

# Environmental Assessments - Lot 2 DP1232259, Lot 200 DP124996 & Lot 124 DP 755557 South Arm Road, Urunga



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# 1 Introduction

Earth Water Consulting Pty Limited (EWC) was engaged by Barnson (the “Client”) to undertake a preliminary Environmental Site Assessment (PESA), a Preliminary Acid Sulfate Soil (PASS) assessment and Wastewater Capability Assessment (WCA) for Lot 2 DP1232259, Lot 200 DP124996 & Lot 124 DP 755557 6 South Arm Road, Urunga (the “Site”) (Figure 1).

## 1.1 Objectives

Purpose of the environmental investigations were to provide sufficient preliminary information to support a planning proposal.

The objectives of the PESA were to:

- Investigate the site history and identify potentially contaminating activities that are currently being performed on the Site or that may have been performed on the Site in the past; and
- Make a preliminary assessment of potential contamination issues for residential development based on the Site history review.

The objective of the PASS investigation was to assess the risk of ASS being present that could be affected by the proposed development.

The objective of the WCA is to provide confirmation of a 1ha minimum lot size would be sustainable for effluent land application.

## 1.2 Suitability to Undertake Works

Strider Duerinckx has project managed and signs off on this investigation. Strider is an environmental geologist with 25 years experience in contaminated sites investigations including numerous banana plantation assessments. Strider is a CEnvP (Site Contamination Specialist) accredited.



# 2 Proposed Development

It is understood that the Planning Proposal will be submitted that seeks to rezone the land (in portion) to be either R5 – Large Lot Residential or C2 Environmental Conservation, whilst reducing the minimum allotment size to respond to the proposed land zoning. It is expected that a future subdivision would then be undertaken to in accordance with the new Minimum Allotment Size (Figure 2).



## 3 Scope of Work

### 3.1 PESA

This PESA has been undertaken in reference to the relevant sections in the *Consultants Reporting on Contaminated Land* (NSW EPA 2020), and Department of Urban Affairs and Planning *Managing Land Contamination – Planning Guidelines SEPP55 – Remediation of Land* (DUAP & EPA 1998).

The assessment included:

- A desktop review of historical conditions and activities on the Site including:
  - Historical aerial photographs review (to map change in use over time);
  - NSW EPA contaminated land and POEO notices and records (onsite or offsite contamination presence or significant activities),
  - Historical ownership records;
  - Review of banana cultivation and cattle tick dip sites registers;
  - Review of geology and hydrogeology including groundwater bores (risk of contamination migration); and
  - Review of environmental constraints such as groundwater dependent ecosystems (sensitive receptors).
- A site walkover of the Site to assess current layouts, surface conditions, presence hazardous building materials that may result subsurface contamination, and the presence of any obvious previous contaminating activities (such as current or historical fuel storage); and
- Presentation of a PESA report, including conclusions and recommendations on the contamination status of the property and suitability of the rezoning application and future subdivision.

### 3.2 PASS

The PASS investigation was undertaken in reference to the Acid Sulfate Soil Manual (ASSMAC, 1998).

The scope of work included:

- A desktop review of surface, geology, hydrogeology, geomorphic and ASS risk conditions;
- A site inspection and walkover to assess for indicative ASS biomes and features;
- Drilling of three (3) boreholes;
- Collection of nine (9) soil samples at various soil profiles present and field screening for ASS including Suspension Peroxide Oxidation Combined Acidity and Sulfur (SPOCAS) on a selected sample; and
- Preparation of this report which describes the results of our investigation.

### **3.3 WCA**

The wastewater capability assessment utilised general site and soi constraints outlined in the DLG (1998) guideline. The scope of work included:

- A desktop review of topographical, geological, landscape features and vegetation features of the Site;
- A site inspection of typical landforms the future subdivision could occur on;
- Modelling of typical effluent application and development footprints; and
- Compare available wastewater land area on nearby lots of a similar size to confirm in 1ha lot size would be suitable on the Site.

## **4 Site Description**

### **4.1 Site Identification**

The Site is known as Lot 2 DP1232259 (approximately 21.6ha), Lot 124 DP755557 (approximately 16.8ha) & Lot 200 DP1242996 (approximately 129ha) which is approximately 167.4ha in total (Figure 1).

### **4.2 Location and Features**

The Site is made up of three large properties that are situated between the western side of the Kalang River delineating Newry Island and the eastern side of the Pacific Highway on both sides of South Arm Road, Urunga. South Arm Road progresses southeast northwest along a ridgeline adjacent to the property boundaries.

The area of Lot 200 is located on the western side of South Arm Road with a detached section on the eastern side to the south of Riverside Drive. The groundsurface generally slopes down to the northwest and north on the western side of South Arm Road with open grazing pasture occupying the upper to mid slopes and forest vegetation and swampland occupying the low lying and intermittent drainage areas. To the east of South Arm Road the groundsurface slopes down to the east off the ridgeline towards the Kalang River.

The area of Lots 2 and 124 mostly occupy the eastern side of South Arm Road in two rectangular lots that extend from Kalang River to the east, westwards over low lying grazing land, swampland and intermittent drainages to a series of small ridgeline spurs whose groundsurfaces slope down from South Arm Road towards the southeast. An existing dwelling occupies the ridgeline on Lot 2 with a farm shed situated on a ridgeline spur. A smaller section of Lot 2 occupies the western side of South Arm Road, whose groundsurface slopes to the northwest from the ridgeline.

## 4.3 Surrounding Land Use

The surrounding land use is detailed in **Table 1**.

**Table 1: Surrounding Landuse**

North	South	West	East
Open pasture, remnant and regenerated forest, and new development 1ha rural residential.	Open pasture remnant forest and wetland.	Remnant forest, Pacific Highway	Open pasture remnant forest, wetland and rural residential.

## 5 Site Inspection

A site inspection was undertaken on 12 August 2021 by staff of EWC. During the inspections it was noted that:

- The existing dwelling is an original wooden farmhouse with corrugated iron roofing, situated within fenced yards with two water tanks. Given the apparent ages of the dwellings, Asbestos Containing Materials (ACM) are likely to have been used in construction of wet areas;
- Drainage from the cattle yards disperse over a linear divergent to waxing divergent landform along a south facing ridgeline spur;
- Stormwater from South Arm Road drains to multiple discharge zones to the north and south of the ridgeline;
- The regenerated forest area margins are relatively untouched with no apparent rubbish or dump zones; and
- Swamp type vegetation is located low in the landscape close to the river height of <5mAHD.

Typical Site details are shown the following photographs.



Photograph 1 – Looking northeast along with South Arm Road occupying the tree line to the right.



Photograph 2 – Looking north northwest along a ridgeline spur from South Arm Road towards low lying remnant forest.





Photograph 3 – Looking south upslope from the south-western corner of Lot 200 towards the ridgeline of South Arm Road (outside of the planning proposal area).



Photograph 4 – Looking northwest upslope from proposed Lot 13 and across proposed Lot 13 towards the existing dwelling from a southeast facing ridgeline spur.



Photograph 5 – Looking north upslope from proposed Lot 16 across proposed Lot 15 towards an existing shed in the midground and an existing dwelling in the background from a south facing ridgeline spur.



Photograph 6 – Looking south downslope on a ridgeline spur across proposed Lot 16 towards remnant wetland forest

## 6 Geology, Hydrogeology and Topography

### 6.1 Topography

The southern Lot 200 property boundary on the South Arm Road ridgeline is situated at approximately 20mAHD and rising to approximately 30mAHD at the south-western corner.



Groundsurfaces from the southern Lot 200 boundary fall to the north and northwest towards low lying remnant swampland at between 2-10mAHD. Intermittent drainages of first and second order drain through the gully spurs feeding two mapped dams that drain a northeastern direction through a low-lying swampland. A narrow ridgeline spur oriented east to west at approximately 20mAHD intersects the eastern Lot 200 property boundary midway outside of the planning proposal area.

The northern Lot 2 and 24 property boundaries are situated at approximately 30mAHD on the ridgeline where the existing dwelling is situated, and fall to the east and south across a series of ridgeline spurs that feed intermittent drainages and mapped farm dams. A mapped wetland system is located at approximately 2mAHD in the lower southern portions of the lots.

## 6.2 Geology

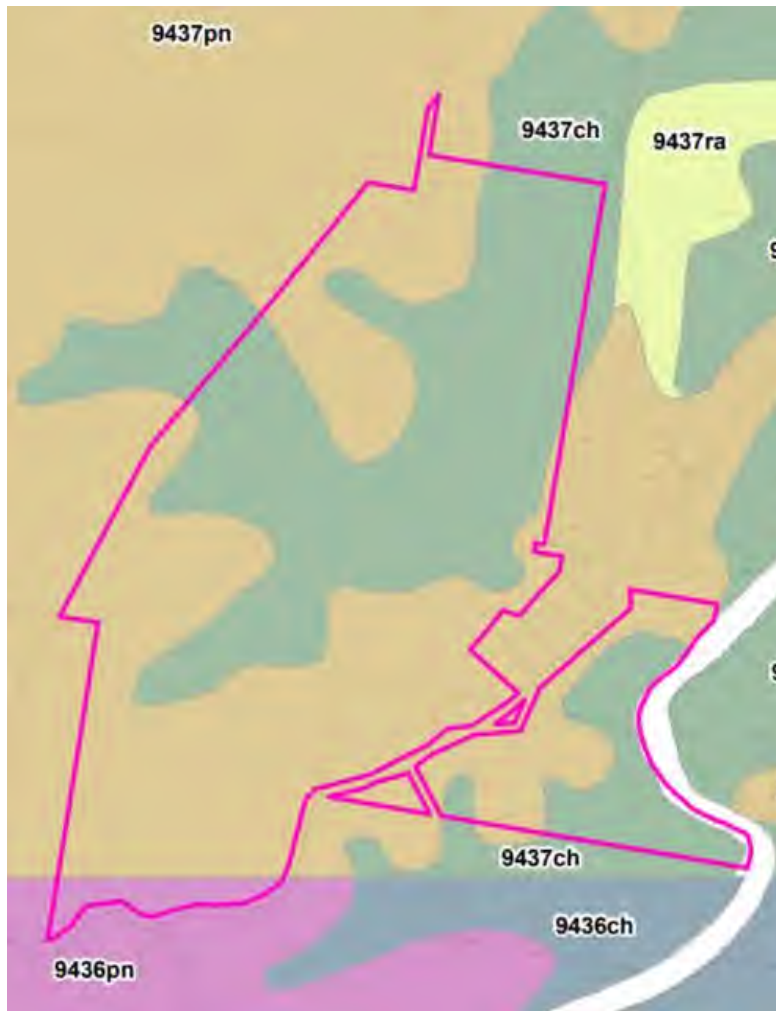
Based on the Coffs Harbour 1:25,000 Coastal Quaternary Geology Map, the middle portion ridgeline and the western portion of the Site are underlain by Palaeozoic aged sedimentary siltstones and minor conglomerates of the Bellingen Slate (Pnbf). The eastern lowlying portion of the Site is underlain by Undifferentiated Quaternary-aged sediments (Qu) including alluvial and swamp deposits, coastal sand and estuarine deposits.



Photograph 7 – Mapped Quaternary Geology

## 6.3 Soils

We reviewed the Soil Landscapes of Central and Eastern NSW which indicates that the elevated sections of the Site made up by the ridgelines and spurs are underlain by erosional soils belonging to the Pine Creek Soil Landscape. The lower lying swampy northern and eastern portions of the Site are underlain by the swamp soils belonging to the Charlmont Soil Landscape



Photograph 8 – Mapped Soils

## 6.4 Hydrogeology

No licensed groundwater bores are located on the Site. There are a number of registered groundwater bores clustered amongst the pre-existing rural land to the southwest corner of the Site, including: GW305496 (48.0m depth, domestic), GW303040 (36.0m depth, domestic and stock), GW051440 (11.9m depth, domestic and stock), GW054412 (9.4m depth, domestic and stock) and GW051274 552m (12.2m depth, stock). There is a registered bore in the rural residential area to the east of the Site, including: GW305945 east (33.0m depth, domestic) and 20510011 (unknown). Groundwater is expected at >20m depth on along the ridgelines of the Site underlain by clayey residual soils and bedrock.





