMITATIONS	41
18. F	REFER	ENCES	42

FIGURES

Figure 1	Site Locality
Figure 2	Site Layout
Figure 3	Areas of Environmental Concern
Figure 4	Sampling Point Layout Plan

TABLES

Table 1 Laboratory Analytical Results – Soils

APPENDICES

- A Survey
- B Groundwater
- C Land Titles
- D LotSearch Report
- E Planning Certificate
- F Borehole Logs
- G Laboratory Documentation

LIST OF ABBREVIATIONS

AG	Alliance Geotechnical Pty Ltd
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AST	Aboveground storage tank
Bgs	Below ground surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
Btoc	Below top of casing
CoC	Chain of Custody
СоТ	Certificate of Title
CSM	Conceptual Site Model
DPI-W	Department of Primary Industry – Water
DSI	Detailed Site Investigation
EC	Electrical conductivity
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
GS	Geological Survey of NSW
HIL	Health Investigation Levels
HSL	Health Screening Levels
IL	Investigation Levels
LOR	[Laboratory] Limit of reporting
MS	Matrix spike
NATA	National Association of Testing Laboratories
N/A	Not applicable
ND	Not detected
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW EPA	NSW Environment Protection Authority
OCP	Organochlorine Pesticide
OPP	Organophosphorus Pesticide
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PID	Photo-ionisation detector
PSH	Phase separated hydrocarbon
PSI	Preliminary Site Investigation
QA/QC	Quality assurance/Quality control
RPD	Relative percentage difference
SAQP	Sampling Analysis and Quality Plan
SVOC	Semi-volatile organic compound
TDS	Total dissolved solids
ТРН	Total petroleum hydrocarbon

PVC	Polyvinyl Chloride
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USCS Unified Soil Classification System

UST Underground storage tank

VOC Volatile organic carbon

1. INTRODUCTION

1.1. Background

Alliance Geotechnical Pty Ltd (AG) was engaged by CIP Constructions (NSW) Pty Ltd, to undertake a Stage 1 Preliminary Site Investigation (with Limited Sampling) for 290-308 Aldington Road, Kemps Creek NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

AG has the following project appreciation:

- The site may be proposed for redevelopment, which could result in a potential commercial / industrial land use scenario; and
- A contamination assessment of the site is required as pre-purchase due diligence to inform the potential landowners of contamination risk (if any).

1.2. Objectives

The objectives of this project were to:

- Assess the potential for contamination to be present on the site as a result of past and current land use activities;
- Provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting;
- Provide advice on salinity hazards and risks for the site; and
- Provide recommendations for further investigation, management and/or remediation (if warranted).

1.3. Scope of Work

AG undertook the following scope of works to address the project objective:

- A desktop review of relevant information pertaining to the site;
- A site walkover to understand current site conditions;
- The preparation of a Sampling and Analysis Quality Plan (SAQP);
- Conduct a targeted intrusive site investigation to establish ground conditions and to facilitate the collection of representative soil samples;
- Laboratory analysis of selected samples collected during the field investigation; and
- An assessment of the contamination status of the site and the recommendation of any further remedial requirements associated with the redevelopment of the site (if necessary).

2. SITE IDENTIFICATION

The site is identified as Lot 13 in DP253503.

The approximate geographic coordinates of the middle of the site, inferred from Google Earth were 33°51'22.6"S 150°47'58.5"E.

The locality of the site is set out in **Figure 1** and lies in the jurisdiction of Penrith City Council.

The site is zoned RU2 Rural Landscape under the *Penrith City Council Local Environment Plan (LEP)* 2012. The general layout and boundary of the site is set out in **Figure 2**.

The site covers an area of 9.9 hectares.

A copy of a detail and level survey is presented in **Appendix A**.

3. GEOLOGY, ACID SULFATE SOILS, TOPOGRAPHY AND HYDROGEOLOGY

3.1. Geology

A review of the Penrith 1:100,000 Geological Series Sheet (1st Edition, 1983), indicated that the site is likely to be underlain by Middle Triassic Bringelly Shale (Rwb), comprising shale, carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff.

3.2. Acid Sulfate Soils

A review of the ASRIS Acid Sulfate Soil Risk Map for the site indicates that the site lies in an area mapped as '*No Known Occurrence*' with respect to acid sulfate soils. Land management activities are not likely to be affected by acid sulfate soil materials.

Further assessment of acid sulfate soils in the context of this investigation is considered by AG as not warranted.

3.3. Topography

The site is located at an elevation of approximately 50m – 88m Australian Height Datum (AHD). Topography of the site slopes towards the south west.

3.4. Hydrogeology

Surface water courses proximal to the site included Kemps Creek, located approximately 800 m to the south west of the site.

Based on distances to the nearest surface water course and the site topography, groundwater flow in the vicinity of the site is considered likely to be towards the west.

A review of the NSW Office of Water groundwater database

(<u>www.realtimedata.waternsw.com.au/water.stm</u>) undertaken on 3 October 2019 indicated there were no registered groundwater features located within a 500m radius of the site.

A copy of the NSW Office of Water search record is presented in Appendix B.

3.5. Salinity Hazard Map

The site is located within the area of Western Sydney included in the Salinity Potential Map 2002. Based upon interpretation from the geological formations and soil groups presented on the map, the site is located in a region of moderate salinity potential.

The moderate classification is attributed to scattered areas of scalding and indicator vegetation, in areas where concentrations have not been mapped. Saline areas may occur in this zone, which have not been identified or may occur if risk factors change adversely.

4. SITE HISTORY AND LAND USE

4.1. Land Titles

A search of historical land title ownership was undertaken. The search results indicate that registered proprietors of the site since 1913, have been private individuals (including a builder and a dairy farmer) and several companies including Fletcher & Pickett Proprietary Limited, Littleham Proprietary Limited, Stockwell Holdings Proprietary Limited, LC O'Neil Enterprises Pty Limited, Unit Constructions Limited, and Number One Fleurs Pty Limited.

There were no easements or leases reported for the site.

The results of the land title ownership search indicate a potential for land contaminating activities to have been undertaken on the site, specifically dairy farming. Further assessment of these potential land contaminating activities, in the context of other historical information identified during this investigation and site walkover observations, is considered warranted.

A copy of the land title search record is presented in Appendix C.

4.2. Aerial Imagery

A review of selected historical aerial imagery of the site was undertaken. Observations made of the imagery considered relevant to this investigation, are presented in **Table 4.2**.

Image Date	Site Features	Surrounding Land Use Settings
1947	Site appears to be undeveloped oper paddock.	Mostly open paddock, with some rural residential immediately to the north.
1955	No significant change from previous image.	No significant change from previous image.
1965	Some significant earthworks along the western boundary of the site.	e No significant change from previous image.
1970	No significant change from previous image.	No significant change from previous image.
1982	Two potential dwellings have appeared on site, one in the eastern portion and the other in the north western corner of the site. A damn basin has appeared in the central western portion of the site.	Some dwellings have appeared to the north and south of the site.
1991	Three potential poultry sheds have appeared in the western portion of the site, as well as a driveway connecting the eastern dwelling to the main street to the west.	l Further build-up of rural residential properties to the north.

Table 4.2. Aerial Imagery Observations

Image Date	Site Features	Surrounding Land Use Settings
2005	A fourth shed has appeared immediately to the east of the initial three. A small sediment basin has also appeared in the south west corner of the site.	Further build-up of rural residential properties to the south.
2015	Some filling has occurred to potentially level the pad to the north of the eastern dwelling.	No significant change from previous image.
2019 (Nearmap)	No significant change from previous image.	No significant change from previous image.

The aerial imagery review indicated a potential for land contaminating activities to have been undertaken, specifically poultry farming (between 1982 and 2019) and localised uncontrolled filling (between 2005 and 2019).

Further assessment of potential poultry farming and uncontrolled filling activities, in the context of other historical information identified during this investigation and site walkover observations, is considered warranted.

A copy of the LotSearch Enviro Pro Report is presented in **Appendix D**.

4.3. Anecdotal Information

There was no anecdotal information provided to AG as part of this project.

4.4. Incident Reports

There was no anecdotal information provided to AG as part of this project.

4.5. Complaints History

There was no complaints history provided to AG during the investigation.

4.6. Previous Contamination Assessments

There were no previous contamination assessment reports made available to AG during this investigation.

5. REGULATORY RECORDS

5.1. NSW EPA CLM Act Record of Notices

A search of the publicly available online NSW EPA CLM Act Record of Notices was completed. The results indicated that the site was not the subject of any notifications under Section 58 of the *Contaminated Land Management Act 1997*.

A copy of the CLM Act Record of Notices search record is presented within the LotSearch Enviro Pro Report, presented in **Appendix D**.

5.2. NSW EPA POEO Act Register of Licences, Applications and Notices

A search of the publicly available online NSW EPA Record of Notices was completed. The results indicated that the site was not the subject of any licences, applications, notices, audits or pollution studies or reduction programs under Section 308 of the *Protection of the Environment Operations Act 1997*.

A copy of the POEO Act Register of Licences, Applications and Notices search record is presented within the LotSearch Enviro Pro Report, presented in **Appendix D**.

5.3. NSW EPA CLM Act Register of Notified Sites

A search of the publicly available online register of sites notified to the NSW EPA under Section 60 of the *Contaminated Land Management Act 1997*, was undertaken on 3 October 2019. The results indicated that no sites within the suburb of South Hurstville were contained on the register.

A copy of the NSW EPA CLM ACT Register of Notified Sites is presented within the LotSearch Enviro Pro Report, presented in **Appendix D**.

5.4. Section 10.7 Planning Certificate

A copy of the planning certificate issued for the site under Section 10.7 of the Environmental Planning and Assessment Act was reviewed. The certificate indicated that, within the meaning of the Contaminated Land Management Act, the site was not:

- Significantly contaminated land;
- Subject to a management order;
- The subject of an approved voluntary management proposal;
- Subject to an ongoing maintenance order; or
- The subject of a site audit statement.

A copy of the planning certificate is presented in **Appendix E**.

5.5. SafeWork NSW Stored Chemical Information Database (SCID)

A search of Safe Work NSW stored chemical information database (SCID) was not undertaken for the site. A review of historical aerial imagery and historical land title ownership records for the site did not indicate a potential for licensable quantities of dangerous goods to have been historically stored on the site. AG considers that further assessment of storage of licensable quantities of dangerous goods on the site is not warranted.

6. SALINITY ASSESSMENT

6.1. Salinity Potential

The Department of Infrastructure, Planning and Natural Resources (DIPNR) Salinity Potential in Western Sydney, 2002, map was reviewed to provide an initial indication of the potential for salinity to be encountered on the site. The review indicated that the site was on the border of areas categorised as Moderate Salinity Potential.

The Moderate Salinity Potential category is defined as:

Areas on Wianamatta Group Shales and Tertiary Alluvial Terraces. Scattered areas of scalding and indicator vegetation have been noted but no concentrations have been mapped. Saline areas may occur in this zone, which have not yet been identified or may occur if risk factors change adversely. The soils are moderate to well-drained due to their elevated position in the landscape.

6.2. Salinity Processes in Western Sydney

The *Western Sydney Salinity Code of Practice* (WSROC, 2004) identifies four main salinity models in Western Sydney. Each process is required to be managed on its own merits.

6.2.1. Localized Concentrations of Salinity

Salt concentrations become locally concentrated in low lying, poorly draining areas or locations where surface or sub-surface flow is blocked by an impervious barrier (such as a foundation). High water evaporation rates result in concentrated salt accumulation.

6.2.2. Shale Soil Landscapes

Where duplex (texture contrast) soils exist (as is often the case on shale soil landscapes) water moves more easily through the topsoil than the sub-soil. This generally results in lateral movement of moisture across the top of the less permeable B-Horizon (generally clay). The surface expression of salinity occurs in areas where this water accumulates and seeps to the surface and where evaporation of this moisture causes salts to concentrate. This is common on lower slopes or breaks in slope (such as natural or artificial flats in a mid-slope).

6.2.3. Deep Groundwater Salinity

More typical of the traditional rural model of salinity, this occurs where saline groundwater rises to a level where capillary action allows water and dissolved salts to reach the surface where they concentrate over time. Groundwater rises generally result from above average rainfall, over irrigation, construction of seepage / storm water infiltration pits and of course a reduction in deep rooting trees.

6.2.4. Deeply Weathered Soil Landscape

Salinity in these locations is related to deeply weathered soil landscapes made up of fluvial gravel, sand and clay, typically with high sulfate levels. Salinity problems in these locations are often mid-slope due to perched saline water tables.

6.3. Salinity Assessment Criteria

6.3.1. Soil Salinity

The criterion used to classify saline soil is presented in **Table 6.3.1.1**. Salinity ratings (ECe) are calculated by multiplying the electrical conductivity of a 1:5 soil: water extract by a factor dependant of soil texture ranging from 6 to 17 depending on soil type. Hazelton and Murphy (DLWC 1992) classify soil salinity on the basis of ECe, and describe the implications of the salinity classes on agriculture as follows:

Table 6.3.1.1 Soil Salinity Classification

Class	ECe (dS/m)	Implication
Non-Saline	<2	Salinity effects mostly negligible
Slightly Saline	2 – 4	Yields of sensitive crops affected
Moderately Saline	4 – 8	Yields of many crops affected
Very Saline	8 – 16	Only tolerant crops yield satisfactorily
Highly Saline	>16	Only a few very tolerant crops yield satisfactorily

6.3.2. Aggressivity

The exposure classification or soil aggressivity levels for concrete and steel piles, developed from AS 2159 – 2009 Piling Design and Installation, are shown in **Tables 6.3.2.1 and 6.3.2.2**.

Exposure Conditions			Exposure Classification (Aggressivity)
Sulphates (as SO₃) in soil (ppm)	рН	Chlorides in water (ppm)	Soil Conditions – B (low permeability soils (such as silts and clays) or all soils above groundwater
<5 000	>5.5	<6 000	Non-aggressive
5 000 - 10 000	4.5 – 5.5	6 000 - 12 000	Mild
10 000 - 20 000	4 – 4.5	12 000 - 30 000	Moderate
>20 000	<4	>30 000	Severe

Table 6.3.2.1 Exposure Classification for Concrete Piles

Table 6.3.2.2 Exposure Classification for Steel Piles

Exposure Conditions			Exposure Classification (Aggressivity)
рН	H Chlorides (as Cl ⁻) Resistivity (Ohm.cm) in soil (ppm)		Soil Conditions – B (low permeability soils (such as silts and clays) or all soils above groundwater
>5	<5 000	>5 000	Non-aggressive
4 – 5	5 000 - 20 000	2 000 – 5 000	Non-aggressive
3-4	20 000 - 50 000	1 000 - 2 000	Mild
<3	>50 000	< 1 000	Moderate

6.3.3. Sodicity

Sodic soils may be affected by very severe surface crusting, very low infiltration and hydraulic conductivity, very hard and dense subsoils, high susceptibility to gully erosion and tunnel erosion. Sodicity also affects the shrink – swell properties of a soil. The ratings of sodicity as shown in DLWC (2002) are in **Table 6.3.3.1**.

Table 6.3.3.1 Sodicity Ratings

ESP %	Rating
< 5	Non-sodic
5 – 15	Sodic
> 15	Highly sodic

6.4. Salinity Assessment Sampling and Analysis

Table 1 in DLWC (2002) provides guidance on sampling point densities for preliminary salinity assessment, based on the size of the site and the proposed land use for the site.

For the purpose of this investigation, a sampling point density of approximately 0.5-1 per hectare has been adopted, and that samples should be collected generally from each soil horizon. However, as this is an indicative preliminary salinity assessment, two sampling points have been chosen for salinity analysis.

AG understands that soil samples collected for preliminary salinity assessment should be analysed for conductivity, sulfates, chlorides, pH, resistivity and exchangeable sodium percentage.

7. SITE WALKOVER

A site walkover was undertaken on 26 September 2019 by a suitably experienced AG environmental consultant. The purpose of the site walkover was to make observations of land use activities on the site, and on properties immediately adjacent to the site.

7.1. Current Land Use Activity

The land use setting on the site appeared to be a mixture of rural residential & commercial.

7.2. Buildings and General Infrastructure

The following buildings and infrastructure were observed within the proposed site boundaries:

- Single storey brick dwelling with associated pool, attached garage, shed and septic;
- Four disused, fibro clad poultry sheds;
- Two storey brick dwelling with associated pool and shed, water tanks and septic;
- A sediment basin in the south west corner of the site; and
- A aggregate driveway throughout the site.

Image 7.2.1 View of single storey brick building in eastern portion of site



Image 7.2.2 View of three of the four poultry sheds on site



Image 7.2.3 View of the sediment basin on site



7.3. Boundary Fencing

The site boundary is securely enclosed along the entire perimeter, comprised of permanent steel and wood fencing.

7.4. Adjacent Land Use Activities

Observations made during the site walkover indicated the following land use activities adjacent to the site:

- North Rural residential;
- East Rural residential with orcharding and poultry farming;
- West Open pasture; and
- South Rural residential with a site compound.

7.5. Odours and Staining

There were no olfactory or visual evidence of contamination observed on the site, during the site walkover.

7.6. Chemical Storage

There was some visual evidence observed of chemical storage on the site in the form of a small shed in the central southern portion of the site.



Image 7.6.1 View of chemical storage shed

7.7. Underground and Aboveground Storage Tanks

There was visual evidence observed of underground storage tanks on the site in the form of septic systems attached to the dwellings.

7.8. Fill Material

Fill materials are inferred to have been used in areas including garden beds, beneath structural footings and during the construction of the buildings, as well as north of the eastern dwelling.

7.9. Wastes

Widespread storage of waste was not observed on site.

7.10. Asbestos Containing Materials

There was visual evidence observed of potential asbestos containing materials within the poultry sheds, clad to the ceiling and walls. No visual evidence observed of potential asbestos containing materials was observed on the surface of the site.



Image 7.10.1 View inside the poultry sheds

A hazardous material building survey was not within the scope of this project.

7.11. Phytotoxicity

There was no visual evidence observed to suggest significant or widespread phytotoxic impact (in the form of dieback or plant stress) in the sparse vegetation at the site. Similar observations were made of visible vegetation on land adjacent to the site.

7.12. Surface Water and Site Drainage

Visual observations made in the context of site drainage during the walkover, indicated that drainage mechanisms on the site are likely to include:

- Downpipes from roofs and gutters into subsurface drainage infrastructure; and
- Infiltration into underlying soils, where soil permeability permits.

7.13. Adjacent Ecological Receptors

No significant ecological receptors were identified nearby the site. The closest surface water feature was identified as Kemps Creek 900m to the south west of the site.

8. DATA INTEGRITY ASSESSMENT

AG has relied on the following sources of data while undertaking this investigation:

- AG field observations during the site walkover;
- Penrith City Council;
- Department of Land and Water Conservations;
- Department of Primary Industries Water;
- Australian Soil Resource Information System;
- Google Earth;
- National Environment Protection Council;
- Nearmap;
- NSW Environment Protection Authority;
- NSW Land and Property Information; and
- Water NSW.

Based on AG's experience and professional judgement, the data obtained from the sources relied upon, is considered to be adequately precise, accurate, representative, complete and comparable within the objectives of this investigation and for the purpose of drawing conclusions regarding land contamination risks at the site.

9. PRELIMINARY CONCEPTUAL SITE MODEL

9.1. Areas of Environmental Concern

A conceptual site model (CSM) has been completed using information from desk-based information and from completion of a site walkover. The methods used in the CSM follow the Contaminated Land Management risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept. For a site to be designated as Contaminated Land, a plausible linkage between the identified Sources, Pathways and Receptors must be demonstrated.

Overall, the site setting is considered to be of medium environmental sensitivity, due to the following reasons:

- The site is within close proximity to the Kemps Creek (~800m SW);
- The site is underlain by an unconfined aquifer; and
- The site is zoned as RU2 Rural Landscape.

AG notes that the contaminant laydown mechanism for these areas of environmental concern is considered likely to be 'top down'.

The assessment identified areas of environmental concern (AECs) and contaminants of potential concern (COPC) which have the potential to be (or are) present on site. The AECs identified is presented in **Figure 3** and associated COPC are presented in **Table 1**.

Table	e.1:	AEC	and	CSM

ID					
AEC01	Potential Sources:				
	Onsite sources identified:				
	 Poultry farming; 				
	 Groundwater sediment basin; 				
	 Imported fill materials; 				
	 Asbestos associated with imported fill materials. 				
	Offsite sources identified:				
	No significant sources identified offsite.				
	Potential Pathways:				
	The potential contamination pathways are considered to be as follows:				
	 Inhalation/ingestion of contaminants released in dust during redevelopment by site workers; 				
	 Direct contact, ingestion or inhalation of soil contaminants by future site inhabitants: 				
	 Migration of volatile compounds into proposed buildings/basements causing asphyxiation or risk of explosion; 				
	 Migration of vapours into confined spaces within proposed on-site buildings/basements followed by inhalation by future inhabitants. 				

	 <u>Potential Receptors:</u> Relevant potential receptors are considered to include: Onsite construction and maintenance workers; Third parties during construction (adjacent site users and adjacent residents); Flora and Fauna; Future residents/end users; Neighbouring residents; Kemps Creek; and Unconfined Aquifer (groundwater may be used for irrigation/ industrial use).
AECO2	Potential Sources: Onsite sources identified: • Imported fill materials; • Asbestos associated with imported fill materials. Offsite sources identified: No significant sources identified offsite. Potential Pathways: The potential contamination pathways are considered to be as follows: • Inhalation/ingestion of contaminants released in dust during redevelopment by site workers; • Direct contact, ingestion or inhalation of soil contaminants by future site inhabitants; • Migration of volatile compounds into proposed buildings/basements causing asphyxiation or risk of explosion; • Migration of vapours into confined spaces within proposed on-site buildings/basements followed by inhalation by future inhabitants. Potential Receptors: Relevant potential receptors are considered to include: • Onsite construction and maintenance workers; • Third parties during construction (adjacent site users and adjacent residents); • Flora and Fauna; • Future residents/end users; • Neighbouring residents; • Kemps Creek; and • Unconfined Aquifer (groundwater may be used for irrigation/ industrial use).

9.2. Land Use Setting

AG understands that the proposed development works would result in a commercial/industrial land use setting.

Based on the proposed development works and guidance provided in Section 2.2 of Schedule B (1) of the National Environment Protection Measure (Assessment of Site Contamination) 2013 (ASC NEPM 2013), AG considers it reasonable to adopt the 'HIL D – commercial / industrial such as shops, offices, factories and industrial sites.

9.3. Human Health - Direct Contact

During the proposed development works, it is considered that a direct contact exposure pathway may exist and be achieved by inhalation/ingestion in dust during redevelopment by Site workers. There also poses the risk of direct contract, ingestion or inhalation of soil contaminants by future site occupants.

9.4. Human Health - Inhalation / Vapour Intrusion

In order for a potentially unacceptable inhalation / vapour intrusion human health exposure risk to exist, a primary vapour source (e.g. underground storage tank) or secondary vapour source (e.g. significantly contaminated soil or groundwater) would typically need to be present.

The historical evidence reviewed indicated a low likelihood for a potential primary source to be present on the site.

The same historical evidence indicated a potential land use activity to be uncontrolled filling. The excavation, transport, placement and spreading of imported (uncontrolled) fill material involves significant disturbance of soils which typically results in volatilisation of vapour producing contaminants. On that basis, the potential for vapours to be present in soils on site at concentrations which might present an unacceptable exposure risk, is considered to be moderate.

AG will consider data obtained during fieldwork in the context of inhalation / vapour intrusion risk.

9.5. Human Health - Aesthetics

Section 3.7 of Schedule B (1) ASC NEPM 2013 advises that there are no specific numeric aesthetic guidelines, however site assessment requires a balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity.

As a conservative measure, AG will consider data obtained during fieldwork in the context of aesthetics risk.

9.6. Management Limits for Petroleum Hydrocarbon Compounds

NEPM 2013 notes that there are a number of policy considerations which reflect the nature and properties of petroleum hydrocarbons:

- formation of observable light non-aqueous phase liquids (LNAPL);
- fire and explosive hazards; and
- effects on buried infrastructure (e.g. penetration of or damage to, in-ground services by hydrocarbons).

Section 2.9 of Schedule B (1) ASC NEPM 2013 includes 'management limits' to avoid or minimise these potential effects. Application of the management limits requires consideration of site-specific factors such as the depth of building basements and services and depth to groundwater, to determine the maximum depth to which the limits should apply. Section 2.9 of Schedule B (1) ASC NEPM 2013 also notes that management limits may have less relevance at operating industrial sites which have no or limited sensitive receptors in the area of potential impact, and when management limits are exceeded, further site-specific assessment and management may enable any identified risk to be addressed.

9.7. Ecological Health – Terrestrial Ecosystems

Section 3.4.2 of Schedule B (1) ASC NEPM 2013 suggests that a pragmatic risk-based approach be taken in applying ecological investigation levels and ecological screening levels in residential and commercial/ industrial land use settings.

AG considers that further assessment of terrestrial ecosystems exposure risks is warranted.

10. DATA QUALITY OBJECTIVES

NEPM ASC 2013 provides guidance on the development of data quality objectives (DQO) using a seven-step process.

The DQO for this project are set out in **Sections 10.1** to **10.7** of this report.

10.1. Step 1: State the problem

The first step involves summarising the contamination problem that requires new environmental data and identifying resources available to solve the problem.

The objectives of this project are to:

- Assess the potential for contamination to be present on the site as a result of past and current land use activities;
- Provide advice on whether the site would be suitable (in the context of land contamination) for the proposed land use setting; and
- Provide recommendations for further investigation, management and/or remediation (if warranted).

The project is being undertaken because:

- The site is proposed for redevelopment which would result in a commerical / industrial land use scenario; and
- A contamination assessment of the site is required for pre-purchase due diligence.

The project team identified for this project consists of suitably experienced environmental consultants from AG.

The regulatory authorities identified for this project include NSW EPA and the local council.

10.2. Step 2: Identify the decision/goal of the study

The second step involves identifying decisions that need to be made about the contamination problem and the new environmental data required to make them.