Photograph 9 – Licensed groundwater bores

## 6.5 Acid Sulfate Soils

We reviewed the Macksville 1:100,000 ASS Risk Map. This indicates that the crests and slopes of the Site are mapped with negligible ASS risk (Class 5), low lying alluvial swamp area at 2-4mAHD mapped with a likely risk of occurrence 1m below ground level (Class 3) and the low lying backswamp wetland area 0-2mAHD to the south of the site and marginally intersecting the southern border of Lot 2 is mapped with a likely occurrence below ground level (Class 2).



Photograph 8 – ASS Risk Mapping

## 7 Preliminary Environmental Site Assessment

### 7.1 Previous Environmental Investigations

No previous environmental investigations are known to have been undertaken on the Site.

### 7.2 Aerial Photographs

A review of aerial photographs from 1956-2019 was undertaken, and the results are summarised in Table 2 with aeries included in Appendix A. Aeries pre 1956 are not available.

**Table 2: No. 9 Aerial Photograph Review**

Year	Site	Surrounding Land
1956	The main existing dwelling and a farm shed with stock yards, are on a Lot 2 ridgeline spur south of South Arm Road. Two small shed structures are present on the northern side of the primary ridgeline on Lot 200.	To the north, a few dwellings are present adjacent to South Arm Road.  To the east and to the south, cleared grazing areas on ridgeline spurs and low-lying backswamps.

Year	Site	Surrounding Land
	Extensive clearing of forested areas within elevations suitable for grazing. Majority of swampland on lower elevations is vegetated by remnant shrub and trees.	To the west, remnant forest vegetation.
1967	Minor vegetation regeneration of previously cleared areas on Lot 200.	No change.
1973	An additional shed structure in the existing dwelling vicinity. Further clearing and thinning of vegetation in grazing areas across the Site.	Clearing adjacent to the northeastern corner of the Site.
1980	Minor vegetation regrowth of previously cleared areas on Lot 200.	Clearing adjacent to the southwestern corner of the Site and a residential dwelling and shed structure south of the primary ridgeline. Additional residential dwellings to the North. Forest trails to the north-west.
1989	Moderate vegetation regeneration and regrowth of previously cleared areas on Lot 200. A cleared patch adjacent to the northwestern boundary.	Further clearing adjacent to the southwestern boundary of the Site. Subdivision of Newry Island land to the east for residential development. Additional dwellings adjacent to the southwestern corner of the Site.
1994	Continued vegetation regeneration and regrowth on Lot 200. Downsize of the farm shed structure in the dwelling vicinity.	Land clearing of vegetation to the northwest of the Site. Further residential development to the north adjacent to South Arm Road. Addition of Riverside Drive to the-east. No residential development at the time. Large water tank to the north-west.
2004	Continued significant vegetation regeneration and regrowth on Lot 200.	Significant residential development on Riverside Drive and adjacent to the South Arm Road (>20 dwellings). Further residential development to the North of the Site.

Year	Site	Surrounding Land
2010	Minor clearing and thinning of vegetation on Lot 200 ridgeline spurs.	No change.
2015	Minor clearing and thinning of vegetation on Lot 200 ridgeline spurs.	Construction underway for the Nambucca Heads to Urunga Pacific Highway Upgrade Project (NH2U) skirting the western Site boundary.
2019	Addition of a corrugated farm shed in the existing dwelling vicinity.	Construction of four large dwellings on the primary ridgeline adjacent to South Arm Road towards the middle of the Site.
2020	No change.	Construction of one large dwelling on the primary ridgeline adjacent to South Arm Road towards the middle of the Site.

### 7.3 NSW EPA Records

A search of the NSW EPA's contaminated land record revealed no investigation or remediation notices have been issued on the Site or adjacent lots for contamination or 'significant risk of harm' under Section 58 of the Contaminated Land Management Act 1997.

A search of the public register under Section 308 of the Protection of the Environment Operations Act indicated that no current licenses have been held for potentially contaminating activities on the Site or adjacent lots, nor notices issued.

Surrendered activities include former Licensed activities pertaining to application of herbicides on waterways throughout the Bellingen Shire and NSW. Similarly, former Licensed activities pertaining to ceased road construction for the Nambucca Heads to Urunga Pacific Highway Upgrade project which is adjacent to the Site have been surrendered.

### 7.4 Other Contaminating Sites

The Site is not known to have been nor located adjacent to any known Defence sites, former gasworks, PFAS contaminated, loose fill asbestos insulation registered, dry cleaners, fire rescue, gas terminals, liquid fuel depots, active mines or quarries, derelict mines, petrol stations, power stations, electrical substations, telephone exchanges, active or historical waste management facilities (landfills) or wastewater treatment facilities.

A current licensed activity for waste disposal (EPL 5896) is held by the Bellingen Shire Council for the operation of the Raleigh Waste Management Centre which is located approximately 923m north of the Site. No risk is associated with this facility.

A lapsed license for a demolished cattle tick dip site was situated to the northeast of the site on Short Cut Road which expired in 1937.

## 7.5 Historical ownership

A search of historical owners was undertaken of Lot 2 and 200. The results are summarised in **Table 3**, and the results are included in Appendix B.

**Table 3: Historical Ownership**

Date	Lot 2 DP1232259	Lot 200 DP1242996
1926 - 1954	France Tyson	France Tyson
1954 - 1963	Cecil Tyson Eunice Elma Lois Jackson	Cecil Tyson Eunice Elma Lois Jackson
1963 - 1965	Douglas Geroge Menz	Douglas Geroge Menz
1965 - 1969	William Henry Willett	William Henry Willett
1965 - 1966		William Henry Willett
1966 - 1969		Archibald Stewart Crombie
1969 - 1973	Roy Gordon Riddell Joyce Eirene Riddell	Roy Gordon Riddell Joyce Eirene Riddell
1973 - 1977	Roy Gordon Riddell	Roy Gordon Riddell
1977 – 2008	Roy Gordon Riddell Judith Langford Riddell	Roy Gordon Riddell Judith Langford Riddell
2008 - 2020	Judith Langford Riddell	Judith Langford Riddell
2020 - date	Robert Bruce Riddell	Not Specified on Title Search

## 7.6 Summary of Site History

The historical review has identified that the Site underwent extensive clearing in potential grazing areas prior to 1956 (no record of earlier aerial photos) with succeeding cycles of regeneration and clearing leading to present vegetated gullies and cleared ridgeline spurs. A sole residential dwelling has occupied the Site since prior to 1956. The elevated land has typically been subject to cattle grazing with lower lying areas remaining vegetated. First recorded land acquisition was in 1926, and ownership has remained in family since 1969 to date.

The construction of the NH2U, adjacent to much of the western property boundary has fragmented ecological connectivity to neighboring forest.

Surrounding farmland has been subject to similar land clearing patterns to the Site. Periods of residential development in surrounding areas commenced since 1989 and have spiked since 2019 when rural-residential land has become available.

## 7.7 Potential Areas and Contaminants of Concern

Based on the site history and a walkover, for the planning proposal LEP rezoning change, no Areas of Environmental Concern (AECs) and associated Contaminants of Concern (CoC) were identified that would impact on the proposed development.

Potential for contamination due to agricultural grazing and associated activities was investigated with the collection of three check samples. Two check samples were collected on the northern side of the South Arm Road ridgeline and one check sample was collected on the southern side of South Arm Road on a ridgeline spur extending to the southern boundary of Lot 2 (Figure 3). Samples were analysed for generic Contaminants of Concern (CoC).

**Table 4: Areas of Environmental Concern**

AEC	CoC
Residential development	heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), OCP and Organophosphorus Pesticides (OPP).

## 7.8 Investigation Criteria

The investigation criteria adopted for this PESA are health-based investigation levels for residential sites with access to soil for home grown vegetables at less than the 10% of the daily intake, provided in NEPM (NEPC 2013) Guidelines. In addition, Environmental Investigation Levels (EILs) are adopted based on background concentrations tested from nearby properties. The investigation criteria are shown in the attached Table LR1.

## 7.9 Sampling Methodology

Samples were collected from 0-150mm depth into laboratory supplied glass jars with Teflon lids. Sampling equipment was decontaminated between sample collection, and disposable gloves were worn and changed between samples.

Samples were forwarded under Chain of Custody conditions at Eurofins Laboratory for analysis. The laboratory reports are included in Appendix C.

## 7.10 Analytical Results

The soil analytical results are summarised in the attached Table LR1. Comparison of discrete sample results to the investigation criteria indicated that:

- Concentrations of OCP and OPP were reported below the laboratory Limit of Reporting (LOR) for all samples; and
- Concentrations of Cadmium, Mercury and Nickel were all reported below the laboratory LOR, and concentrations of Arsenic, Chromium, Copper, Lead and Zinc were reported above the LOR but to a high degree below the Investigation Criteria for all samples analysed.

The analytical results confirm the opinion formed that there are no AECs at the Site that would impact on the proposed residential subdivision.

## **8 ASS Investigations**

### **8.1 Biophysical Indicators**

The desktop review indicated that potential dwelling allotments will be underlain by sedimentary bedrock and the resultant residual clay loam soils. An inspection of the area confirms no salt scalding or salt tolerant vegetation are present, no apparent shallow groundwater, and wet eucalypt type forest vegetation is present at the lower slopes and gullies towards low lying alluvial swamp

Potential ASS has been mapped in the low lying alluvial swamp area extending from the northern boundary through the middle of Lot 200 and the backswamp wetland areas extending into the southern margins of Lot 2 and through the middle of Lot 124 (Figure 4). Low lying areas are not expected to be developed.

### **8.2 Subsurface Conditions**

Site soils were observed by drilling three (3) boreholes (BH1, BH2 and BH3) to a maximum depth of 1.2m depth using a powered auger. Borehole locations are shown in Figure 3, and a copy of the borehole logs are presented in Appendix D.

Natural soil profiles were observed in the borehole, and were found to be representative of the Pine Creek Soil Landscape, with a shallow topsoil layer underlain by orange to white clay.

Strong jarosite and iron mottling was not observed in the natural soils. No rotten egg odours, shell pieces, dark grey to black anaerobic soils or muds were encountered.

No groundwater inflow was observed in the borehole to the depth drilled.

### **8.3 ASS Screening Test Results**

Nine soil samples were collected and selected for field screening tests to determine their likelihood of containing Potential or Actual ASS (Pass/Aass) and whether further laboratory analyses would be necessary. The selected soil samples were placed in a chilled container (~4 C) and only removed when analysis was conducted.

Samples were forwarded to Eurofins-MGT for initial screening analysis. The lab report is included in Appendix C. In summary:

- The pH<sub>f</sub> of analysed samples ranged from 6.0-6.1, with the samples from 0.3 - 0.5m depth recording a pH<sub>f</sub> of 6.0 – 6.1, above the investigation criteria of 4. This indicates that the near topsoil is naturally slightly acidic;
- The pH<sub>fox</sub> of all analysed samples ranged between 2.8-4.7, with one sample (ASS2-0.3-0.5) below the investigation criteria of 3. The results indicate that Pass may be present at Sample location ASS2; and



- Except for sample ASS2-0.3-0.5, the rate of reaction and pH change from  $\text{Ph}_f$  to  $\text{pH}_{\text{fox}}$  suggested no ASS.

As a result of the field screen analytical data, further laboratory testing for Suspension Peroxide Oxidation Combined Acidity and Sulfur (SPOCAS) was undertaken for sample ASS2-0.3-0.5 to confirm if PASS is present at that depth and location. The lab report is included in Appendix C. In summary:

- The peroxide oxidisable sulfur (POS) was less than 0.02%, below the 0.01% threshold;
- The titratable sulfidic acidity (TSA) was recorded at 56 molH<sup>+</sup>/t, below the threshold of 62 molH<sup>+</sup>/t.

Noting that this sample falls outside of the planning proposal area near the south-western property boundary. The results indicate that the soils are naturally acidic due to their coastal location and are not caused by the sulfur content (ASS), and the regional vegetation is adapted to acidic conditions.

No further investigations or ASS management area required for the planning proposal to proceed. During future development applications on individual lots further ASS investigations may be required for lots 9-13 where mapped H2 potential ASS has been identified.