The decisions that need to be made during this project include:

- Is the environmental data collected for the project, suitable for assessing relevant land contamination exposure risks?
- Do the concentrations of identified contaminants of potential concern (COPC) present an unacceptable exposure risk to identified receptors, for the proposed land use setting?
- Is the site suitable for the proposed land use setting, in the context of land contamination?

10.3. Step 3: Identify the information inputs

The third step involves identifying the information needed to support decisions and whether new environmental data will be needed.

The inputs required to make the decisions set out in Section 10.2 for this project, will include:

- Data obtained during searches of the site's history;
- The nature and extent of sampling at the site, including both density and distribution;
- Samples of relevant site media;
- The measured physical and/or chemical parameters of the site media samples (including field screening and laboratory analysis, where relevant); and
- Assessment criteria adopted for each of the media sampled.

Taking into consideration the objectives of this project, and the conceptual site model and land use setting presented in **Section 9** of this project, the following assessment criteria relevant to the proposed land use setting have been adopted for this project:

- Human health direct contact HILs in Table 1A (1) in NEPM ASC 2013 and HSLs in Table B4 of Friebel, E & Nadebaum, P (2011);
- Human health inhalation/vapour intrusion HSLs in Table 1 (A) in NEPM ASC 2013;
- Human health (asbestos) absence / presence for preliminary screening, and no visible ACM on surface;
- Petroleum hydrocarbon compounds (management limits) Table 1 B (7) of NEPM ASC 2013;
- Ecological Investigation and Screening Levels as calculated per NEPM ASC 2013 Table 1 (B) 1-6; and
- Aesthetics no highly malodorous site media (e.g. strong residual petroleum hydrocarbon odours, hydrogen sulphide in site media, organosulfur compounds), no hydrocarbon sheen on surface water, no discoloured chemical deposits or soil staining with chemical waste other than of a very minor nature, no large monolithic deposits of otherwise low risk material (e.g. gypsum as powder or plasterboard, cement kiln dust), no presence of putrescible refuse including material that may generate hazardous levels of methane such as a deep-fill profile of green waste or large quantities of timber waste, and no soils containing residue from animal burial (e.g. former abattoir sites).

10.4. Step 4: Define the boundaries of the study

The fourth step involves specifying the spatial and temporal aspects of the environmental media that the data must represent to support decisions.

The spatial extent of the project will be limited to the subject investigation area as defined by its boundaries (refer **Figure 2**).

The temporal boundaries of the project include:

- The project timeframe presented in the AG proposal for this project,
- Unacceptable weather conditions at the time of undertaking fieldwork, including rainfall, cold and/or heat;
- Access availability of the site (to be defined by the site owner/representative); and
- Availability of AG field staff (typically normal daylight working hours, Monday to Friday).

The lateral extent that contamination is expected to be distributed across, based on the conceptual site model, is defined by the inferred boundaries of the areas of environmental concern (AEC).

The vertical extent that contamination is expected to be distributed across, based on the conceptual site model and the project scope, is likely to be limited to shallow soils and fill material and shallow aquifers.

The scale of the decisions required will be based on the entire site.

Constraints which may affect the carrying out of this project may include access limitations, presence of above and below ground infrastructure, and hazards creating health and safety risks.

10.5. Step 5: Develop the analytical approach (or decision rule)

The fifth step involves defining the parameter of interest, specifying the action level, and integrating information from Steps 1 to 4 into a single statement that gives a logical basis for choosing between alternative actions.

10.5.1. Rinsate Blanks

One rinsate blank will be collected and scheduled for analysis, for each day of sampling undertaken, if non-disposable sampling equipment was used on that day. The rinsate blank will be analysed for at least one of the analytes the sample/s collected that day are being scheduled for analysis for (with the exception of asbestos).

10.5.2. Trip Spikes and Trip Blank Samples

One trip spike and trip blank sample will be used and scheduled for analysis, for each day of groundwater sampling undertaken, if site samples being collected that day are being analysed for volatile contaminants of concern (typically BTEX and/or TRH).

10.5.3. Laboratory Analysis Quality Assurance / Quality Control

The analytical laboratory QA/QC program will typically include laboratory method blank samples, matrix spike samples, surrogate spike samples, laboratory control samples, and laboratory duplicate samples.

10.5.4. If/Then Decision Rules

AG has adopted the following 'if/then' decision rules for this project:

- If the result of the assessment of field data and laboratory analytical data is considered acceptable, then that field data and laboratory analytical data is suitable for interpretation within the scope of this project; and
- If the field data and laboratory analytical data is within the constraints of the assessment criteria adopted for this project (refer **Section 10.3**), then the contamination exposure risks to identified receptors, are considered acceptable.

In the event the assessment of field data and/or laboratory analytical data results in the data being not suitable for interpretation, then AG will determine if additional data is required to allow interpretation to be undertaken.

In the event that field data and/or laboratory analytical data exceeds the assessment criteria adopted for this project (refer **Section 10.3**), AG will undertake an assessment of the exceedance in the context of the project objectives to determine if additional data is required and whether management and/or remediation is required.

10.6. Step 6: Specify the performance or acceptance criteria

The sixth step involves specifying the decision maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. When assessing contaminated land, there are generally two types of errors in decision making:

- Contamination exposure risks for a specific land use setting are acceptable, when they are not; and
- Contamination exposure risks for a specific land use setting are not acceptable, when they are.

AG will mitigate the risk of decision error by:

- Calculation of the 95% upper confidence limit (UCL) statistic to assess the mean concentration of relevant contaminants of potential concern;
- Assignment of fieldwork tasks to suitably experienced AG consulting staff, and suitably experienced contractors;
- Assignment of laboratory analytical tasks to reputable NATA accredited laboratories; and
- Assignment of data interpretation tasks to suitably experienced AG consulting staff, and outsourcing to technical experts where required.

AG will also adopt a range of data quality indicators (DQI) to facilitate assessment of the completeness, comparability, representativeness, precision and accuracy (bias).

Completeness				
Field Considerations	Assessment Criterion	Laboratory Considerations	Assessment Criterion	
Critical locations sampled	Refer Section 10.7.1	Critical samples analysed according to DQO	Refer Section 10.7.6	
Critical samples collected	Refer Section 10.7.1	Analytes analysed according to DQO	Refer Section 10.7.6	
SOPs appropriate and complied with	100%	Appropriate laboratory analytical methods and LORs	Refer Section 10.7.6	
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	Sample documentation complete	All sample receipt advices, all certificates of analysis	
		Sample extraction and holding times complied with	Refer Section 10.7.7	
	Compa	rability		
Field Considerations	Assessment Criterion	Laboratory Considerations	Assessment Criterion	

Same SOPs used on each occasion	100%	Same analytical methods used by primary laboratory	Refer Section 10.7.7
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	Same LORs at primary laboratory	Refer Section 10.7.7
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	Same laboratory for primary sample analysis	All primary samples to Eurofins mgt
		Same analytical measurement units	Refer Section 10.7.7
	Representa	itiveness	
Field Considerations	Assessment Criterion	Laboratory Considerations	Assessment Criterion
Appropriate media sampled according to DQO	Refer Section 10.7.6	Samples analysed according to DQO	Refer Section 10.7.6
Media identified in DQO sampled	Refer Section 10.7.6		
	Precis	ion	
Field Considerations	Assessment Criterion	Laboratory Considerations	Assessment Criterion
Field duplicate / triplicate RPD	Minimum 5% duplicates and triplicates	Laboratory duplicates	No exceedances of laboratory acceptance criteria
	No limit for analytical results <10 times LOR		
	50% for analytical results 10-20 times LOR		
	30% for analytical results >10 times LOR		

SOPs appropriate and complied with	100%		
	Accurac	y (bias)	
Field Considerations	Assessment Criterion	Laboratory Considerations	Assessment Criterion
Field trip spikes	Recoveries between 60% and 140%	Matrix spike recovery	No exceedances of laboratory acceptance criteria
Field trip blanks	Analyte concentration <lor< td=""><td>Surrogate spike recovery</td><td>No exceedances of laboratory acceptance criteria</td></lor<>	Surrogate spike recovery	No exceedances of laboratory acceptance criteria

10.7. Step 7: Develop the plan for obtaining data

The seventh step involves identifying the most resource effective sampling and analysis design for generating the data that is required to satisfy the DQOs.

10.7.1. Sampling Point Density and Locations

Table A in NSW EPA *Sampling Design Guidelines* (1995) provides guidance on minimum sampling point densities required for site characterisation, based on detecting circular hot spots by using a systematic sampling pattern. This guidance assumes the investigator has little knowledge about the probable locations of the contamination, the distribution of the contamination is expected to be random (e.g. land fill sites) or the distribution of the contamination is expected to be fairly homogenous (e.g. agricultural lands).

However, Section 3.1 of NSW EPA *Sampling Design Guidelines* (1995) states that a judgemental sampling pattern can be used where there is enough information on the probable locations of contamination. Further to this, Section 6.2.1 of ASC NEPM 2013 states that the number and location or sampling points is based on knowledge of the site and professional judgement. Sampling should be localised to known or potentially contaminated areas identified from knowledge of the site either from site history or an earlier phase of site investigation. Judgemental sampling can be used to investigate sub-surface contamination issues in site assessment.

Table 1 in the *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, May 2009,* Western Australia Department of Health (DOH (2009)) indicates that where the 'likelihood of asbestos' is assessed as "possible" or "suspect", the investigation regimen should include a sampling density that is either judgemental or the same as that set out in Table A of NSW EPA Sampling Design Guidelines (1995) for assessing asbestos.

As this project has included gathering data which provides a reasonable understanding of site history (in the context of potential areas of environmental concern on the site) and taking into consideration Table 1 in WA DOH (2009), it is considered reasonable to adopt a systematic sampling pattern, with up to 11 sampling points.

The locations of the sampling points are set out in Figure 4.

10.7.2. Sampling Methodology

The sampling point methodology presented in **Table 10.7.2** will be used for this project. The methodology is based on a range of factors considered relevant to this project, including:

- The identified contaminants of potential concern;
- The suspected laydown mechanisms for those contaminants of concern;
- The suspected likely depth of contamination; and
- Site specific constraints which affect the type of sampling techniques suited to the site.

Table 10.7.2 Proposed Sampling Methodology

AEC	Sampling Point ID	Method	Target Depth of Sampling Point (m bgl)
AEC01	BH01 to BH10, SS01	Solid Flight Auger, Push Tube, Hand Tools	1.0m bgl, practical refusal or 0.3m into natural material, whichever occurs first, Surface sample.
AEC02	SS02	Hand Tools	Surface sample.

Reference will also be made to Table 5 in WA DOH (2009) for the sampling and screening of fill soils for the presence of asbestos, where practical. The application of asbestos screening criteria published in NEPM ASC 2013 may be limited.

10.7.3. Identification, Storage and Handling of Samples

Sample identifiers will be used for each sample collected, based on the sampling point number and the depth/interval the sample was collected from, e.g. a sample collected from BH03 at a depth of 0.2m below ground level, would be identified as BH03-0.2.

Project samples will be stored in laboratory prepared glass and plastic containers (and zip lock bags if collected for asbestos).

Soil samples analysed for organic contaminants of concern will be placed in insulated container/s with ice.

Samples will be transported to the relevant analytical laboratory, with chain of custody (COC) documentation that includes the following information:

- AG project identification number;
- Each sample identifier;
- Date each sample was collected;
- Sample type (e.g. soil or water);
- Container type/s for each sample collected;
- Preservation method used for each sample (e.g. ice);
- Analytical requirements for each sample and turnaround times; and
- Date and time of dispatch and receipt of samples (including signatures).

10.7.4. Decontamination

All sampling equipment used during the soil investigation consisted of location specific nitrile gloves, as such decontamination was deemed unnecessary. To avoid cross contamination via the auger, samples were collected from the centre of the soil formation, ensuring to avoid sampling materials which had come into contact with the auger.

Non-disposable equipment used during the groundwater investigation (i.e. interface probe), will be decontaminated before and in between sampling events, to mitigate potential for cross contamination between samples collected. The decontamination methodology to be adopted for this project will include:

- Washing relevant sampling equipment using potable water with a phosphate free detergent (i.e. Decon 90 or similar) mixed into the water;
- Rinsing the washed non-disposable sampling equipment with distilled or de-ionised water; • and
- Air drying as required.

Disposable sampling equipment (plastic bailers) will be used during the groundwater sampling regime.

10.7.5. Laboratory Selection

OCP/OPP

PCB

PFAS

The analytical laboratories used for this project will be NATA accredited for the analysis undertaken.

10.7.6. Laboratory Analytical Schedule

Project samples will be scheduled for NATA accredited laboratory analysis, using a combination of:

- Observations made in the field of the media sampled; and
- The contaminants of potential concern (COPC) identified for the area of environmental concern that the sample was collected from.

Based on site history, AG has adopted the laboratory analytical schedule (and associated upper limiting quantities) presented in Table 10.7.6 for this project.

10.7.7. Laboratory Holding Times, Analytical Methods and Limits of Reporting

The laboratory holding times, analytical methods and limits of reporting (LOR) being used for this project, are presented in Table 10.7.7.