## 9 Wastewater Capability

A minimum lot size analysis and modelling were completed to assess if 1ha lot size is suitable for the Site.

### 9.1 Methodology

When considering the suitability for a lot to sustainably manage wastewater on-site, we typically refer to 'available effluent management area'. This broadly refers to available areas (i.e. not built out or used for a conflicting purpose) where OSMS will not be unduly constrained by site and soil characteristics. Available area on a developed lot is determined by the following factors:

- Total building area (including dwellings, sheds, pools etc.) which includes a defined building envelope but may extend beyond with additional improvements to a property, such as driveways and paths (impervious areas), and gardens/vegetated areas unsuitable for effluent reuse;
- Dams, intermittent and permanent watercourses running through lots;
- Maintenance of appropriate buffer distances from property boundaries, buildings, driveways and paths, dams and watercourses;
- Flood prone land;
- Excessive slope;
- Excessively shallow soils;
- Heavy (clay) soils with low permeability;
- Excessively poor drainage, shallow groundwater and/or stormwater run-on; and
- Excessive shading by vegetation.



The residual areas (areas not otherwise occupied by improvements, buffers, restrictions or conservation vegetation) were then calculated for the selected lots (Figure 5), and the available area compared to the wastewater envelope required.

## 9.2 Assumed OSMS

Primary treatment was selected as default due to proposed lots in the current investigation area being ~10,000m<sup>2</sup>.

Based on previous subdivision modelling of sustainable hydraulic and nutrient loading on properties in the Bellingen Shire, for a 4 bedroom dwelling a minimum footprint of 505m<sup>2</sup> is required for on-site wastewater land application (Appendix E). Allowing for a reserve area of equal footprint, this equates to 1,100m<sup>2</sup> total wastewater envelope required for general assessment purposes.

## 9.3 MLS Buffer Distances

Buffer distances from EMAs are typically enforced to minimise risk to public health, maintain public amenity and protect sensitive environments. Generally, adopted environmental buffers for primary treated effluent land applied into absorption trenches/ beds based on DLG (1998) are:

- 250m from domestic groundwater bores;
- 100m from permanent watercourses;
- 40m from intermittent watercourses and dams;
- 12m from downslope property boundaries and 6m from upslope property boundaries; and
- 6m from downslope buildings and 3m from upslope buildings.

In addition, developed areas such as inground water tanks and swimming pools were also buffered.

## 9.4 MLS Comparative Lots Assessed

Four nearby representative lots were selected that have already been subdivided (Table 5) (Figure 5). The lots ranged in size from 9,530-9,888m<sup>2</sup> and are situated on the northern side of the South Arm Road ridgeline adjacent to the planning proposal area.

**Table 5: Comparative Lots Assessed**

Address	Lot Area (m <sup>2</sup> )	Zoning
180 South Arm Road	9,530	RU4
186 South Arm Road	9,540	RU4
194 South Arm Road	9,650	RU4
200 South Arm Road	9,888	RU4

The properties typically included a dwelling, garage/shed, landscaped trees, shrubs and gardens, driveways, water tanks, and recreational space. This development style will be similar to that

proposed for the Site and therefore minimum lot size and development potential should be consistent.

## 9.5 MLS Assessed Available EMA

**Table 6** and Figure 5 shows the assessment of available effluent management areas for each of the assessed lots. As is evident, the variability of lot sizes, on-lot improvements and restrictions of developed lots makes selection of a “typical” lot difficult, however comparison of the site constraints indicates that minimum lot size is the most significant issue to address.

**Table 6: Minimum Lot Size Assessment Results**

Id	Lot Area (m <sup>2</sup> )	Developed Area (m <sup>2</sup> ) <sup>1</sup>	Total Restricted Area (m <sup>2</sup> ) <sup>2</sup>	Available Eff. Application Area (m <sup>2</sup> )	Percent of Lot Available for Eff. Disp. (%)	>1010m <sup>2</sup> Area Available for Primary Treatment?
180	9,530	3,745	6,840	2,686	39	Yes
186	9,540	2,270	5,833	3,705	64	Yes
194	9,650	1,933	5,517	3,576	65	Yes
200	9,888	1,833	6,870	3,044	44	Yes
1. House, driveway, shed etc 2. Includes developed area, protected vegetation and buffers to waterways and boundaries						

## 9.6 Available EMAs on Lots in the Planning Proposal

Allowing for general buffers to boundaries and waterways, the general available areas for onsite wastewater application (EMAs) for each lot are shown on Figure 6. A minimum of 3,000m<sup>2</sup> EMA is available per lot and as such the MLS of 1ha is considered suitable.

# 10 Conclusions and Recommendations

Environmental investigations have been completed across the planning proposal extents. It is concluded that:

- The Site has no significant Areas of Environmental Concern or Contaminants of Concern that would impact the proposed rezoning application. Confirmation check sampling undertaken during this investigation recorded soil concentrations of heavy metals are very low and within expected background ranges, and no pesticide contamination;
- The ASS investigation confirmed that residual clay soils are located beneath the majority of the area in the planning proposal area. ASS class mapping identifies mainly Class 5 ASS soils in the planning proposal area with ASS not expected. But a high probability of ASS has been mapped along the eastern margins of proposed Lots 9-13 that may affect development in those portions. Field screening, laboratory testing and biophysical indicators confirmed no ASS across the likely portions of lots to be developed; and

- Modelling for primary treatment and subsurface land application a minimum of 1,100m<sup>2</sup> of land area is required for sustainable wastewater management. Comparison of the land area within the planning proposal extents to adjacent properties suggests that for a 1ha lot typically 3,000-4,000m<sup>2</sup> of land area is available for onsite wastewater application, in excess of the minimum area required. As such 1ha lot sizes in the area would be sustainable.

## 11 References

ASSMAC, *Acid Sulfate Soil Manual*. Acid Sulfate Soils Management Advisory Committee, August 1998.

NEPC. 2013. *National Environment Protection (Assessment of Site Contamination) Measure. Schedule B1-Schedule B1 Guideline on Investigation Levels For Soil and Groundwater*. National Environment Protection Council.

NSW EPA. 2020. *Consultants Reporting on Contaminated Land*. NSW Environment Protection Authority.

# TABLES

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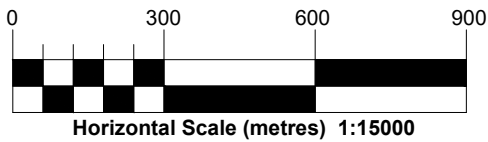
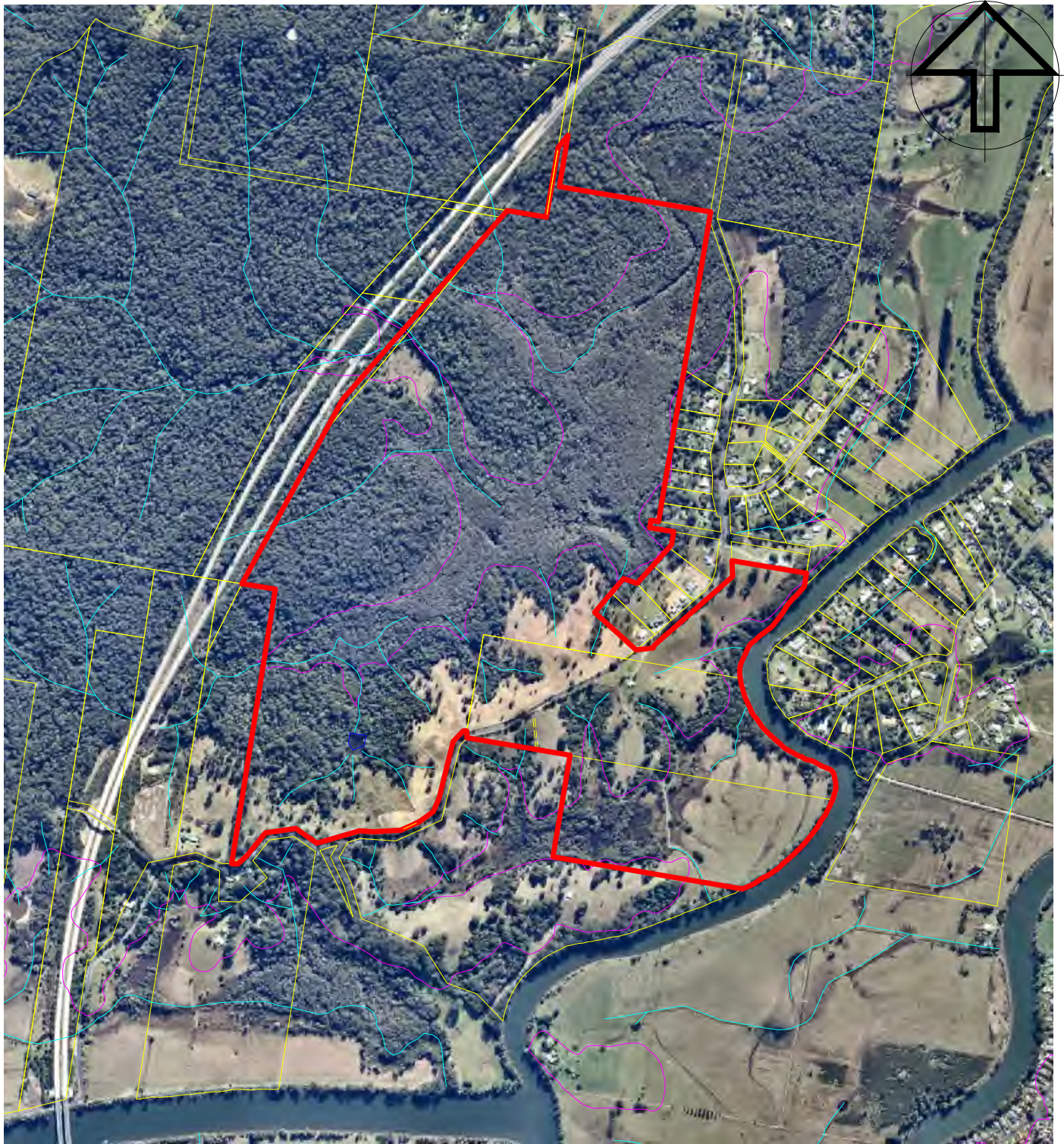
Table LR1: Summary of Soil Discrete Analytical Results

Sample ID	Units	LOR	Investigation Criteria			S-1	S-2	S-3
Date Collected		Eurofins	NSW EPA	NEPM		12/08/2021		
Depth Collected			BP	HIL (A)	EIL	0-150	0-150	0-150
% Moisture	%	1	-	-	-	38	50	33
Heavy Metals								
Arsenic	mg/kg	2	100	100	100	5.7	4.6	2.7
Lead	mg/kg	5	300	300	1100	< 0.4	< 0.4	< 0.4
Cadmium	mg/kg	0.4	-	20	-	14	20	16
Chromium	mg/kg	5	-	100	480	19	16	9.5
Copper	mg/kg	5	-	6000	140	9.2	11	9.4
Mercury	mg/kg	0.1	-	40		< 0.1	< 0.1	< 0.1
Nickel	mg/kg	5	-	400	55	< 5	6	< 5
Zinc	mg/kg	5	-	7400	210	27	45	20
Organochlorine Pesticides								
4.4'-DDD	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	mg/kg	0.05	50	-	180	< 0.05	< 0.05	< 0.05
a-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Aldrin	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Aldrin and Dieldrin (Total)*	mg/kg	0.05	10	6	-	< 0.05	< 0.05	< 0.05
b-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Chlordanes - Total	mg/kg	0.1	-	50	-	< 0.1	< 0.1	< 0.1
d-BHC	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	mg/kg	0.05	-	240	-	< 0.05	< 0.05	< 0.05
Dieldrin	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Endosulfan I	mg/kg	0.05	-	270	-	< 0.05	< 0.05	< 0.05
Endosulfan II	mg/kg	0.05	-		-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Endrin	mg/kg	0.05	-	10	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Endrin ketone	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Heptachlor	mg/kg	0.05	-	6	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	mg/kg	0.05	-	-	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene (HCB)	mg/kg	0.05	-	10	-	< 0.05	< 0.05	< 0.05
Methoxychlor	mg/kg	0.05	-	300	-	< 0.05	< 0.05	< 0.05
Toxaphene	mg/kg	0.1	-	20	-	< 0.1	< 0.1	< 0.1
Organophosphorous Pesticides								
Azinphos-methyl	mg/kg	0.2				< 0.2	< 0.2	< 0.2
Bolstar	mg/kg	0.2				< 0.2	< 0.2	< 0.2
Chlorfenvinphos	mg/kg	0.2				< 0.2	< 0.2	< 0.2
Chlorpyrifos	mg/kg	0.2				< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	mg/kg	0.2				< 0.2	< 0.2	< 0.2
Coumaphos	mg/kg	2				< 2	< 2	< 2