Table 10.7.7 Laboratory Holding Times, Analytical Methods and Limits of Reporting				
Analyte	Holding Time	Analytical Method	Limit of Reporting	
		Soil		
BTEX and TRH C ₆ -C ₁₀	14 days	USEPA 5030, 8260B and 8020	0.2-0.5 (mg/kg)	
TRH >C10-C40	14 days	USEPA 8015B & C	20-100 (mg/kg)	
VOC	14 days	USEPA 8260	0.1-0.5 (mg/kg)	
РАН	14 days	USEPA 8270	0.1-0.5 (mg/kg)	

0.2 (mg/kg)

0.2 (mg/kg)

0.005 (mg/kg)

USEPA 8081

USEPA 8270

14 days

28 days

14 days

Inhouse based on USEPA 537 V1.1
Analyte	Holding Time	Analytical Method	Limit of Reporting							
Metals (ex. Hg & Cr ^{vi})	6 months	USEPA 8015B & C	0.05 – 2 (mg/kg)							
Hg & Cr ^{vi}	28 days	USEPA 8015B & C	0.05 – 2 (mg/kg)							
Asbestos	No limit	AS4964:2004	Absence / presence							
Asbestos	No limit	Inhouse Method	0.001% w/w							
Water										
BTEX and TRH C6-C10	14 days	NEPM Schedule B3	0.02-0.1 (mg/L)							
TRH >C ₁₀ -C ₄₀	14 days	NEPM Schedule B3	0.1 (mg/L)							
VOC	714days	USEPA 8260	0.1-0.5 (mg/L)							
РАН	7 days	USEPA 8270, 8100, NEPM Schedule B3	0.001 (mg/L)							
OCP/OPP	7 days	USEPA 8141, USEPA 8081, USEPA 8270, NEPM Schedule B3	0.002-0.0005 (mg/L)							
РСВ	7 days	USEPA 8082, NEPM Schedule B3	0.001-0.005 (mg/L)							
PFAS	14 days	Inhouse based on USEPA 537 V1.1	0.01-0.05 (μg/L)							
Metals (ex. Hg & Cr ^{vi})	6 months	USEPA 6010, 6020	0.05 – 2 (mg/L)							
Hg & Cr ^{VI}	28 days	USEPA 6010, 6020	0.05–2 (mg/L)							

11. INTRUSIVE SAMPLING METHODOLOGY

Soil sampling and analysis were undertaken with reference to the following documents:

- NSW EPA 1995. *Contaminated Sites Sampling Design Guidelines,* NSW Environment Protection Authority.
- NEPM 1999. 'National Environment Protection (Assessment of Site Contamination) Measure. Schedule B (2) Guideline on Data Collection, Sample Design and Reporting.' National Environmental Protection Council, Adelaide.
- Standards Australia. 2005.' AS 4482.1. Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and Semi-volatile Compounds.' <u>www.standards.com.au</u>.
- Standards Australia. 1999. 'AS 4482.2. Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 2: Volatile Compounds'. <u>www.standards.com.au</u>.
- Standards Australia. 1998. 'AS/NZS 5667.11:1998. Water Quality Sampling. Part 11: Guidance on Sampling of Groundwater.' <u>www.standards.com.au</u>.
- Standards Australia. 1998. 'AS/NZS 5667.1:1998. Water Quality Sampling. Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques and the Preservation and Handling of Samples'. <u>www.standards.com.au</u>.
- ACS NEPM. 2013 National Environment Protection (Assessment of Site Contamination) Measure 2013 Schedule B (1) Investigation Levels for Soil and Groundwater

11.1. Scope of Fieldworks

To clarify and quantify the existence of the potential contaminants, a sampling analysis and quality plan (SAQP) was developed. The site works were performed on the 4^{TH} October 2019, in accordance with the SAQP and supervised by AG environmental scientists at all times.

The scope of the investigation was developed based upon the findings of the desktop investigation and the site walkover and the SAQP subsequently developed. Based upon this approach the following scope of works was performed:

- Completion of a site-specific Safe Work Method Statement in accordance with AG health and safety policy;
- Completion of eleven (12) soil sampling locations (using solid flight auger, push tube and hand tool techniques);
- Collection of asbestos samples from any surface sample locations;
- Collection of discrete soil samples every 1.0 m recovered or change of strata from the drilling of the soil bores;
- Collection and analysis of quality assurance/quality control (QA/QC) samples in accordance with NEPM requirements; and
- Analysis of twelve (12) primary soil and two (2) quality control samples.

11.2. Laboratory Analysis

All soil samples will be forwarded to a NATA accredited laboratory for analysis of the analytes listed below. Eurofins | Mgt shall be used for the analysis of primary samples and ALS for the analysis of interlaboratory samples.

12. FIELDWORK

12.1. Soil Sampling

Soil sampling was undertaken by AG on 4th October 2019. A total of ten (10) boreholes (BH01-BH10) and two (2) surface samples (SS01-SS02) were advanced across the site using a combination of track mounted drill rigs or hand tools until reaching inferred natural materials between 0.3-0.7m bgl. Samples for potential analysis were collected from the near surface, at 1.0 m intervals within the soil profile or with change of strata, and in areas of observed contamination. Each soil sample was collected using a new clean pair of nitrile gloves and placed in the appropriate acid rinsed sample containers provided by the laboratory.

Upon completion of the soil boring, each borehole was backfilled with excavated soils at the completion of the sampling task at each sampling point. Soil bore logs were maintained in the field by an AG environmental scientist for all exploratory holes. Field observations such as lithology, odours, staining, depth of water etc. were noted on the logs. The logs are presented within **Appendix F**.

Each sampling point established was marked on a site plan. The locations of these sampling points are presented in **Figure 4**.



Image 12.1.1 View of sampling technique as observed in BH10

12.2. Site Geology

Observations were made of soils encountered during sampling work. These observations were recorded on borehole logs. A copy of these logs is presented in **Appendix F**.

Anthropogenic materials were not observed in the fill profile of any of the locations sampled. Inferred natural material was encountered in every borehole sampling location (BH01-BH10). Soils were generally observed to comprise fill topsoil followed by residual silty clays overlying shale bedrock.



Image 12.2.1 Example of soil profile, as observed within BH08

12.3. Odours

Olfactory evidence of contamination was not detected in any of the soil samples collected.

12.4. Staining

Visual evidence of contamination in the soil samples collected was not detected.

12.5. Potential Asbestos Containing Materials

Visual evidence of potential asbestos containing materials (ACM) at each soil sampling point was not observed.

13. LABORATORY ANALYSIS

The samples collected were transported to the analytical laboratory, using chain of custody (COC) protocols. A selection of these samples was scheduled for analysis, with reference to the relevant COPC identified for the AEC that the samples were collected from.

All soil and groundwater samples were forwarded to the NATA accredited laboratory for analysis of the analytes listed below. Eurofins | Mgt were used for the analysis of primary samples and SGS for the analysis of interlaboratory samples.

Table 13.1 details the analysis undertaken for soil samples.

Table 13.1 Soil Analytical Schedule

		Analytical Suite											
Sample ID	ткн	ВТЕХ	РАН	8 Metals [*]	Asbestos (NEPM 500ml)	оср/орр	PCBs	Nutrients	Asbestos ID	1			
BH21-0.4-0.5, BH2-0.1-0.2, BH3-0.1-0.2, BH4-0.2-0.3, BH5- 0.1-0.2, BH6-0.1-0.2, BH7-0.1- 0.3, BH8-0.0-0.2, BH9-0.0-0.2, BH10-0.0-0.2, SS02	x	x	x	x	x	x	x	x					
SS01				х				х					
FRAG-1									Х				
TRIP SPIKE / TRIP BLANK		х											

*Metals: As, Cd, Cr, Cu, Hg, Ni, Pb, Zn

A copy of the analytical laboratory certificates of analysis, is presented in Appendix G.

The sample analytical results were tabulated and presented in the attached Table LAR1.

14. DATA QUALITY INDICATOR ASSESSMENT

14.1. Completeness

An assessment of the completeness of data collected was undertaken, and the results presented in **Table 14.1**.

Table 14.1 Completeness DQI

Field Considerations	Target	Actual	Comment
Critical locations sampled	11	11	Performance against indicator considered acceptable.
Critical samples collected	11	11	Performance against indicator considered acceptable.
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Field documentation complete	All sampling point logs, calibration logs and chain of custody forms	All sampling point logs, calibration logs and chain of custody forms	Performance against indicator considered acceptable.
Laboratory Considerations	Target	Actual	Comment
Critical samples analysed according to DQO	Refer Section 10.7.6	100%	Performance against indicator considered acceptable.
Analytes analysed according to DQO	Refer Section 10.7.6	100%	Performance against indicator considered acceptable.
Appropriate laboratory analytical methods and LORs	Refer Section 10.7.7	100%	Performance against indicator considered acceptable.
Sample documentation complete	All sample receipt advices, all certificates of analysis	100%	Performance against indicator considered acceptable.
Sample extraction and holding times complied with	Refer Section 10.7.7	100%	Performance against indicator considered acceptable.

The data collected is considered to be adequately complete within the objectives and constraints of the project.

14.2. Comparability

An assessment of the comparability of data collected was undertaken, and the results presented in **Table 14.2**.

Table 14.2 Comparability DQI

Field Considerations	Target	Actual	Comment
Same SOPs used on each occasion	100%	100%	Performance against indicator considered acceptable.
Climatic conditions	Samples stored in insulated containers with ice, immediately after collection	100%	Performance against indicator considered acceptable.
Same types of samples collected, and handled/preserved in same manner	All soil samples same size, all stored in insulated containers with ice	100%	Performance against indicator considered acceptable.
Laboratory Considerations	Target	Actual	Comment
Same analytical methods used by primary laboratory	Refer Section 10.7.7	100%	Performance against indicator considered acceptable.
Same LORs at primary laboratory	Refer Section 10.7.7	100%	Performance against indicator considered acceptable.
Same laboratory for primary sample analysis	All primary samples to Eurofins mgt	100%	Performance against indicator considered acceptable.
Same analytical measurement units	Refer Section 10.7.7	100%	Performance against indicator

The data collected is considered to be adequately comparable within the objectives and constraints of the project.

14.3. Representativeness

An assessment of the representativeness of data collected was undertaken, and the results presented in **Table 14.3**.

Table 14.3 Representativeness DQI

Field Considerations	Target	Actual	Comment
Appropriate media sampled according to DQO	Refer Section 10.7.2	100%	Performance against indicator considered acceptable.
Media identified in DQO sampled	Refer Section 10.7.2	100%	Performance against indicator considered acceptable.
Laboratory Considerations	Target	Actual	Comment
Samples analysed according to DQO	Refer Section 10.7.6	Refer comments	Performance against indicator considered acceptable.

The data collected is considered to be adequately complete within the objectives and constraints of the project.

14.4. Precision

An assessment of the precision of data collected was undertaken, and the results presented in **Table 14.4**

Table 14.4 Precision DQI

Field Considerations	Target	Actual	Comment
SOPs appropriate and complied with	100%	100%	Performance against indicator considered acceptable.
Laboratory Considerations	Target	Actual	Comment
Laboratory duplicates	No exceedances of laboratory acceptance criteria	No exceedances	Performance against indicator considered acceptable.

The data collected is considered to be adequately precise within the objectives and constraints of the project.

14.5. Accuracy

An assessment of the precision of data collected was undertaken, and the results presented in **Table 14.5**.

Table 14.5 Accuracy DQI

Laboratory Considerations	Target	Actual	Comment
Laboratory method blank	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Matrix spike recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Surrogate spike recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.
Laboratory control sample recovery	No exceedances of laboratory acceptance criteria	No exceedances of laboratory acceptance criteria	Performance against indicator considered acceptable.

The data collected is considered to be adequately accurate within the objectives and constraints of the project.

15. DISCUSSION

A discussion on comparison of laboratory analytical results and field observations, in the context of the assessment criteria adopted for this project, is presented in **Sections 15.1** to **15.4**.

15.1. Human Health - Direct Contact (Commercial / Industrial)

15.1.1. TRH

The concentrations of TRH C₆-C₁₀, >C₁₀-C₁₆, >C₁₆-C₃₄ and >C₃₄-C₄₀ detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

15.1.2. BTEX

The concentrations of benzene, toluene, ethyl benzene and xylenes detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

15.1.3. PAH

The concentrations of naphthalene detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

The concentrations of benzo(a)pyrene TEQ detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

The concentration of total PAH detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

15.1.4. OCP

The concentration of relevant OCP compounds detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria or less than laboratory limits of reporting.

15.1.5. PCBs

The concentration of PCBs detected in the soil samples analysed, were less than laboratory limits of reporting.

15.1.6. Metals

The concentrations of arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury detected in the soil samples analysed, were less than the applicable adopted direct contact human health exposure criteria.

15.1.7. Asbestos

Asbestos was not observed or detected within any of the soil samples collected.

15.2. Human Health – Inhalation / Vapour Intrusion (Commercial / Industrial)

15.2.1. TRH

The concentrations of TRH C₆-C₁₀ (minus BTEX) and >C₁₀-C₁₆ (minus naphthalene) detected in the soil samples analysed, were less than the applicable adopted inhalation / vapour intrusion human health exposure criteria.

15.2.2. BTEX

The concentrations of benzene, toluene, ethyl benzene and xylenes detected in the soil samples analysed, were less than the applicable adopted inhalation / vapour intrusion human health exposure criteria.