# FIGURES

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#### LEGEND

- Property Boundary
- Drainage Alignment
- 1in100 Flood Levels
- Contour (10m)

- Drainage Alignment
- 1in100 Flood Levels

TITLE Site Location

FIGURE Figure 1

SHEET 1 OF 1

ISSUE A

PROJECT  
Environmental  
Investigations for Lot 2,  
145 & Lot 200 South Arm  
Rd, Urunga

CLIENT  
David  
Riddell

AUTHOR

DATE

SCALE

PROJECT

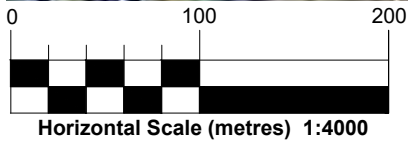
SD

30/03/22

1:15,000

2021-83

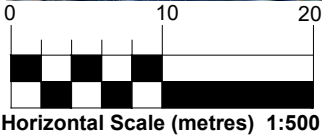




- LEGEND**
- Property Boundary
  - Drainage Alignment
  - Contour Line (1m)
  - 1in100 Flood Extents
  - Proposed R5 Lots
  - Acceptable Wastewater

TITLE Proposed Development Layout			FIGURE Figure 2
PROJECT Environmental Investigations for Lot 2 and Lot 200 South Arm Rd, Urunga			SHEET 1 OF 1
AUTHOR SD			ISSUE A
DATE 30/03/22			CLIENT David Riddell
SCALE 1:4000			PROJECT 2021-83

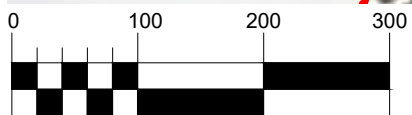
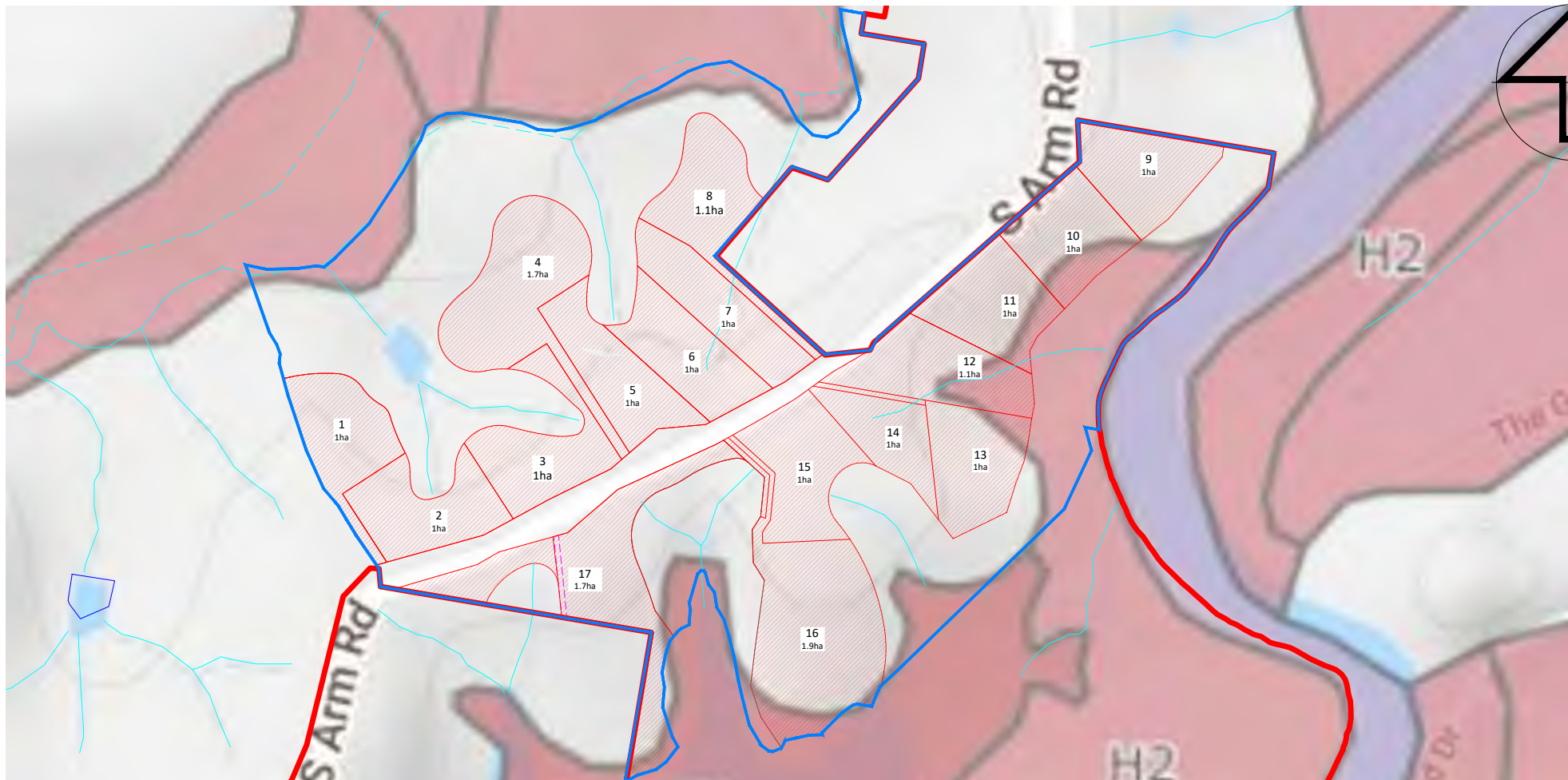




- LEGEND**
- Property Boundaries
  - Adjacent Lots
  - Intermittent waterways
  - Planning Proposal Extent
  - Contour (2m)
  - Approx Borehole/Sample Location

TITLE Existing Site Layout and Sample Locations			FIGURE Figure 3	
PROJECT Environmental Investigations for Lot 2 and Lot 200 South Arm Rd, Urunga			SHEET 1 OF 1	ISSUE A
AUTHOR SD			DATE 30/03/22	SCALE 1:5000
			CLIENT David Riddell	PROJECT 2021-83





### LEGEND

- Property Boundary
- Contour (10m)
- Drainage Alignment
- Proposed R5 Lots

TITLE ASS Risk Mapping

FIGURE Figure 4

PROJECT Environmental Investigations for Lot 2, 124 & Lot 200 South Arm Rd, Urunga

CLIENT David Riddell

SHEET 1 OF 1

ISSUE A

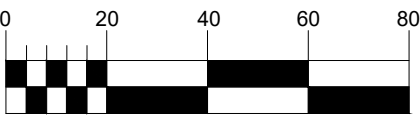
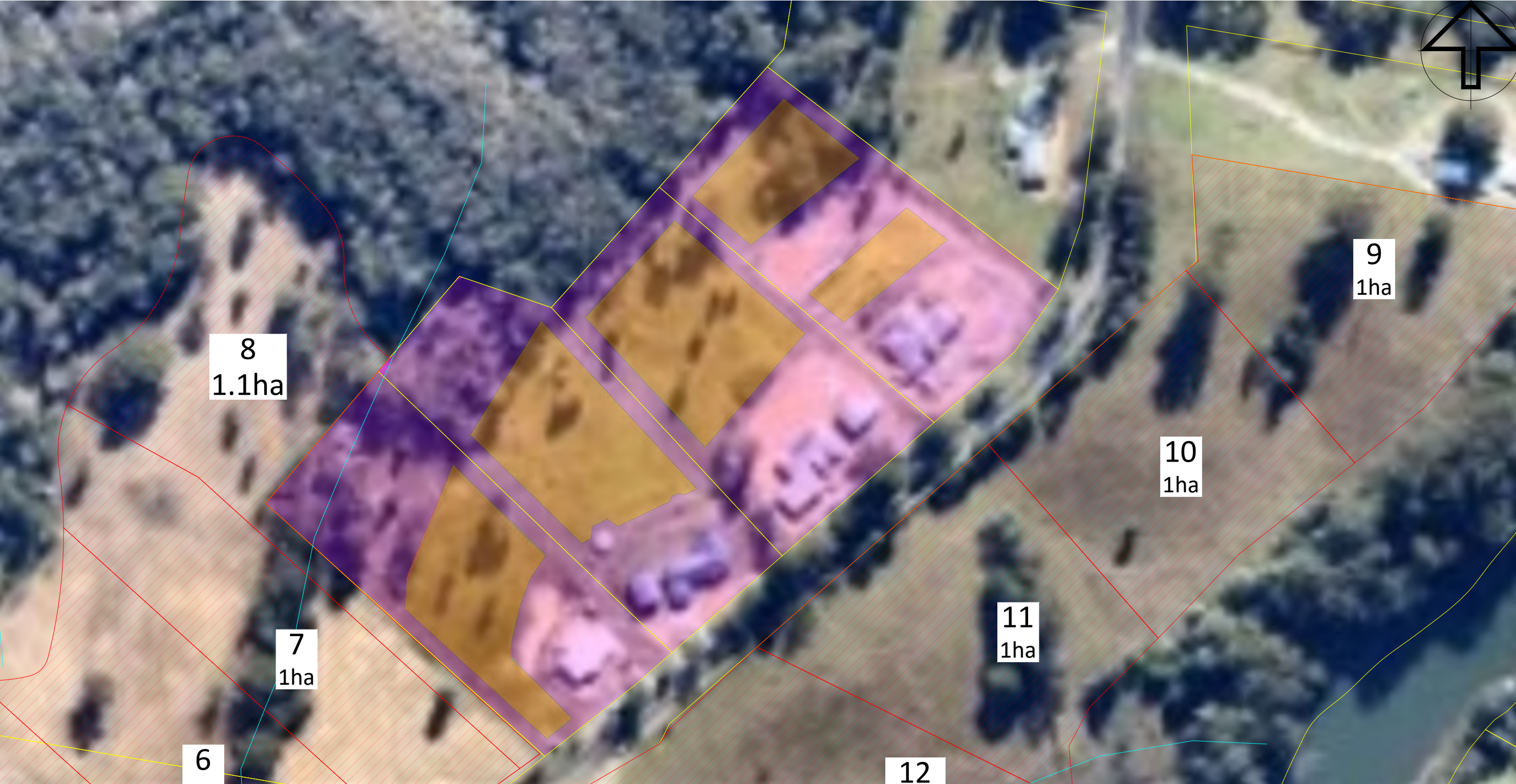
AUTHOR SD

DATE 30/03/22

SCALE 1:6000

PROJECT 2021-83





Horizontal Scale (metres) 1:1500

**LEGEND**

- Property Boundary
- Adjacent Lot
- Drainage Alignment
- EMA Restricted Area
- EMA Available Area