15.2.3. PAH

The concentrations of naphthalene detected in the soil samples analysed, were less than the applicable adopted inhalation / vapour intrusion human health exposure criteria.

15.3. TPH Management Limits (Commercial / Industrial)

The concentrations of TRH C₆-C₁₀, >C₁₀-C₁₆, >C₁₆-C₃₄ and >C₃₄-C₄₀ detected in the soil samples analysed, were less than the applicable adopted TRH management limits or less than laboratory limits of reporting.

15.4. Aesthetics

There was limited visual evidence of foreign materials within the soil profile on site. The aesthetics assessment criteria adopted for this project, indicate that further assessment/management is not required.

15.5. Terrestrial Ecosystems

15.5.1. Ecological Screening Levels (ESLs)

The concentrations of relevant contaminants of concern detected in the soil samples analysed were less than the applicable adopted ecological screening levels (ESL) within all samples analysed.

15.6. Salinity Assessment

15.6.1. Soil Salinity

The laboratory analytical results indicated that the soils assessed to a nominal depth of 1.0m below ground surface, would classify as non-saline, with the exception of soils within the vicinity of BH4 which would classify as slightly saline, and the soils within the vicinity of BH10, which would classify as very saline.

15.6.2. Aggressivity

The laboratory analytical results of the samples analysed, indicate that the exposure classification¹ of the soils assessed to a nominal depth of 1.0m below ground surface would be:

- Concrete piles non-aggressive in the vicinity of BH2 and BH5;
- Steel piles non- aggressive in the vicinity of BH2 and BH5.

15.6.3. Sodicity

The laboratory analytical results indicate that soils assessed to a nominal depth of 1.0m below ground surface:

- in the vicinity of BH4, BH7, and BH10 would rate as sodic; and
- in the vicinity of BH1, BH2, BH5, BH8, and BH9 would rate as non-sodic.

Sodicity can be used as a measure for the erosion potential of soils. As the proposed development comprises covering a significant portion of the site with building footprints, driveways, and landscaping, erosion during operation of the new development, is considered unlikely to be a risk at the site.

¹ Table 6.4.2 (C) and Table 6.5.2 (C) in AS 2159-2009 Piling – Design and Installation

16. REVISED CONCEPTUAL SITE MODEL

Following a review of site history and subsequent intrusive field analysis, the areas of environmental concern (AEC) and contaminants of potential concern (COPC) have been revised and updated. As a result of this investigation, there were no subsequent AECs and associated COPCs identified for the site.

17. CONCLUSIONS AND RECOMMENDATIONS

Based on AG's assessment of the desktop review information, fieldwork data and laboratory analytical data, in the context of the proposed redevelopment scenario, AG makes the following conclusions:

- The detected concentrations of identified contaminants of potential concern in the soils assessed are considered unlikely to present:
 - An unacceptable inhalation / vapour intrusion human health exposure risk; or
 - An unacceptable petroleum management limit risk.
- The detected concentrations of contaminants in the soils assessed are considered unlikely to present a direct contact human health risk;
- The detected concentrations of contaminants in the soils assessed are considered unlikely to present an unacceptable ecological health risk;
- Asbestos was not observed or detected within any of the soil samples collected;
- The detected concentrations of nutrients in the soils assessed are considered to be similarly low across the entire site;
- Soils assessed onsite (up to a depth of 1.0m below ground surface) are considered to be:
 - non-saline to very saline;
 - non-aggressive to concrete piles;
 - o non-aggressive to steel piles; and
 - \circ non-sodic to sodic.
- The soil materials are considered suitable for the proposed land use setting; and
- The site is unlikely to present a high environmental risk to future tenants.

Based on the above conclusions, AG makes the following recommendations:

• As the soil materials are considered suitable for the proposed land use (in the context of contamination), no further investigation, management and/or remediation is deemed warranted.

This report, including its conclusions and recommendations, must be read in conjunction with the limitations presented in **Section 18**.

18. STATEMENT OF LIMITATIONS

The findings presented in this report are based on specific searches of relevant, government historical databases and anecdotal information that were made available during the course of this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This report has been prepared solely for the use of the client to whom it is addressed and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this report. All conclusions and recommendations made in this report are of the professional opinions of personnel involved with the project and while normal checking of the accuracy of data has been conducted, any circumstances outside the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Alliance Geotechnical Pty Ltd. Should information become available regarding conditions at the site including previously unknown sources of contamination, AG reserves the right to review the report in the context of the additional information.

This report must be reviewed in its entirety and in conjunction with the objectives, scope and terms applicable to AG's engagement. The report must not be used for any purpose other than the purpose specified at the time AG was engaged to prepare the report.

Logs, figures, and drawings are generated for this report based on individual AG consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for its inclusion in other reports, plans or documents, nor should that data and/or information be separated from this report in any way.

Should additional information that may impact on the findings of this report be encountered or site conditions change, AG reserves the right to review and amend this report.

19. REFERENCES

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Standards Australia. 2005.' AS 4482.1. Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 1: Non-volatile and Semi-volatile Compounds.' <u>www.standards.com.au</u>.

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FIGURES



-			Site Locality							
	Alliance Geotechnical	Client Name:	ESR Group	•	Figure Number:	1				
	ENGINEERING ENVIRONMENTAL TESTING	Project Name:	Stage 1 Preliminary Site Investigation with Limited Sampling	$\mathbf{\Lambda}$	Figure Date:	15 October 2019				
	Manage the earth, eliminate the risk	Project Location:	290 Aldington Road, Kemps Creek NSW	N	Report Number:	9687-ER-1-1				



Source: NearMap (Nearmap.com)

		Site Layout		
Alliance Geotechnical	Client Name:	ESR Group	Figure Number:	2
ENGINEERING ENVIRONMENTAL TESTING	Project Name:	Stage 1 Preliminary Site Investigation with Limited Sampling	Figure Date:	15 October 2019
Manage the earth, eliminate the risk	Project Location:	290 Aldington Road, Kemps Creek NSW	Report Number:	9687-ER-1-1



Source: NearMap (Nearmap.com)

Alliance Geotechnical ENGINEERING | ENVIRONMENTAL | TESTING Manage the earth, eliminate the risk

	Areas of Environmental Concern			
Client Name:	ESR Group	•	Figure Number:	3
Project Name:	Stage 1 Preliminary Site Investigation with Limited Sampling	$\mathbf{\Lambda}$	Figure Date:	15 October 2019
Project Location:	290 Aldington Road, Kemps Creek NSW	IN	Report Number:	9687-ER-1-1



Source: NearMap (Nearmap.com)

		Sampling Point Layout Plan		
Alliance Geotechnical	Client Name:	ESR Group	Figure Number:	4
ENGINEERING ENVIRONMENTAL TESTING	Project Name:	Stage 1 Preliminary Site Investigation with Limited Sampling	Figure Date:	15 October 2019
Manage the earth, eliminate the risk	Project Location:	290 Aldington Road, Kemps Creek NSW	Report Number:	9687-ER-1-1

TABLES

Table 1										Sample ID	BH1-0.4-0.5	BH2-0.1-0.2	BH3-0.1-0.2	BH4-0.2-0.3	BH5-0.1-0.2	BH6-0.1-0.2	BH7-0.1-0.3	BH8-0.0-0.2	BH9-0.0-0.2
290 Aldingto	on Road, Kemps Creek NSW									Reference	\$19-Oc08933	\$19-Oc08934	\$19-Oc08935	\$19-Oc08936	\$19-Oc08937	\$19-Oc08938	\$19-Oc08939	S19-Oc08940	\$19-Oc0894
Soil Results a	& Adopted Site Criteria									Date Sampled	4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019	4/10/2019
3007-EK-1-1	[Managament Limite	ESLs for TPH	Health Investigation	``	ampie iviatrix	SOIL	SOIL	SOIL	SOIL	SUIL	SOIL	SOIL	SOIL	SOIL
				Direct Contact (mg/kg) - CRC Care	Inhalation / Vapour Intrusion HSLs (mg/kg)	for TPH Fractions F1 - F4 in soil (mg/Kg) -	Fractions F1 - F4, BTEX and	Levels for Soil Contaminants -											
Group	Analyte	Units	PQL	2011	- NEPC 2013 (CLAY)	NEPC 2013	Benzo(a)pyrene - NEPC 2013	NEPC 2013											
				HSL - D Commercial	HSL D - Commercial / Industrial	Commercial and Industrial	Commercial and Industrial	Commercial /	Data Set	Data Set									
				/ Industrial	0 m to <1 m	Fine Soil Texture	Fine Soil Texture	Industrial D	Minimum	Maximum									
	Arsenic, As Cadmium. Cd	mg/kg mg/kg	2	•		-		3,000	7	17	11 < 0.4	7.3 < 0.4	10 < 0.4	9.6 < 0.4	10 < 0.4	9.2 < 0.4	17 < 0.4	11 < 0.4	12 < 0.4
	Chromium, Cr	mg/kg	5.0	-	-	-	-	3,600	16	27	17	16	27	21	20	17	23	21	23
Metals	Copper, Cu Lead. Pb	mg/kg	5.0			•		240,000	21	66 56	27	21	44	61 18	37	28	39 16	26	26
	Mercury (inorganic)	mg/kg	0.10		-	-	-	730	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel, Ni Zinc, Zn	mg/kg	5.0	-	-	-	-	6,000	11	36	24	13	24	27	23	21	11 50	15	16 68
	Acenaphthene	mg/kg	0.5		-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5	•	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)anthracene	mg/kg	0.5	-	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5	•	-	-	0.7	•	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Carcinogenic PAHs, BaP TEQ <lor=0 Carcinogenic PAHs, BaP TEQ <lor=lor< th=""><th>TEQ (mg/kg) TEQ (mg/kg)</th><th>0.5</th><th></th><th>-</th><th>-</th><th></th><th>- 40</th><th>< 0.5</th><th>< 0.5</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th><th>< 0.5 0.6</th></lor=lor<></lor=0 	TEQ (mg/kg) TEQ (mg/kg)	0.5		-	-		- 40	< 0.5	< 0.5	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6	< 0.5 0.6
	Carcinogenic PAHs, BaP TEQ <lor=lor 2<="" th=""><th>TEQ (mg/kg)</th><th>0.5</th><td>•</td><td>-</td><td>-</td><td>-</td><td></td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td><td>1.2</td></lor=lor>	TEQ (mg/kg)	0.5	•	-	-	-		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Benzo(ghi)perylene	mg/kg mg/kg	0.5	-					< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
PAH	Benzo(k)fluoranthene	mg/kg	0.5	•	•		-	•	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Cii ysene Dibenzo(ah)anthracene	mg/kg mg/kg	0.5						< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5	-	· ·	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluorene Indeno(1,2,3-cd)pyrene	mg/kg mg/kg	0.5			-	-		< 0.5 < 0.5	< 0.5 < 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5	11,000	NL	-			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Phenanthrene Pyrene	mg/kg mg/kg	0.5	•		-		· ·	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total PAH (18)	mg/kg	0.5	-	-	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	TRH C10-C36 Total	mg/kg	50		-	-	-		< 50	249	< 50	102	< 50	112	< 50	< 50	< 50	< 50	< 50
	TRH C15-C28	mg/kg	50	-		-	-		< 50	82	< 50	51	< 50	55	< 50	< 50	< 50	< 50	< 50
	TRH C29-C36	mg/kg	50	•	-	-	-		< 50	140	< 50	51	< 50	57	< 50	< 50	< 50	< 50	< 50
	Naphthalene	mg/kg mg/kg	20	- 11,000	- NL	-	-		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
TRH	TRH >C10-C16 (F2)	mg/kg	50	20,000	NL	1,000	170	•	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C10-C16 (F2) - Naphthalene TRH C10-C40 Total (F bands)	mg/kg mg/kg	50		-	-			< 50 < 100	< 50 180	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C16-C34 (F3)	mg/kg	100	27,000	-	5,000	2,500	-	< 100	180	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	TRH >C34-C40 (F4) TRH C6-C10	mg/kg mg/kg	100 20	38,000	-	10,000 800	6,600 215	•	< 100 < 20	< 100 < 20	< 100 < 20	< 100	< 100	< 100 < 20	< 100 < 20	< 100	< 100	< 100	< 100
	TRH C6-C10 minus BTEX (F1)	mg/kg	20	-	310	•	-		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	Benzene Ethylbenzene	mg/kg	0.1	430	4 NI	•	95 185	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
BTEX	m/p-xylene	mg/kg	0.2	-	-	-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.4
	o-xylene	mg/kg	0.1	-	- NI	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Total Xylenes	mg/kg	0.3	81,000	NL	-	95		< 0.3	< 0.1	< 0.3	< 0.3	< 0.3	< 0.3	< 0.1	< 0.3	< 0.3	< 0.3	0.4
	4.4 - DDD	mg/kg	0.05	•	-	-	-	•	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	4.4 - DDE 4.4 - DDT	mg/kg	0.05			-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	a - BHC	mg/kg	0.05	•	-	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Aldrin + Dieldrin (total)	mg/kg	0.05	-		-	-	- 45	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	b - BHC	mg/kg	0.05	•	-	-	-	•	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Chiordanes (total) d - BHC	mg/kg mg/kg	0.05		-	-	-	530	< 0.1 < 0.05	< 0.1 < 0.05	< 0.1	< 0.1 < 0.05	< 0.1	< 0.1	< 0.1 < 0.05	< 0.1	< 0.1 < 0.05	< 0.1 < 0.05	< 0.1
	DDT + DDE + DDD (total)	mg/kg	0.05	· ·	•	-	-	3,600	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Dieldrin Endosulfan 1	mg/kg mg/kg	0.05	-		•	-	•	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
OCP	Endosulfan 2	mg/kg	0.05	-	· ·	-	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endosulfan sulphate Endrin	mg/kg mg/kg	0.05		-	-	-	- 100	< 0.05 < 0.05	< 0.05 < 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin Aldehyde	mg/kg	0.05	•	•	-	-	•	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin Ketone g-BHC (Lindane)	mg/kg mg/kg	0.05			-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Heptachlor	mg/kg	0.05		-			50	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Heptachlor epoxide Hexachlorobenzene	mg/kg mg/kg	0.05	· · ·		-		- 80	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Methoxychlor	mg/kg	0.05				-	2,500	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Toxaphene	mg/kg	1.0	-	-	-	-	-	<1	<1	< 1	< 1	< 1	< 1	< 1	<1	<1	< 1	<1
	Vic EPA IWRG 621 Other OCP (total)	mg/kg	0.1	-		-	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Alpha + Beta Endosulfan	mg/kg	0.05	-	-	-	-	2,000	-	-	-	-	-	-	-	-	-	-	-
	Aroclor-1221	mg/kg	0.1		-	-	-	<u> </u>	< 0.5	< 0.1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Aroclor-1232	mg/kg	0.1	-	•	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
PCB	Aroclor-1242 Aroclor-1248	mg/kg mg/kg	0.1	•	•	•	-	•	< 0.5 < 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Aroclor-1254	mg/kg	0.1	-	· ·	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Arocior-1260 Total PCB*	mg/kg mg/kg	0.1		-	-	-	- 7	< 0.5 < 0.5	< 0.5 < 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Nitrate & Nitrite (as N)	mg/kg	5			-	-		7	270	< 5	< 5	< 5	< 5	7.6	6.5	< 5	< 5	< 5
Nutrients	Phosphorus Total Kieldahl Nitrogen (as N)	mg/kg	5 10		· · ·	-		•	320	1700 5900	340 710	320	340 930	1700	1000 3500	610 2400	340 980	920 2200	460
<u> </u>	Total Nitrogen (as N)	mg/kg	10	-	-	-	-	-	710	5956	710	1300	930	1500	3507.6	2406.5	980	2200	1100