TITLE

Comparative Lot Size Constraints

FIGURE Figure 5

SHEET

1 OF 1

ISSUE

A

PROJECT

Environmental Investigations for  
Lot 2, 124 & Lot 200 South Arm  
Rd, Urunga

CLIENT

David  
Riddell

AUTHOR

SD

DATE

30/03/22

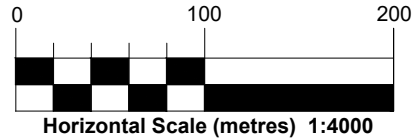
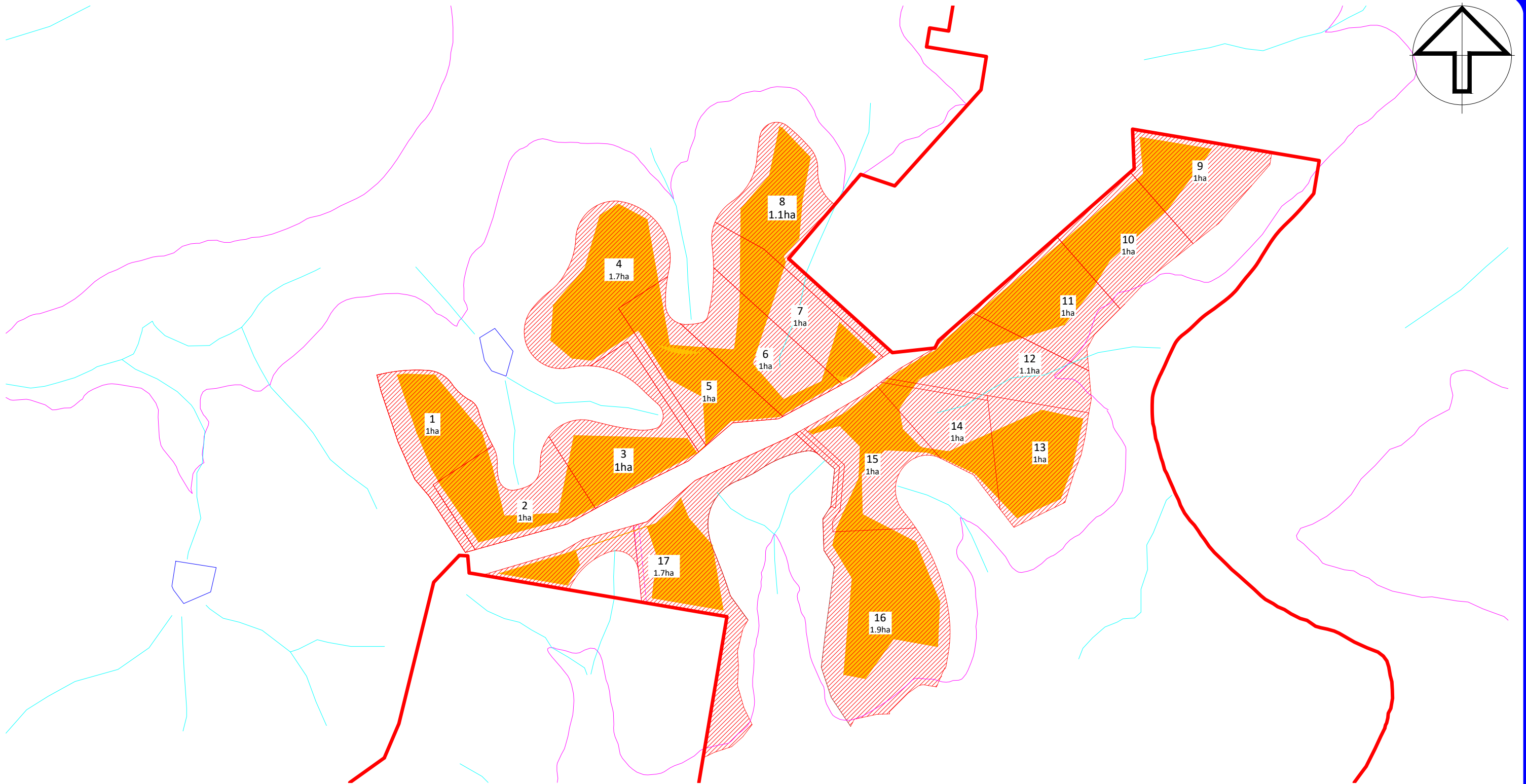
SCALE

1:1500

PROJECT

2021-83





- LEGEND**
- Property Boundary
  - Drainage Alignment
  - Contour Line (1m)
  - 1in100 Flood Extents
  - Proposed R5 Lots
  - Acceptable Wastewater EMA

TITLE Wastewater Available EMAs			FIGURE Figure 6
PROJECT Environmental Investigations for Lot 2, 124 & Lot 200 South Arm Rd, Urunga			SHEET 1 OF 1
AUTHOR SD			ISSUE A
DATE 30/03/22		SCALE 1:4000	CLIENT David Riddell
PROJECT 2021-83			

# APPENDIX A

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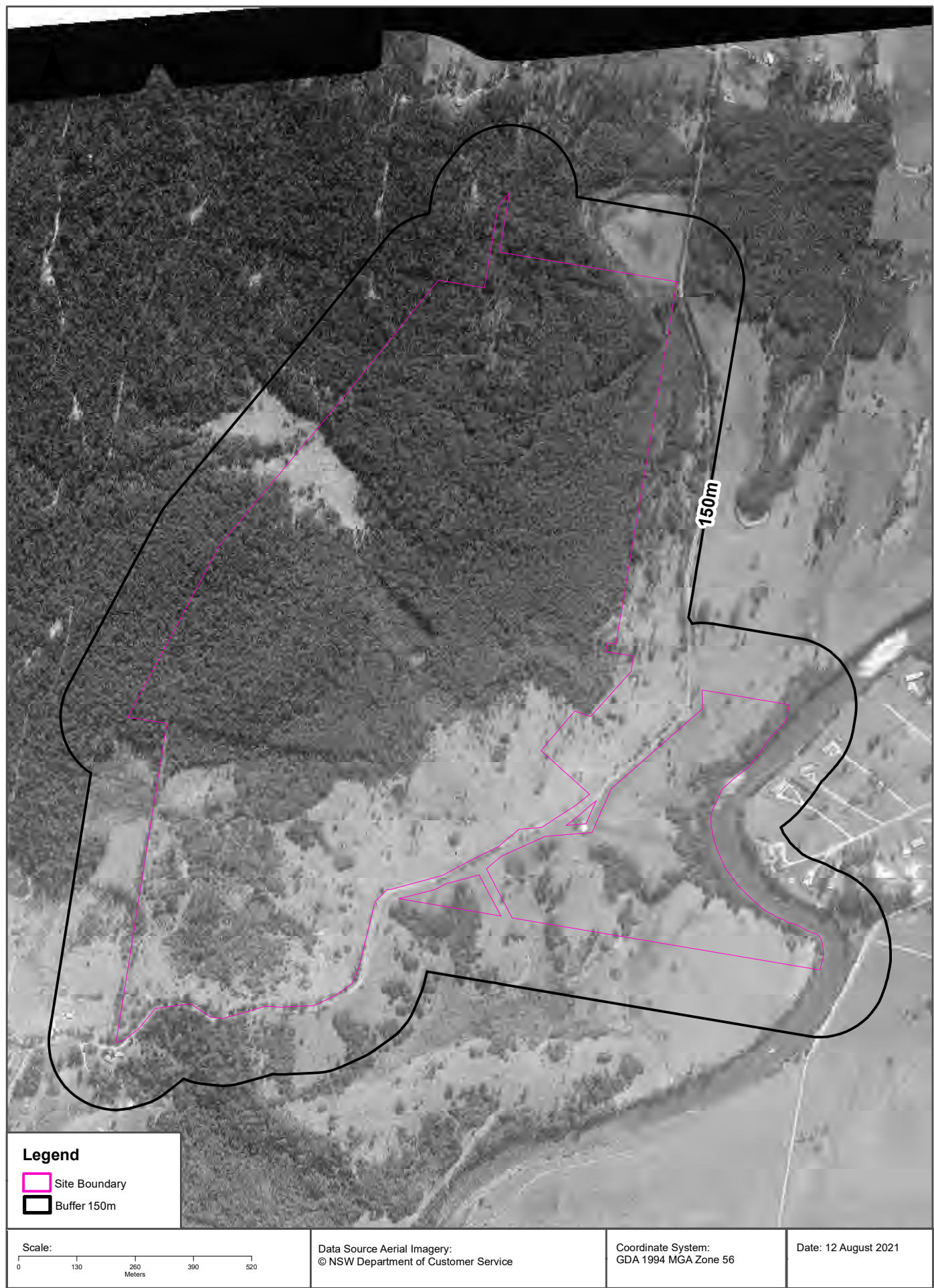