 Highlighted concentration exceeds the adopted site criteria - Screening Levels for Direct Contact (mg/kg) - CRC Care 2011

 Highlighted concentration exceeds the adopted site criteria - Inhalation / Vapour Intrusion HSLs (mg/kg) - NEPC 2013 (LAY)

 Highlighted concentration exceeds the adopted site criteria - Management limits for TPH Fractions F1 - F4 in soil (mg/kg) - NEPC 2013

 Highlighted concentration exceeds the adopted site criteria - SLS for TPH Fractions F1 - F4, BTEX and Benzo(a)pyrene - NEPC 2013

 Highlighted concentration exceeds the adopted site criteria - Health Investigation Levels for Soil Contaminants - NEPC 2013

 •
 No published criteria or sample not analysed

 NL
 Not Limiting

BH10-0.0-0.2	SS01	SS02
S19-Oc08942	S19-Oc08943	S19-Oc08944
4/10/2019	4/10/2019	4/10/2019
SOIL	SOIL	SOIL
13	6.7	15
< 0.4	< 0.4	< 0.4
25	21	25
66	30	41
201	20	28
× U.1 96	13	1.U.Z
150	61	140
< 0.5		<05
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
0.6	-	0.6
1.2	-	1.2
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 50	-	249
< 20	-	27
< 50	-	82
< 50	-	140
< 20	-	< 20
< 50	-	< 0.5
< 50	-	< 50
< 100	-	180
< 100	-	180
< 100	-	< 100
< 20	-	< 20
< 20	-	< 20
< 0.1	-	< 0.1
< 0.1	-	< 0.1
< 0.2	-	< 0.2
< 0.1	-	< 0.1
< 0.1	-	< 0.1
< 0.3	-	< 0.3
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.1	-	< 0.1
< 0.05		< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
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< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.05	-	< 0.05
< 0.2	-	< 0.2
< 1	-	< 1
< 0.2	-	< 0.2
< 0.2	-	< 0.2
-	-	-
< 0.5	-	< 0.5
< 0.1		< 0.1
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
< 0.5	-	< 0.5
520	< 5 890	50 1600
1200	2400	2000
2070	2400	5050
20/0	2400	3320

APPENDIX A

SURVEY



COMMERCIAL & INDUSTRIAL PROPERTY PTY LTD. THIS DRAWING IS COPYRIGHT APART FROM PERMITTED DEALINGS UNDER THE COPYRIGHT AT. THIS DRAWING MAY NOT BE REPRODUCED BY ANY PERSON WITHOUT PERMISSION IN WRITING ALL AREAS AND DIMENSIONS SHOWN ON DRAWINGS ARE APPROXIMATE ONLY AND ARE SUB.ECT TO CONFIRMATION BY SURVEY

REVISIONS

A PRELIMINARY

09.07.2019

4	DEVELOPMENT SUMMARY	
\sim 1 $\%$		104 704 m2
Daly	GROSS LAND AREA	104,704 m
ray 4		4,600 m ⁻
	NETT FEEICIENCY	48 25%
lavola		40.2370
IEVEL ?	RETAINING	6.299 m ²
	STORMWATER DETENTION BASIN	3.147 m ²
		-,
7	LOT 1	39,932 m²
·	WAREHOUSE 1	20,000 m ²
	OFFICE 1 (2 LEVELS)	1,400 m ²
	TOTAL BUILDING 1	21,400 m ²
	LOT 2	19,789 m²
	WAREHOUSE 2	10,170 m ²
	OFFICE 2 (2 LEVELS)	700 m²
	TOTAL BUILDING 2	10,870 m ²
	LOT 3	37,236 m²
	WAREHOUSE 3	15,330 m ²
	OFFICE 3 (2 LEVELS)	700 m ²
	TOTAL BUILDING 3	16,030 m ²
	TOTAL BUILDING AREA	48,300 m ²
	TOTAL LOT AREA (INCL STORMWATER DETENTION)	100,104 m ²
	ES	R
	PROJECT CONCEPT MASTER F ALDINGTON ROAD KEMPS CREEK NSW	PLAN
	DRAWING TITLE	

CONCEPT MASTER PLAN



LAST SAVED BY: jadamczyk

277086 BM08-003

APPENDIX B

GROUNDWATER



help · contact · customise

State Overview

Rivers and Streams favourites · search · download sites · find a site ■ Real Time Data - Rivers And Streams

Daily River Reports ⊡ Daily River Reports

Dams

favourites · search · download sites · find a site ■ Real Time Data - Major Dams

Groundwater (Telemetered data) favourites · search · download sites · find a site

🗄 Real Time Data - Bores

All Groundwater Site details

search · download sites · find a site - All Groundwater Map - North Coast Region - Hunter Region - South Coast Region - South Coast Region - Central West Region - Southwest Region - Far West Region - Far West Region - Great Artesian Basin - Coal Basins - Meteorology favourites · search · download sites ·

Hunter Integrated Telemetry System

bandwidth 💿 high 🔍 low

glossary and metadata



APPENDIX C

LAND TITLES



Report Generated 9:07:38 AM, 26 September, 2019 Copyright © Crown in right of New South Wales, 2017 This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

		Cadastral Records E	nquiry Report : L	<u>ot 13 DP 253503</u>	Ref : NOUSER
NSW REC	GISTRY	Locality : KEMPS CREEK		Parish : MELVILLE	
	(VICES	LGA : PENRITH		County : CUMBERLAND	
		Status	Surv/Comp	Purpose	
DP32140					
Lot(s): 123	221252			SUBDIVISION	
DP816667	221333	FRE-ALLOCATED	UNAVAILABLE	306010131010	
Lot(s): 1271	SUR 81/47 D	P984989			
DP1001976					
Lot(s): 1341, 13	342				
	2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1012333)				
DP32	<u>-</u> 2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1014373					
Lot(s): 13, 14, 1	15, 16				
📃 DP32	2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1022535	00 4000				
$\square DP32$	292, 1293	HISTORICAL	SURVEY	UNRESEARCHED	
DP1033686					
Lot(s): 141, 142	2				
🧕 DP2	53503	HISTORICAL	SURVEY	SUBDIVISION	
DP1062471	74				
LOI(S). 1273, 12	274 16667	HISTORICAL	SURVEY	SUBDIVISION	
EX-S	SUR 81/47 D	P984989	0011121	CODDITION	
DP1068323					
Lot(s): 809, 810), 812, 816,	817			
🦳 DP8	70365	HISTORICAL	SURVEY	SUBDIVISION	
DP1102225	ı				
Lol(s). 900, 901	2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1134951					
Lot(s): 891, 892	2				
🦳 DP32	2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1137513	170				
Lot(S): 1371, 13	03478	HISTORICAL	SURVEY	SUBDIVISION	
DP1158455	00110		0011121	CODDITION	
Lot(s): 1390					
🦳 DP32	2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1168320					
Lot(S): 14	2140	HISTORICAL	SURVEY	UNRESEARCHED	
DP1187467	2110	THE FORMER A	GORVET		
Lot(s): 913, 914	1				
🦳 DP80	68948	HISTORICAL	SURVEY	SUBDIVISION	
DP1191883	`				
\square DP3	<u>~</u> 2140	HISTORICAL	SURVEY	UNRESEARCHED	
Road			CONVEN		
Polygon Id(s): 1	05096384				
🚰 EX-S	SUR 81/47 D	P984989			
Polygon Id(s): 1	106759090 SUR 64/24 D	P980808			

 Caution:
 This information is provided as a searching aid only. Whilst every endeavour is made the ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL

 ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.



Locality : KEMPS CREEK LGA : PENRITH Parish : MELVILLE County : CUMBERLAND

Plan	Surv/Comp	Purpose	
DP32140	SURVEY	UNRESEARCHED	
DP250002	SURVEY	SUBDIVISION	
DP253503	SURVEY	SUBDIVISION	
DP255560	SURVEY	SUBDIVISION	
DP258414	SURVEY	SUBDIVISION	
DP259135	SURVEY	SUBDIVISION	
DP734584	SURVEY	SUBDIVISION	
DP803478	SURVEY	SUBDIVISION	
DP812284	SURVEY	SUBDIVISION	
DP816667	SURVEY	SUBDIVISION	
DP826866	SURVEY	SUBDIVISION	
DP848749	SURVEY	SUBDIVISION	
DP856564	SURVEY	SUBDIVISION	
DP857093	SURVEY	SUBDIVISION	
DP860614	SURVEY	SUBDIVISION	
DP865818	SURVEY	SUBDIVISION	
DP868948	SURVEY	SUBDIVISION	
DP870365	SURVEY	SUBDIVISION	
DP1001976	SURVEY	SUBDIVISION	
DP1012333	SURVEY	SUBDIVISION	
DP1014373	SURVEY	SUBDIVISION	
DP1022535	SURVEY	SUBDIVISION	
DP1033686	SURVEY	SUBDIVISION	
DP1062471	SURVEY	SUBDIVISION	
DP1068323	SURVEY	SUBDIVISION	
DP1068323	SURVEY	SUBDIVISION	
DP1102225	SURVEY	SUBDIVISION	
DP1134951	SURVEY	SUBDIVISION	
DP1137513	SURVEY	SUBDIVISION	
DP1158455	SURVEY	SUBDIVISION	
DP1168320	UNRESEARCHED	SUBDIVISION	
DP1168320	SURVEY	SUBDIVISION	
DP1187467	SURVEY	SUBDIVISION	
DP1187467	UNRESEARCHED	SUBDIVISION	
DP1191883	SURVEY	SUBDIVISION	
DP1191883	UNRESEARCHED	SUBDIVISION	

 Caution:
 This information is provided as a searching aid only. Whilst every endeavour is made the ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL

 ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps.