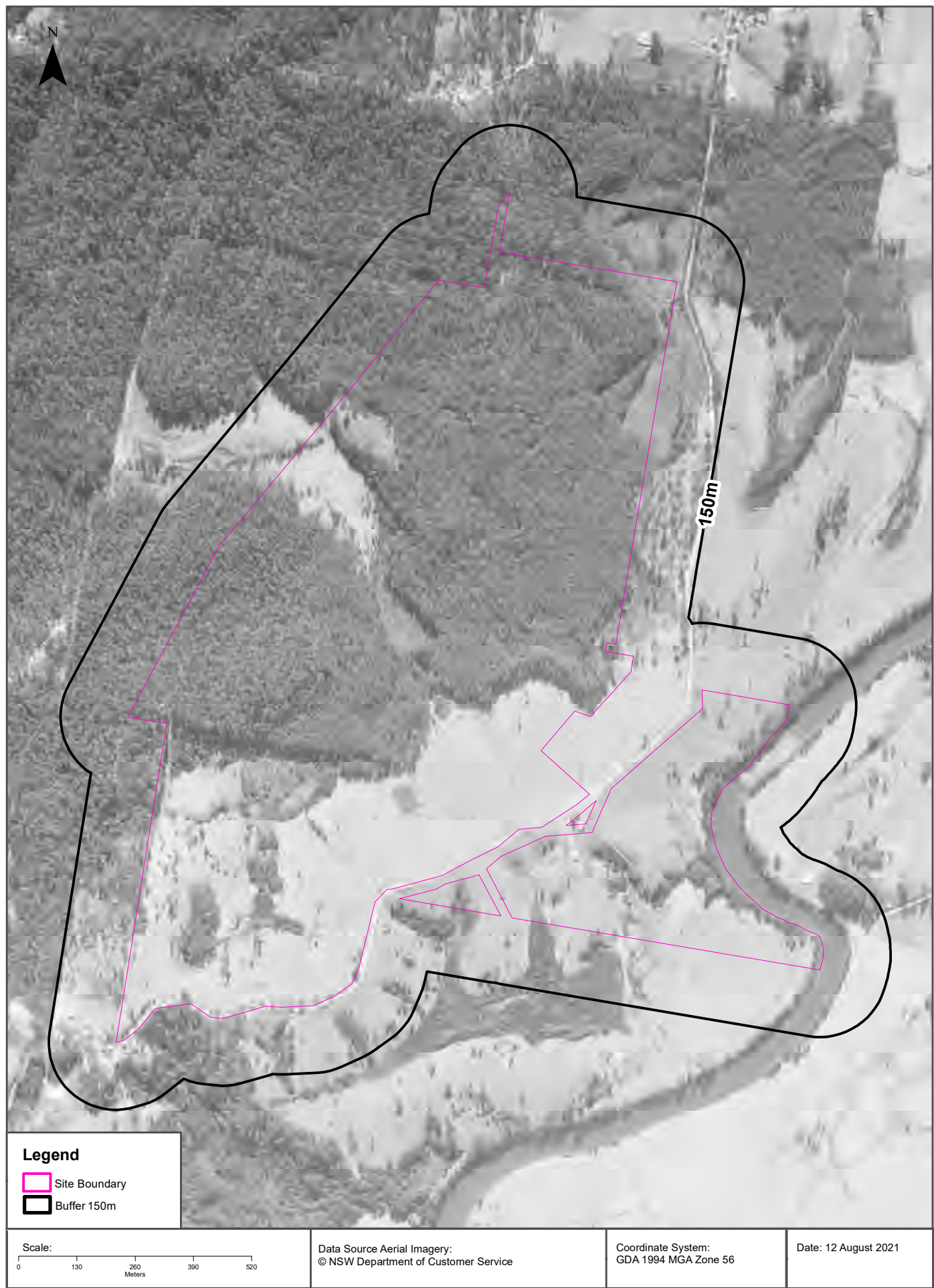




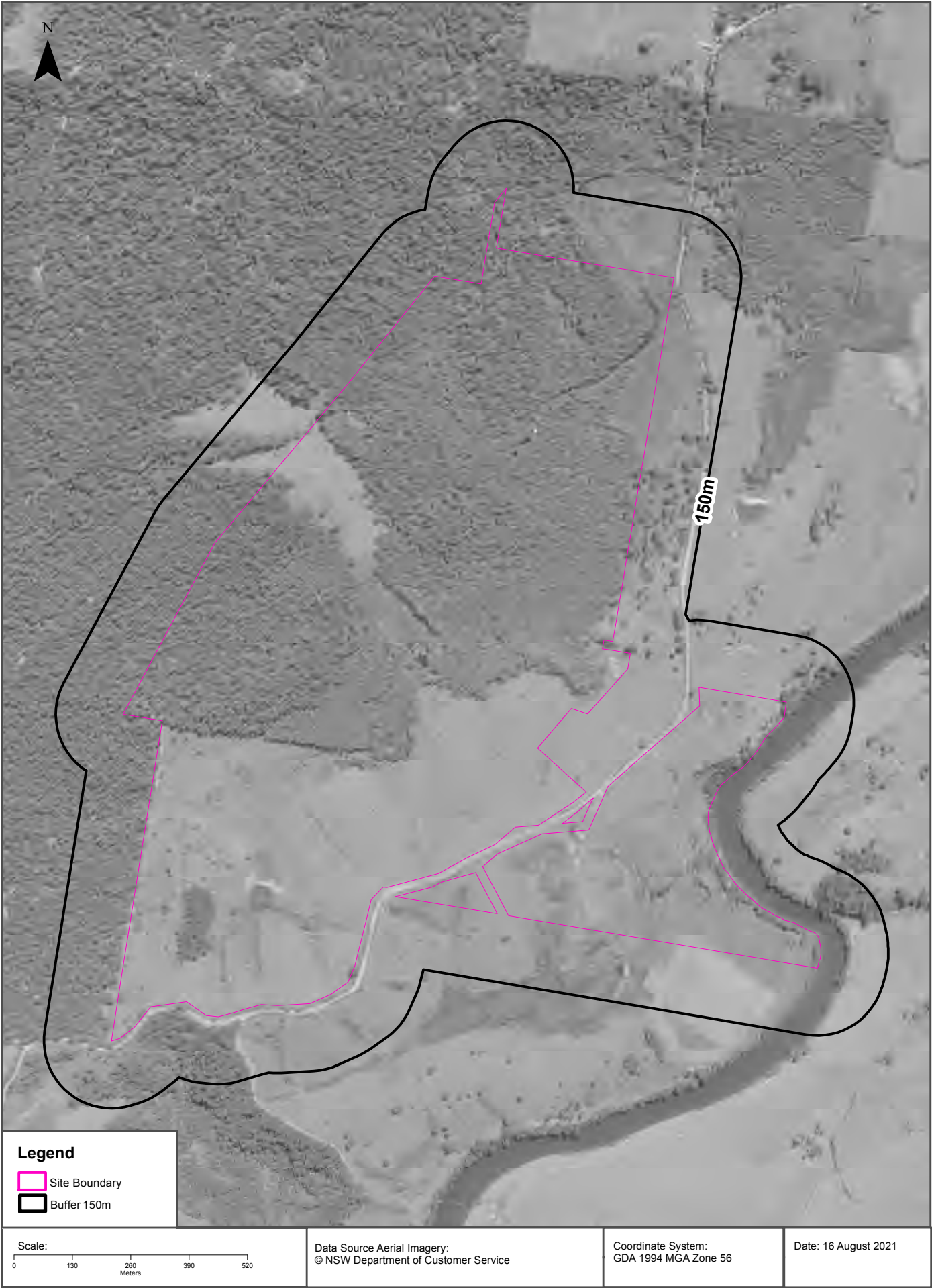


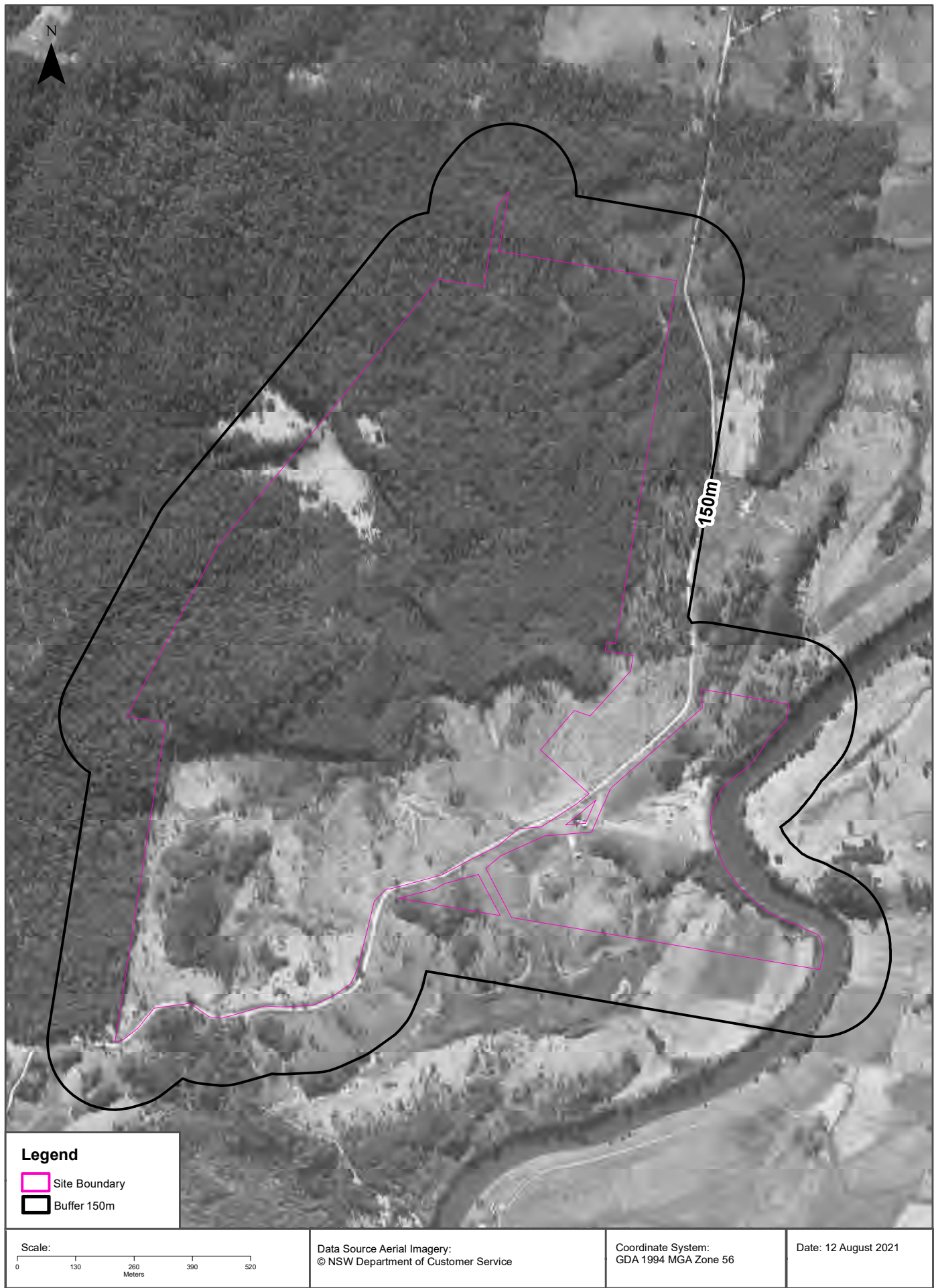




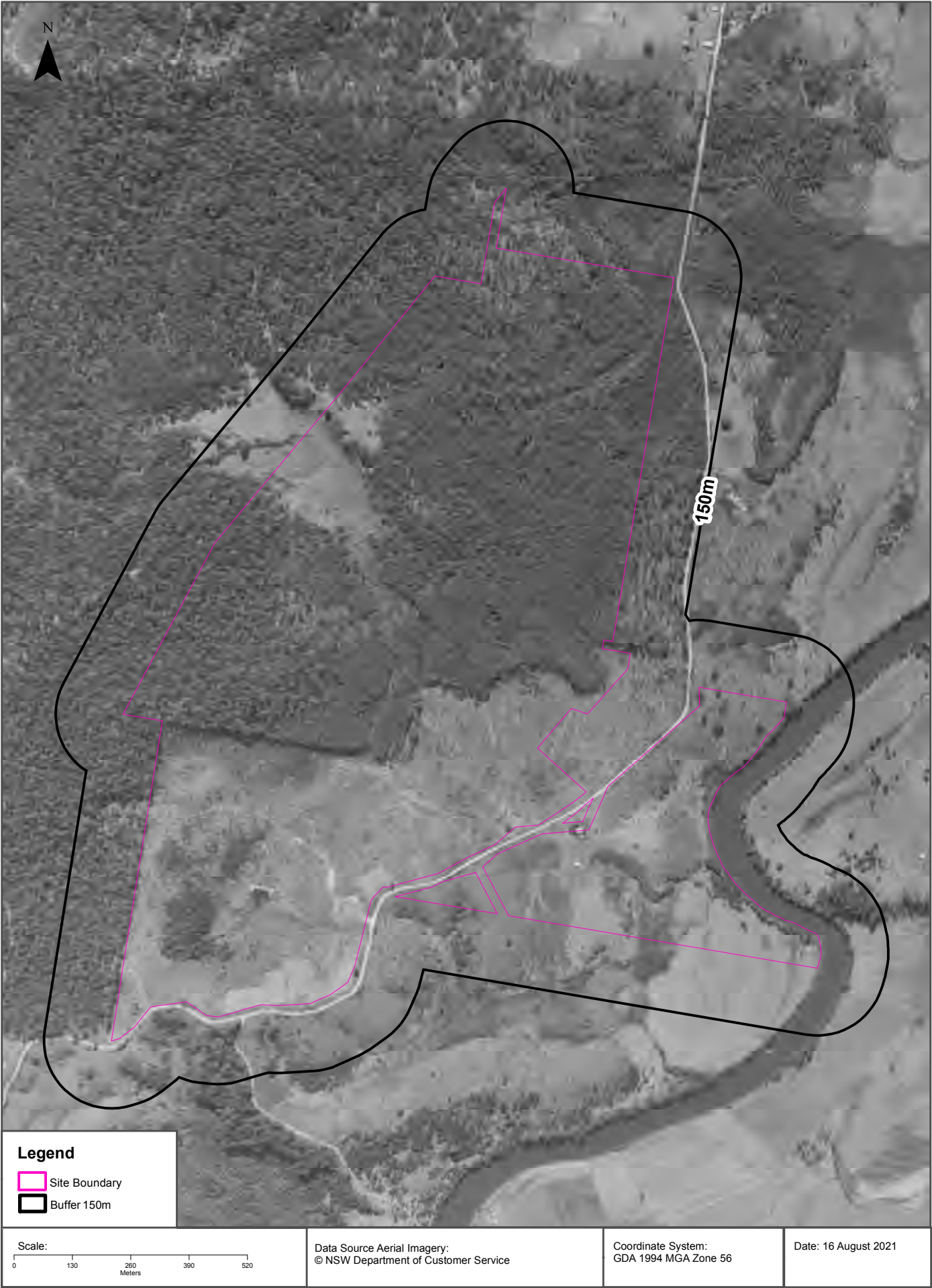












# APPENDIX B

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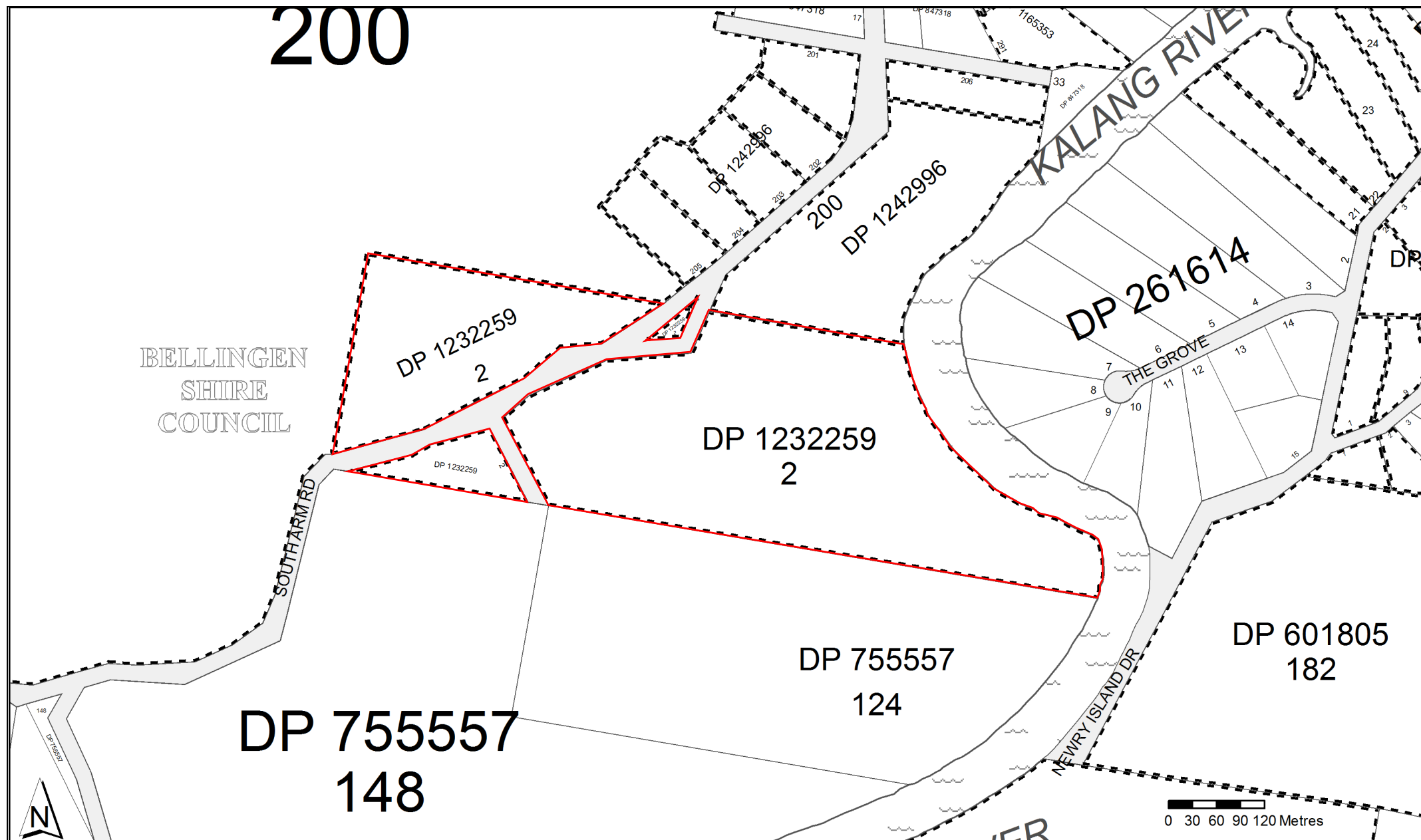
# Cadastral Records Enquiry Report : Lot 2 DP 1232259

Locality : URUNGA

LGA : BELLINGEN

Parish : SOUTH BELLINGEN

County : RALEIGH





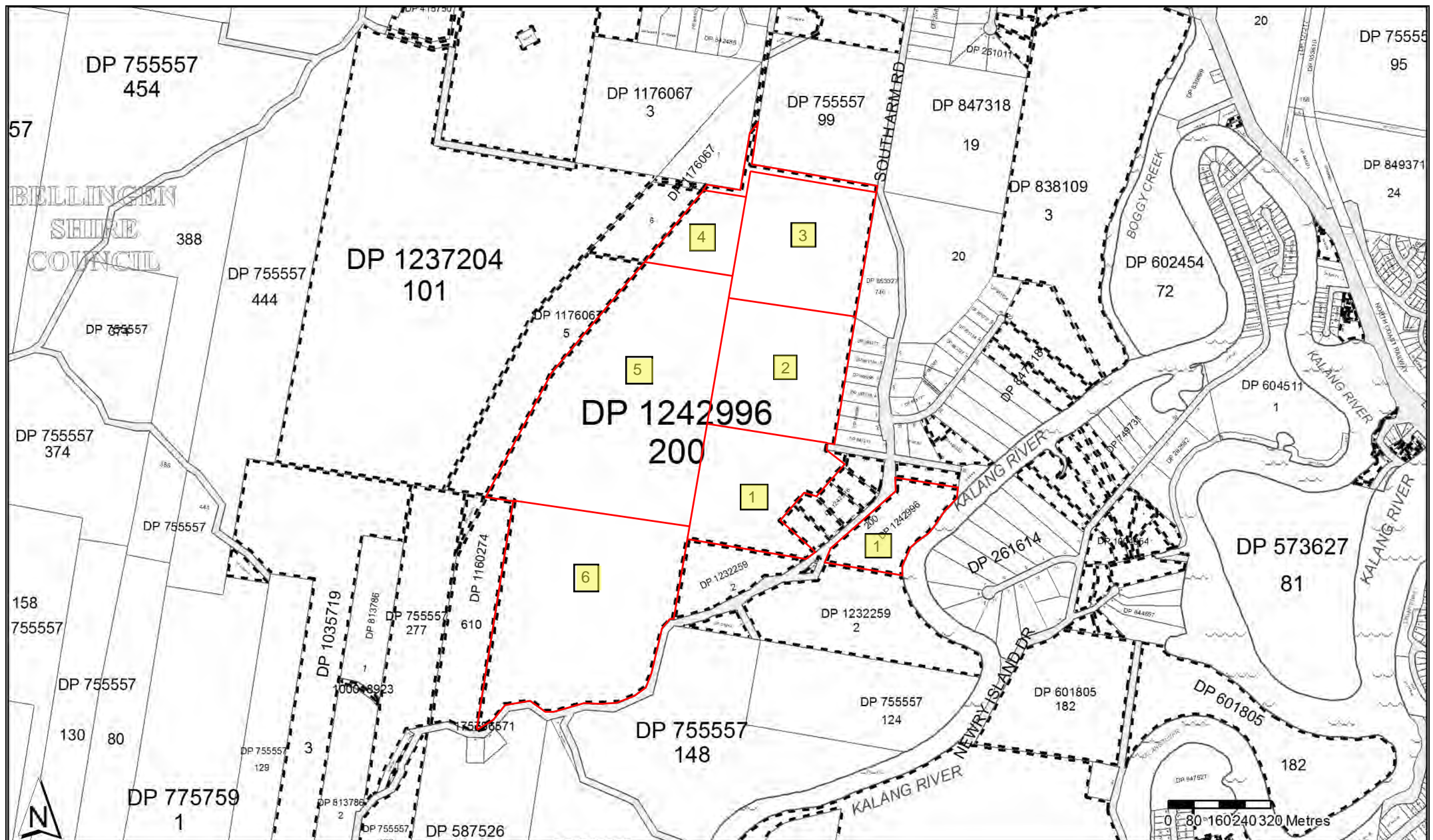
# Cadastral Records Enquiry Report : Lot 200 DP 1242996

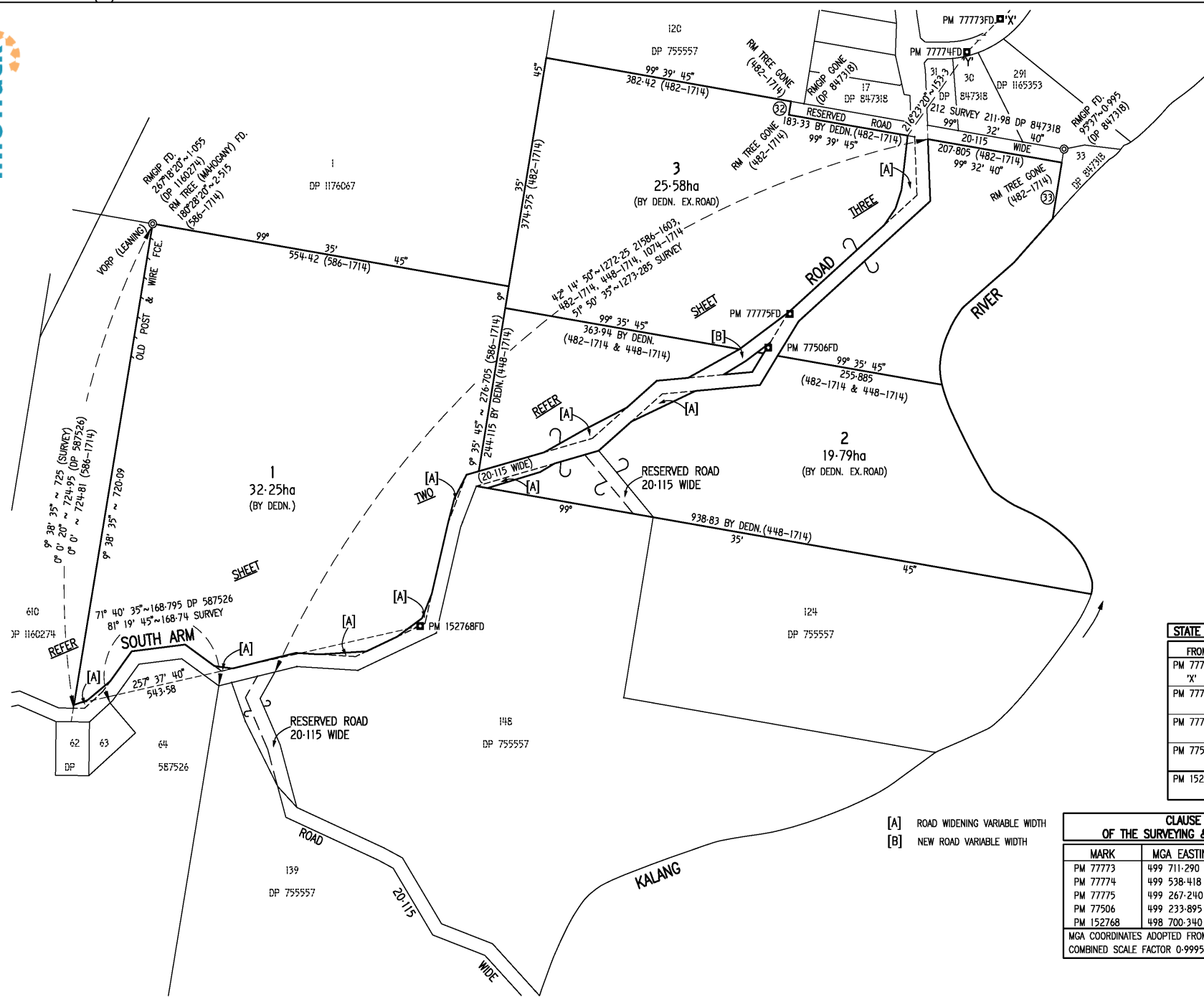
Locality : URUNGA

Parish : SOUTH BELLINGEN

LGA : BELLINGEN

County : RALEIGH





SHORT LINES		
(No)	BEAR. & DIST.	
32	189°39'45" - 20-115	(482-1714)
33	189°35'45" - 84-09	(482-1714)

STATE SURVEY MARKS — CONNECTIONS & COMPARISONS				
FROM	TO	ORIGIN	BEARING & GROUND DISTANCE	
PM 77773	PM 77774	SURVEY	226° 12' 40" ~	239-566
'X'	'Y'	SCIMS	226° 12' 40" ~	239-568
PM 77774	PM 77775	SURVEY	215° 03' 29" ~	472-273
		SCIMS	215° 03' 31" ~	472-289
PM 77775	PM 77506	SURVEY	213° 47' 11" ~	60-001
		SCIMS	213° 47' 12" ~	59-986
PM 77506	PM 152768	SURVEY	232° 24' 44" ~	673-597
		SCIMS	232° 24' 43" ~	673-60
PM 152768	PM 77773	SURVEY	44° 57' 01" ~	1431-518
		SCIMS	44° 57' 01" ~	1431-526