Req:R009863 /Doc:CT 11968-173 CT /Rev:11-Jan-2011 /NSW LRS /Pgs:ALL /Prt:26-Sep-2019 09:26 © Office of the Registrar-General /Src:GLOBALX /Ref:advlegs CATE OF TITLE NEW SOUTH WALLES PROPERTY ACT, 1900 968 3 17 Vol. Appln. No. 48377 - 1972 3 Edition issued C.1 I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule. ∞ 9 ာ Registrar General. PLAN SHOWING LOCATION OF LAND WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE (Page 1) Vol Can Star Lar 01549466 (135 7% PROPOSED (GAZ. 7. 11, 1958) ALIGNMENT (00" MIDT) MANIRE ROAD 330 PROPOSED (GAZ ALIGNMENT 7. 11. 1958 UTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON DIAGRAM 1 4 2 1 1 1 ñ, 2: 1086 ac. 3r de 37/2pe teo Orde Steper) Transmit Syde 111da 145 1939254 1001135 ESTATE AND LAND REFERRED TO Estate in Fee Simple in Lot 1 in Deposited Plan 549466 at St.Marys in the City of Penrith Parish of Melville and County of Cumberland being part of Portion 61 granted to Nicholas Bayly on 1-1-1810. FIRST SCHEDULE LTMT PED CONSTRUCT TINTO Reservations and conditions, if any, contained in the Crown Grant above referred to.
 Easement for Electricity Transmission Line created by notification in Government Gazette of 16-8-1963 Folios 2387 to 2389 affecting the strip of land shown as "Easement for Transmission Line 200' Wide (Ms.19097Sy)" in the plan hereon.
 Easement for Electricity Transmission Line created by notification in Government Gazette of 16-10-1964 Folios 3203 to 3205 affecting the strip of land shown as "Easement for Transmission Line 200'Wide (Ms.19392Sy.)" in the plan hereon. SECOND SCHEDULE ΰ PERSONS ARE

strar General.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

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ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 7 in Deposited Plan 250002 at St. Marys in the City of Penrith Parish of Melville and County of Cumberland being part of Portion 61 granted to Nicholas Bayly on 1-1-1810.

FIRST SCHEDULE

NUMBER ONE FLEURS PTY. LIMITED.

CAUTIONED

ARE

PERSONS

SECOND SCHEDULE

- 1. Reservations and conditions, if any, contained in the Crown Grant above referred to. 2. Easement for Electricity Transmission Line created by notification in Government Gazette of 16-8-1963 Folios 2387,2388 and 2389 affecting the piece of land above described shown as "Easement for Transmission Line 60,96 metres wide vide Gaz. 16-8-1963 Fol.2387 to 2389" in the plan hereon.
- 3. Easement for Electricity Transmission Line created by notification in Government Gazette of 16-10-1964 Folios 3203,3204 and 3205 affecting the piece of land above described shown as "Easement for Transmission Line 60.96 metres wide vide Gaz. 16-10-1964 Fol.3203 to 3205" in the plan hereon.
- 4. Mortgage No.N643526 to Finance Corporation of Australia Limited. Entered 15-1-1974.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

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(N643526) S for an and A 19-0-10 P 253503, 79692 VIm

P 568749 m



13 in Deposited Plan 253503 at St. Marys in the City of Penrith Estate in Fee Simple in Lot Parish of Melville and County of Cumberland being part of Portion 61 granted to Nicholas Bayly on 1-1-1810.

FIRST SCHEDULE

NUMBER ONE FLEURS PRY, LIMITED.

PERSONS AR

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to. Discharged GRY 2. Mortgage No. N643526 to Finance Corporation of Australia Limited. Registered 15-1-1974. Q177595 3. Mortgage No.P568749 to Finance Corporation of Australia Limited. Registered 27-1-1976 Discharged Q177595
| | | | FIRST SCHEDULE (continued) | | | | | | M MANNI |
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| Vilko Ser | ve. Te iree Reatter an | d Therese Sev | ve his witt s each as to three undivided one tenth shares | | | | | | |
| A and Bain | er Harold Eichorn | Dairy-Farmer | and Anna Margaret Eichorn historic each as to two | | | | | | |
| · individe | d one tenth shares. | -all-of-Babte | ern:Creek, as tenants in common. | Transf | er Q177596 | | 12-7-1977 | kennen | |
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| | | | SECOND SCHEDULE (continued) | | | | | | |
| NATU | JRE INSTRUMENT | DATE | PARTICULARS | ENTERED | Signature of
Registrar General | | CANCELLATION | | |
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NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

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eq:R009 Office	of the Registrar-General /Src:GLOBA 97-10 CN	Application to Recc CHANGE OF Red Property Act 1900 Crown Lands Consolidation Act Western Lands Act 1901
·(A)	LAND Show no more than 20 References to Title.	FOLIO IDENTIFIER 13/253503
(B)	REGISTERED DEALING If applicable.	
(C)	LODGED BY	L.T.O. Box Name, Address or DX and Telephone 659 ASHW000 REFERENCE (max 15 characters): BJRW
(D)	REGISTERED PROPRIETOR whose name is to be changed.	RAINER HAROLD EICHORN
(E)	NEW NAME In full.	CN RAINER HARALD EICHHORN
(F) (G)	I, the Registered Proprietor, apply to STATUTORY DECLARATION BY TH I, [New Name]RA-INERHAF I. I am identical with the Registered 2. On in the State of 3. My correct name in	have my New Name recorded in the Register in respect of the above Land/Registered Dealing. IE APPLICANT RAI-D-EICHHORN, solemnly and sincerely declare that I Proprietor referred to above; 199
	I make this solemn declaration consc	

R. G. MILLS J.P. 56-00064 - 18.1.1956

	5140	44
MARRIAGES regist	ered in the District of Sydney, at	BLACKIOWN in the State
DINew South Wale	by JOHN HENRY MORGAN, A	aniatant District Hegistrar.
1. Piace of registration	BLACKTOWN.	
No. in Register	181.	
2. Date of marriage	23rd. April. 1972.	
Place of marriage	St. Petrick's (burch. F	lacktorn. N.S.W
	out i would on a tonki ony h.	111201230118888 [18][]4114
	Eridegroom	liride
3. Surname of parties	EICEHORN.	SEVE.
Christian names	Reiner Harald.	Margaret Anna.
4. Occupation	Farmer.	Secretary.
S Residence	Lot C, Cobhan Street, HORSLEY PARK, N.S.W.	Horsley Road, EASTERN CEREK N S W
S. Conjugal status	Bachelor.	Spinster
7. Place of birth	Lehr. Germany.	Katoomba. N.S.7.
8. Age	23 years.	20 years.
	19th. July, 1940.	23rd, Hay, 1951.
surname of father	Franz Gustav Eichhorn.	Vilko Seve.
Christlan name and		
maiden surname of the	Waltrand Elfriede Eucone	r. Theress Hellinger.
10. Name of person or		
where party or parties		Vilko Seve.
were minors		Tasresa Seve.
III. Name of celebrant and rices according to which	Hugh Francia Law.	
marriage was celebrated	Roman Catholic Church.	
12. Names of witnesses to marriage	Ivan Poss. Nellie Perau.	
13. Signature of District	Salo	1111 - 111
Registrar	/ prover and	
Date of registration	24th. April, 1972.	
I hereby certify	/ that	
particulars reco	copy or orded in	
a Register in the	he state	
the Commonwealth	Registrar	
or Australia.	L3-05-200	4

•	Form: 01T Licence: 10V/00 Edition: 0011	096/96 New South Wales Real Property Act 190	■ 8839249D
2	STAMP DUTY	Office of State Revenue use only	NEN SOUTH WALES DUTY 31-07-2002 0001063808-001 SECTION 68(1)-ORIGINAL NO DUTY PAYABLE
(A)	TORRENS TITLE	If appropriate, specify the part transferred FOLIO IDENTIFIER 13	/253503
(B)	LODGED BY	Delivery Box ASHCOCO Reference (optional):	CODES T TW
(C)	TRANSFEROR	RAINER HARALD EICHHORN	
(D) (E) (F)	CONSIDERATION ESTATE SHARE TRANSFERRED	The transferor acknowledges receipt of the consideration of p the land specified above transfers to the transferee an esta 2/10 share	amily Court Order enrith L.C. number FL158/020290 ate in fee simple.
(G) (H)	TRANSFEREE	Encumbrances (if applicable): 1	
(I)	DATE	TENANCY: 23/07/2002	
(J)	I certify that the tr whose identity I a Signature of with Name of witness:	dd mm yyyy ransferor, with whom I am personally acquainted or as to m otherwise satisfied, signed this transfer in my presence. mess: $R \cdot f \cdot M \cdot f	Certified correct for the purposes of the Re Property Act 1900 by the transferor. Signature of transferor:
	Address of witnes I certify that the tr whose identity I a	ss: 18 St - H und Close $WIH H \delta \times f \delta \sim 17'$ ransferee, with whom I am personally acquainted or as to m otherwise satisfied, signed this transfer in my presence.	Certified correct for the purposes of the Re Property Act 1900 by the transferee.
	Signature of with	iess: D. uhla	Signature of transferee:
	Name of witness: Address of witnes	BARRY JOHN REX WILSON High & Woodriff Sts ss: Penrith NSW 2750 SOLICITOR	If signed on the transferee's behalf by a solicity or licensed conveyancer, insert the signatory full name and capacity below:

	STAMP DUTY		B O S S			E 217677
SOUTH		TRAN	SMISSION APPLI	CATION	0	
		SEC	TION 93, REAL PROPERTY A	CT, 1900		
		(See Ins	tructions for Completion on b	ack of form)	\$	
DESCRIPTION	Torrens Title	reference	LAND of which deceased is re	gistered proprietor		Location
OF LAND Note (a)	FOLIO IDENTI 13/253503	FIER	WHOLE		AT ST. MA	RYS
		Registered Number	ORTGAGE, OR CHARGE of which Torrens Title R	deceased is registered peterence	proprietor	Location
DEALING						
DECEASED REGISTERED PROPRIETOR Note (c)	THERESA SEV	<u>E</u>				
Note (d)	(the abovenamed DECEASED)) is registered as proprieto	or of the ^{land} above described. abovementioned registered	The APPLICA I dealing.	NT	OFFICE USE ON
_ /						V
ENTITLEMENT Note (I) and (j)	being entitled as	utor en d Dev	isee		of the will/ estat	e of the abovenamed deceas
ENTITLEMENT Note (I) and ()	being entitled as Probate No. 111515/9 Letters of Administration No. to the said	utor en d Dev 1 Vilko Seve	isee	of whose will was of whose estate wer	of the will/eeter \overline{bth}	e of the abovenamed decease September, 199
ENTITLEMENT Note (I) and (j) Note (d)	being entitled as Probate No. 111515/9 Letters of Administration No. to the said hereby applies to be registered DATE 2/St femus I hereby certify this application Signed in my presence by the a Signature of	transform Dev Vilko Seve As proprietor of the estat $\frac{1}{1}$ $\frac{1992}{100}$ As the correct for the purplicant who is personal Addition Addition	1 SEE te or interest of the said deceased poses of the real Property Act, 190 by known to me.	of whose will was of whose estate we in the land above descril abovementioned r	of the will/eetal granted on 6th bed. ogistored dealing.	e of the abovenamed decease September, 199
ENTITLEMENT Note (f) and (j) Note (d) EXECUTION Note (g)	being entitled as Probate No. 111515/9 Letters of Administration No. to the said hereby applies to be registered DATE 2/of femus I hereby certify this application Signed in my presence by the a Signature of BARRY JOHN F 2 Casiloregia S Penrith N.S.W. 2 SOLIOFTO TO Course	t Witness REX WILSON Witness Witness WILSON Witness WILSON WITNESS WILSON WITNESS WILSON WITNESS WILSON WITNESS WILSON WITNESS WILSON	isee te or interest of the said deceased poses of the real Property Act, 190 ly known to me.	of whose will was of whose estate were in the land above describ abovementioned r	of the will/eeted granted on 6th egistered dealing. EX	e of the abovenamed deceas September, 199 Signature of Applicant ECUTOR
ENTITLEMENT Note (I) and (j) Note (d) EXECUTION Note (g) TO BE COMPLETED BY LODGING PART	being entitled as Probate No. 111515/9 Letters of Administration No. to the said hereby applies to be registered DATE 2/St fcnuc hereby certify this application Signed in my presence by the Signature o BARRY JOHN F 2 Castlereegts S Penrith N.S.W. 2 SOLICHTOPH Occur LODGED BY	Vilko Seve Vilko Seve as proprietor of the estat (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2	tisee te or interest of the said deceased poses of the real Property Act, 190 by known to me.	of whose will was of whose estate were in the land above descrif abovementioned r 0. 0. 0. 0. 0.	of the will/eeter granted on 6th egistorod dealing. EX LOCATION OF DO	e of the abovenamed deceas September, 199 Signature of Applicant ECUTOR CUMENTS
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EXECUTION Note (d) EXECUTION Note (g) TO BE COMPLETED BY LODGING PART Notes (g) and (h)	being entitled as Probate No. 111515/9 Letters of Administration No. to the said hereby applies to be registered DATE 2/of Conco I hereby certify this application Signed in my presence by the Signature o BARRY JOHN F 2 Castlescender S Penrith N.S.W.2 SOLIGITER S LODGED BY S LODGED BY S LEG/ Baf: Wildow Passed	Vilko Seve A as proprietor of the estat <i>J</i> /992 to be correct for the purplicant who is personal <i>J</i> /992 to be correct for the purplicant who is personal <i>J</i> /992 <i>J</i>	Pry LIMITED VEYANCING AGENTS ST SYDNEY DX 957	of whose will was of whose estate were in the land above descril abovementioned r D. CT AND/OR OTHER IIISIS	of the will/eeter granted on 6th egistored dealing. EX LOCATION OF DO DATE OF DEATH 9.11.88	e of the abovenamed deceas September, 199 Signature of Applicant ECUTOR CUMENTS Herewith. In L.T.O. with Produced by 37

3 3	Licence: AUS/0628/96 Instructions for filling out this form are available from	IKANJIVIJJJION 7799116S APPLICATION 7799116S New South Wales 7799116S Section 93 Real Property Act 1901 11000
	the Land Titles Office	Office of State Revenue use only NEW SOUTH WALES DUTY 24-07-2001 0000689803-002 SECTION 63(C) 0UTY DUTY \$ ************************************
(A)	LAND	Folio Identifier 13/253503 as to 6/10 share as tenant in common
(B)	REGISTERED DEALING If applicable.	
(C)	LODGED BY	LTO Box Name, Address or DX and Telephone 659M Reference (15 character maximum):
D)	DECEASED REGISTERED PF	COPRIETOR VILKO SEVE
D) (E)	DECEASED REGISTERED PF	TA ANN MARGARET SEVE EICHHORN
(E) (F)	DECEASED REGISTERED PF APPLICANT I, the Applicant, being entitle died on 7th September 1st August, 20 on	ANN MARGARET EICHHORN ANN MARGARET EICHHORN ANN MARGARET EICHHORN ANN MARGARET OF the deceased registered proprietor (who F. 191999 pursuant to Probate/Letters of Administration No. 109352/00 granted OF FRANK HUGO SEVE and ANN MARGARET EICHHORN apply to be active or interset of the deceased registered dealing specified above
(E) (F)	DECEASED REGISTERED PF APPLICANT I, the Applicant, being entitle died on 7th September 1st August, 20 on	ANN MARGARET EICHHORN ANN MARGARET EICHHORN ANN MARGARET EICHHORN ANN MARGARET OF EICHHORN ANN MARGARET OF EICHHORN ANN MARGARET EICHHORN ANN MARGARET OF Administration No. 109352/00 granted O FRANK HUGO SEVE and ANN MARGARET EICHHORN, apply to be estate or interest of the deceased registered proprietor in the land/registered dealing specified above. posses of the Real Property Act 1900. DATE 18-05-01
(D) (E) (J) (F) (G)	DECEASED REGISTERED PF APPLICANT I, the Applicant, being entitled died on 7th September 1st August, 20 on	ANN MARGARET SEVE- EICHHORN ANN MARGARET SEVE- ed as beneficiary as beneficiary of the writh estate of the deceased registered proprietor (who F. 191999 pursuant to Probate/Letters of Administration No. 109352/00 FRANK HUGO SEVE and ANN MARGARET EICHHORN to FRANK HUGO SEVE and ANN MARGARET EICHHORN to FRANK HUGO SEVE and ANN MARGARET EICHHORN to FRANK HUGO SEVE and ANN MARGARET EICHHORN to Restate or interest of the deceased registered proprietor in the land/registered dealing specified above. DATE 18-05-01 Applicant who is personally known to me. MARGARET SEVE
(D) (E) (J) (F) (G)	DECEASED REGISTERED PF APPLICANT	ANN MARGARET EICHHORN ANN MARGARET EICHHORN beneficiary ed as beneficiary benef

Req:R016790 /Doc:DL 7799116 /Rev:26-Jul-2001 /NSW LRS /Pgs:ALL /Prt:27-Sep-2019 10:07 /Seq:2 of 2 © Office of the Registrar-General /Src:GLOBALX /Ref:advlegs Iransmission Application 97-031A

(H) CONSENT OF EXECUTOR OR ADMINISTRATOR

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We FRANK HUGO SEVE and I, ANN MARGARET EICHHORN

executor of the will / administrator of the estate of the Deceased Registered Proprietor, hereby consent to this application.

hkson'

BARRY JOHN REX WILSON Signature of Witness High & Woodriff Sts Penrith NSW 2750 Name of Witness (BLOCK LET TERS)CITOR

. Seve

Signature of ExecutorAdministrator

Address of Witness





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Req:R888153 /Doc:DP 0253503 P /Rev:16-Jun-1992 /Sts:OK.OK /Prt:13-Feb-2008 21:13 /Pgs:ALL /Seq:3 of 3 Ref:ALSP /Src:M



I, Bruce Richard Da that this nogative document in my cust

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Davies, Registrar Ganeral for New South Wales, certify ve is a photograph made as a permanent record of a ustody this 28th day of February, 1977 Ø

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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE -----26/9/2019 9:10AM

FOLIO: 13/253503

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13277 FOL 11

Recorded	Number	Type of Instrument	C.T. Issue
5/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
26/10/1987		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
3/2/1992	E217677	TRANSMISSION APPLICATION	EDITION 1
12/11/1993		AMENDMENT: LOCAL GOVT AREA	
5/8/1999	6071781	DEPARTMENTAL DEALING	
25/7/2001 25/7/2001	7799115 7799116	DISCHARGE OF MORTGAGE TRANSMISSION APPLICATION	EDITION 2
6/8/2002 6/8/2002 6/8/2002	8839247 8839248 8839249	CHANGE OF NAME CHANGE OF NAME TRANSFER	EDITION 3
14/2/2004	AA413722	MORTGAGE	EDITION 4
13/11/2007	AD560890	CAVEAT	
21/6/2011	AG311349	DISCHARGE OF MORTGAGE	EDITION 5
14/2/2012	AG810813	WITHDRAWAL OF CAVEAT	
14/4/2015 14/4/2015	AI621702 AI621703	REJECTED - CHANGE OF NAME REJECTED - LEASE	
9/9/2019	AP504209	APPLICATION FOR REPLACEMENT	
9/9/2019	AP504210	CHANGE OF NAME	EDITION 6

*** END OF SEARCH ***

advlegs

PRINTED ON 26/9/2019

Obtained from NSW LRS on 26 September 2019 09:10 AM AEST

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 13/253503

SEARCH DA	TE TIME	EDITIO	N NO	DATE
26/9/2019	9:09 A	М б	0	9/9/2019

LAND

LOT 13 IN DEPOSITED PLAN 253503 AT ST.MARYS LOCAL GOVERNMENT AREA PENRITH PARISH OF MELVILLE COUNTY OF CUMBERLAND TITLE DIAGRAM DP253503

FIRST SCHEDULE

ANNA MARGARET SEVE

(CN AP504210)

SECOND SCHEDULE (2 NOTIFICATIONS)

 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
 AP504209 THIS EDITION ISSUED PURSUANT TO S.111 REAL PROPERTY ACT, 1900

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs

PRINTED ON 26/9/2019

Obtained from NSW LRS on 26 September 2019 09:09 AM AEST

 $\ensuremath{\mathbb C}$ Office of the Registrar-General 2019

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. GlobalX hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900. Note: Information contained in this document is provided by GlobalX Pty Ltd, ABN 35 099 032 596, www.globalx.com.au an approved NSW Information Broker.

APPENDIX D

LOTSEARCH REPORT



Date: 07 Oct 2019 18:29:51

Reference: LS008868 EP

Address: 290-308 Aldington Road, Kemps Creek, NSW 2178

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

Table of Contents

Location Confidences	2
Dataset Listings	3
Site Location Aerial	5
Contaminated Land & Waste Management Facilities	6
PFAS Investigation Programs	8
Defence Sites	9
EPA Other Sites with Contamination Issues	10
EPA Current Licensed Activities	11
EPA Delicensed & Former Licensed Activities	12
UPSS Sensitive Zones	14
Historical Business Activities	15
Historical Aerial Imagery & Maps	22
Topographic Features	36
Elevation Contours	40
Hydrogeology & Groundwater	41
Geology	45
Naturally Occurring Asbestos Potential	47
Soils	48
Acid Sulfate Soils	52
Dryland Salinity	55
Mining Subsidence Districts	57
State Environmental Planning	58
Environmental Planning Instruments	59
Heritage	61
Natural Hazards	63
Ecological Constraints	65
Terms & Conditions	74

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading "LC" or "LocConf". These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	07/10/2019	07/10/2019	Daily	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	18/09/2019	17/09/2019	Monthly	1000	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	12/09/2019	12/09/2019	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	02/10/2019	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	06/08/2019	07/03/2017	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	02/10/2019	02/10/2019	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program	Department of Defence	02/10/2019	02/10/2019	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	02/10/2019	02/10/2019	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/10/2019	02/10/2019	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	13/12/2018	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	26/09/2019	26/09/2019	Monthly	1000	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	26/09/2019	26/09/2019	Monthly	1000	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	26/09/2019	26/09/2019	Monthly	1000	0	3	3
UPSS Environmentally Sensitive Zones	Environment Protection Authority	14/04/2015	12/01/2010	As required	1000	0	0	1
UBD Business to Business Directory 1991 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business to Business Directory 1991 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business to Business Directory 1986 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business to Business Directory 1986 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1982 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1982 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1970 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1970 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1961 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1961 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory 1950 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1950 (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	0
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Points of Interest	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	Quarterly	1000	0	0	1
Tanks (Areas)	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	Quarterly	1000	0	0	6
State Forest	NSW Department of Finance, Services & Innovation	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/01/2019	14/11/2018	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Botany Groundwater Management Zones	NSW Department of Primary Industries	15/03/2018	01/10/2005	As required	1000	0	0	0
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	8
Geological Units 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	1	-	2
Geological Structures 1:100,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Soil Landscapes	NSW Office of Environment & Heritage	12/08/2014		None planned	1000	2	-	4
Atlas of Australian Soils	ABARES	19/05/2017	17/02/2011	As required	1000	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning and Environment	04/10/2019	09/08/2019	Weekly	500	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	1	1	1
Dryland Salinity Potential of Western Sydney	NSW Office of Environment & Heritage	12/05/2017	01/01/2002	None planned	1000	1	1	3
Mining Subsidence Districts	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	0	0
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning and Environment	04/10/2019	07/12/2018	Weekly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning and Environment	04/10/2019	27/09/2019	Weekly	1000	1	2	7
Commonwealth Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	31/07/2018	Unknown	1000	0	0	0
National Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	28/09/2018	Unknown	1000	0	0	0
State Heritage Register - Curtilages	NSW Office of Environment & Heritage	15/07/2019	09/11/2018	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning and Environment	04/10/2019	27/09/2019	Weekly	1000	0	2	2
Bush Fire Prone Land	NSW Rural Fire Service	28/08/2019	03/06/2019	Quarterly	1000	1	1	3
Remnant Vegetation of the Cumberland Plain	NSW Office of Environment & Heritage	07/10/2014	04/08/2011	Unknown	1000	0	0	5
Ramsar Wetlands of Australia	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	2
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	04/10/2019	04/10/2019	Weekly	10000	-	-	-

Aerial Imagery 2019 290-308 Aldington Road, Kemps Creek, NSW 2178





Contaminated Land & Waste Management Facilities

290-308 Aldington Road, Kemps Creek, NSW 2178

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority © State of New South Wales through the Environment Protection Authority

Contaminated Land & Waste Management Facilities

290-308 Aldington Road, Kemps Creek, NSW 2178

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority © State of New South Wales through the Environment Protection Authority Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

 $\ensuremath{\mathbb C}$ State of New South Wales through the Environment Protection Authority

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia

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PFAS Investigation Sites

290-308 Aldington Road, Kemps Creek, NSW 2178

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

ld	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

 $\ensuremath{\mathbb{C}}$ State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation & Management Program

Sites being investigated or managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation & Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

290-308 Aldington Road, Kemps Creek, NSW 2178

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

290-308 Aldington Road, Kemps Creek, NSW 2178

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority © State of New South Wales through the Environment Protection Authority

EPA Activities

290-308 Aldington Road, Kemps Creek, NSW 2178

Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority © State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

290-308 Aldington Road, Kemps Creek, NSW 2178





EPA Activities

290-308 Aldington Road, Kemps Creek, NSW 2178

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority © State of New South Wales through the Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	20m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	20m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	20m	-

Former Licensed Activities Data Source: Environment Protection Authority © State of New South Wales through the Environment Protection Authority

UPSS Sensitive Zones

290-308 Aldington Road, Kemps Creek, NSW 2178





290-308 Aldington Road, Kemps Creek, NSW 2178

1991 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1991 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer					

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1991 Business to Business Directory Records Road or Area Matches

Records from the 1991 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

290-308 Aldington Road, Kemps Creek, NSW 2178

1986 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1986 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer					

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1986 Business to Business Directory Records Road or Area Matches

Records from the 1986 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

290-308 Aldington Road, Kemps Creek, NSW 2178

1982 Business Directory Records Premise or Road Intersection Matches

Records from the 1982 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id Dusiness Activity Premise Rei No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
No records in buffer			

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1982 Business Directory Records Road or Area Matches

Records from the 1982 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

290-308 Aldington Road, Kemps Creek, NSW 2178

1970 Business Directory Records Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer					

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1970 Business Directory Records Road or Area Matches

Records from the 1970 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

290-308 Aldington Road, Kemps Creek, NSW 2178

1961 Business Directory Records Premise or Road Intersection Matches

Records from the 1961 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer					

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1961 Business Directory Records Road or Area Matches

Records from the 1961 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

290-308 Aldington Road, Kemps Creek, NSW 2178

1950 Business Directory Records Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer					

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1950 Business Directory Records Road or Area Matches

Records from the 1950 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
	No records in buffer				

290-308 Aldington Road, Kemps Creek, NSW 2178

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches (1948-1993)

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer						

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Dry Cleaners, Motor Garages & Service Stations Road or Area Matches (1948-1993)

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
	No records in buffer					