CLAUSE 35(1)(B) AND CLAUSE 61(2) OF THE SURVEYING & SPATIAL INFORMATION REGULATION 2012						
MARK	MGA EASTING	MGA NORTHING	CL.	ORD.	METHOD	ORIGIN
PM 77773	499 711-290	6 626 974-138	B	2	FROM SCIMS	SCIMS
PM 77774	499 538-418	6 626 808-424	B	2	FROM SCIMS	SCIMS
PM 77775	499 267-240	6 626 421-982	B	2	FROM SCIMS	SCIMS
PM 77506	499 233-895	6 626 372-147	B	2	FROM SCIMS	SCIMS
PM 152768	498 700-340	6 625 961-433	C	3	FROM SCIMS	SCIMS
MGA COORDINATES ADOPTED FROM SCIMS AS AT 7 MARCH 2016 COMBINED SCALE FACTOR 0.999591 ZONE 56						

[A] ROAD WIDENING VARIABLE WIDTH  
 [B] NEW ROAD VARIABLE WIDTH

Surveyor: Michael F. Lamont  
 Date of Survey: 9th March 2016  
 Surveyor's Reference: 14117/2

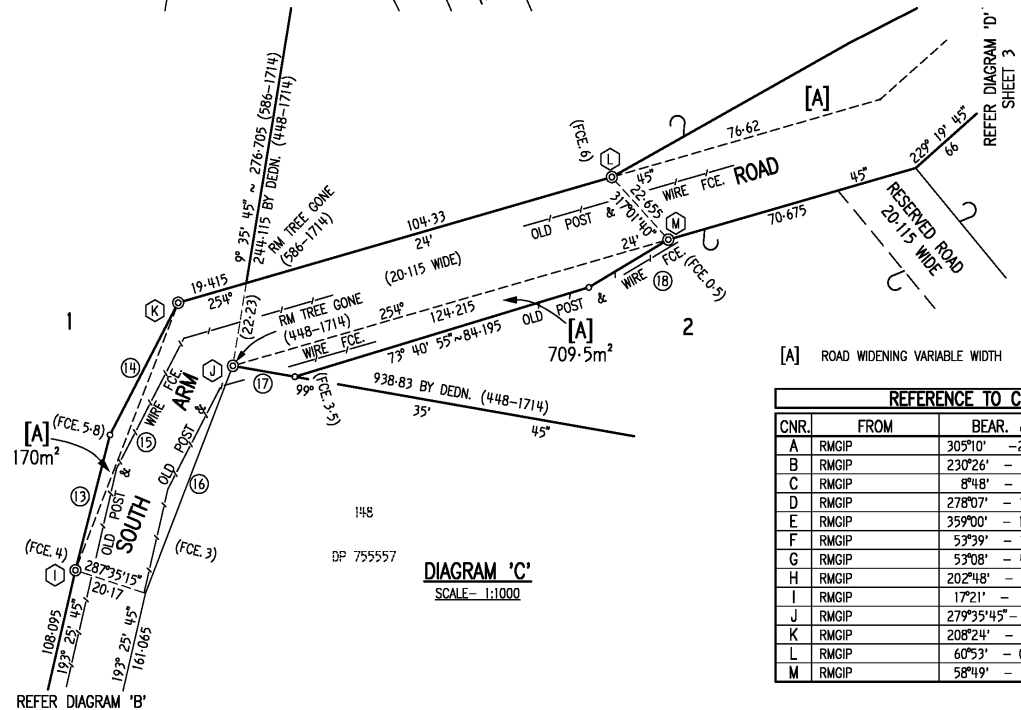
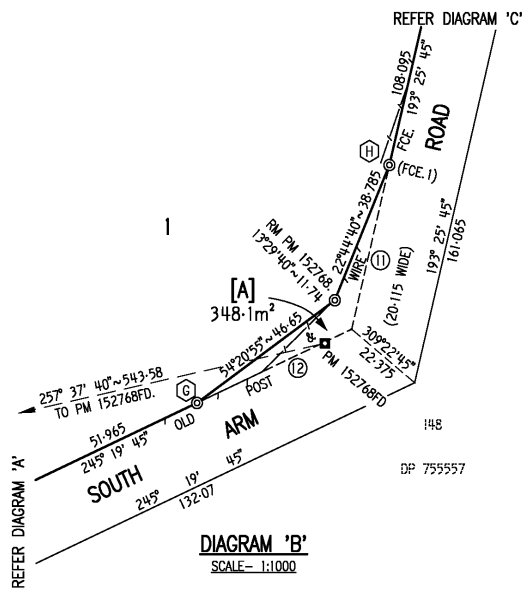
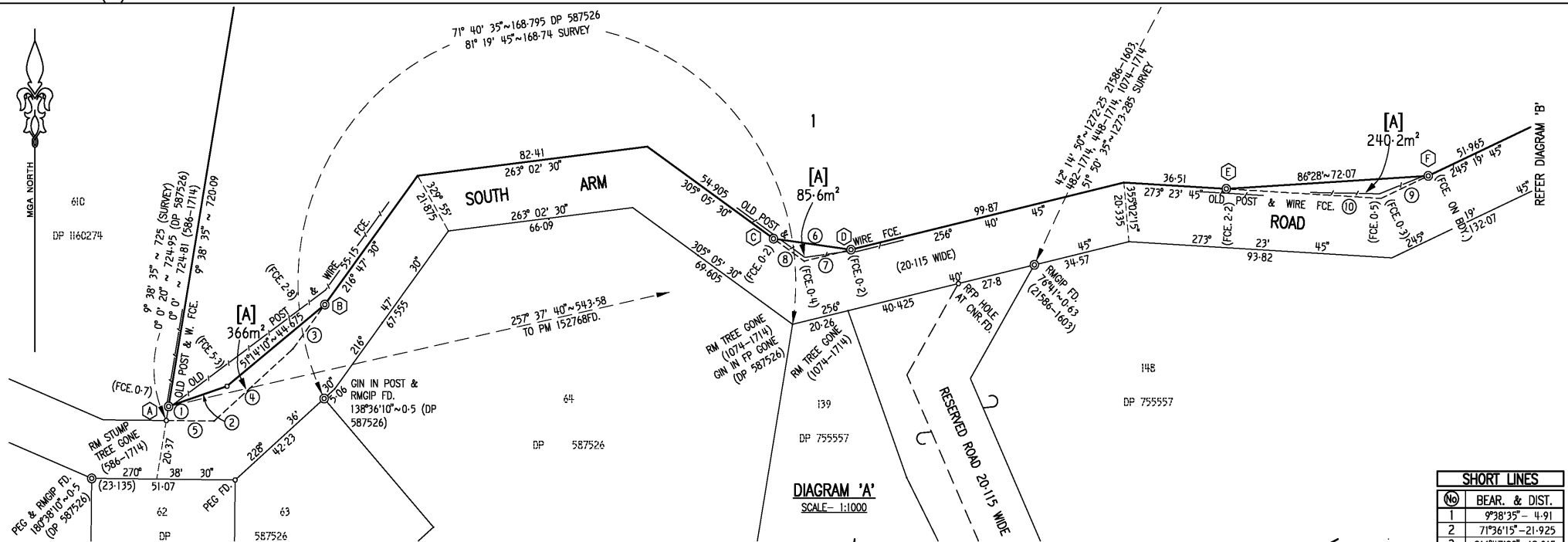
PLAN  
 SUBDIVISION OF  
 LOTS 125, 126 & 195  
 IN DP 755557

LGA: BELLINGEN  
 Locality: URUNGA  
 Subdivision No.: 2017/SC-00008

Registered  
 21.8.2017

DP1232259

Lengths are in metres. Reduction Ratio 1:4000



[A] ROAD WIDENING VARIABLE WIDTH

REFERENCE TO CORNERS			
CNR.	FROM	BEAR. & DIST.	ORIGIN
A	RMGIP	305°10' - 2.575	SURVEY
B	RMGIP	230°26' - 4.265	SURVEY
C	RMGIP	8°48' - 1.2	SURVEY
D	RMGIP	278°07' - 1	SURVEY
E	RMGIP	359°00' - 1.195	SURVEY
F	RMGIP	53°39' - 1.66	SURVEY
G	RMGIP	53°08' - 4.68	SURVEY
H	RMGIP	202°48' - 2.005	SURVEY
I	RMGIP	17°21' - 1	SURVEY
J	RMGIP	279°35'45" - 1	SURVEY
K	RMGIP	208°24' - 0.98	SURVEY
L	RMGIP	60°53' - 0.985	SURVEY
M	RMGIP	58°49' - 1.11	SURVEY

Surveyor: Michael F. Lamont  
 Date of Survey: 9th March 2016  
 Surveyor's Reference: 14117/2

PLAN  
 SUBDIVISION OF  
 LOTS 125, 126 & 195  
 IN DP 755557

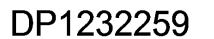
LGA: BELLINGEN  
 Locality: URUNGA  
 Subdivision No.: 2017/SC-00008

Lengths are in metres. Reduction Ratio 1:1000

Registered  
 21.8.2017

DP1232259

REFERENCE TO CORNERS				
CNR.	FROM	BEAR. & DIST.	ORIGIN	
L	RMGIP	60°53' - 0.985	SURVEY	
M	RMGIP	58°19' - 1.11	SURVEY	
N	RMGIP	318°54' - 4.395	SURVEY	
O	RMGIP	138°50' - 0.97	SURVEY	
P	RMGIP	162°48' - 2.17	SURVEY	
	RMGIP	174°36' - 0.98	SURVEY	
Q	RMGIP	354°54' - 1.015	SURVEY	
R	RMGIP	59°06' - 0.99	SURVEY	
S	RMGIP	215°26' - 0.965	SURVEY	
T	RMGIP	320°00' - 0.995	SURVEY	
U	RMGIP	97°27' - 1	SURVEY	






PLAN FORM 6 (2012)

WARNING: Creasing or folding will lead to rejection

ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 1 of 2 sheet(s)

Registered:  21.8.2017

Office Use Only

Office Use Only

Title System: TORRENS

DP1232259

Purpose: SUBDIVISION

PLAN OF

SUBDIVISION OF

LOTS 125, 126 & 195 IN DP755557

LGA: BELLINGEN

Locality: URUNGA

Parish: SOUTH BELLINGEN

County: RALEIGH

Crown Lands NSW/Western Lands Office Approval

I, ..... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

Survey Certificate

I, MICHAEL F. LAMONT

of RESOURCE DESIGN & MANAGEMENT PTY LTD

P.O. BOX 4430 COFFS HARBOUR JETTY, NSW 2450.

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

\*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on .....

\*(b) The part of the land shown in the plan (\*being PART LOT 1 TO LOT 3 INCLUSIVE WITH CONNECTIONS) was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on 9 MARCH 2016, the part not surveyed was compiled in accordance with that Regulation:

\*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2012*.

Signature: ..... Dated: 26.07.17

Surveyor ID: 1440

Datum Line: X (PM 77773) – Y (PM 77774)

Type: \*Urban/\*Rural

The terrain is \*Level-Undulating / \*Steep-Mountainous.

\*Strike through if inapplicable.

\*Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Subdivision Certificate

I, L12 Jeremy .....  
 \*Authorised Person/\*General Manager/\*Accredited Certifier, certify that the provisions of s.109J of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: ..... 21/7

Accreditation number: .....

Consent Authority: Bellingen Shire Council

Date of endorsement: 4 August 2017

Subdivision Certificate number: 2017/SC-00008

File number: 2016/AF-00139

\*Strike through if inapplicable.

Statements of intention to dedicate public roads, public reserves and drainage reserves.

IT IS INTENDED TO DEDICATE THE NEW ROAD AND THE ROAD WIDENING SHOWN HEREON TO THE PUBLIC AS PUBLIC ROAD.

Plans used in the preparation of survey/compilation.

448-1714 482-1714

586-1714 1074-1714

2674-1603 21586-1603

DP 587526 DP847318

DP 1160274 371-1714

If space is insufficient continue on PLAN FORM 6A

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

Surveyor's Reference: 14117/2

PLAN FORM 6A (2012)

WARNING: Creasing or folding will lead to rejection

ePlan

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 2 sheet(s)

Registered:



21.8.2017

Office Use Only

Office Use Only

PLAN OF

SUBDIVISION OF

LOTS 125, 126 & 195 IN DP755557

DP1232259

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number: 2017/SC-00008

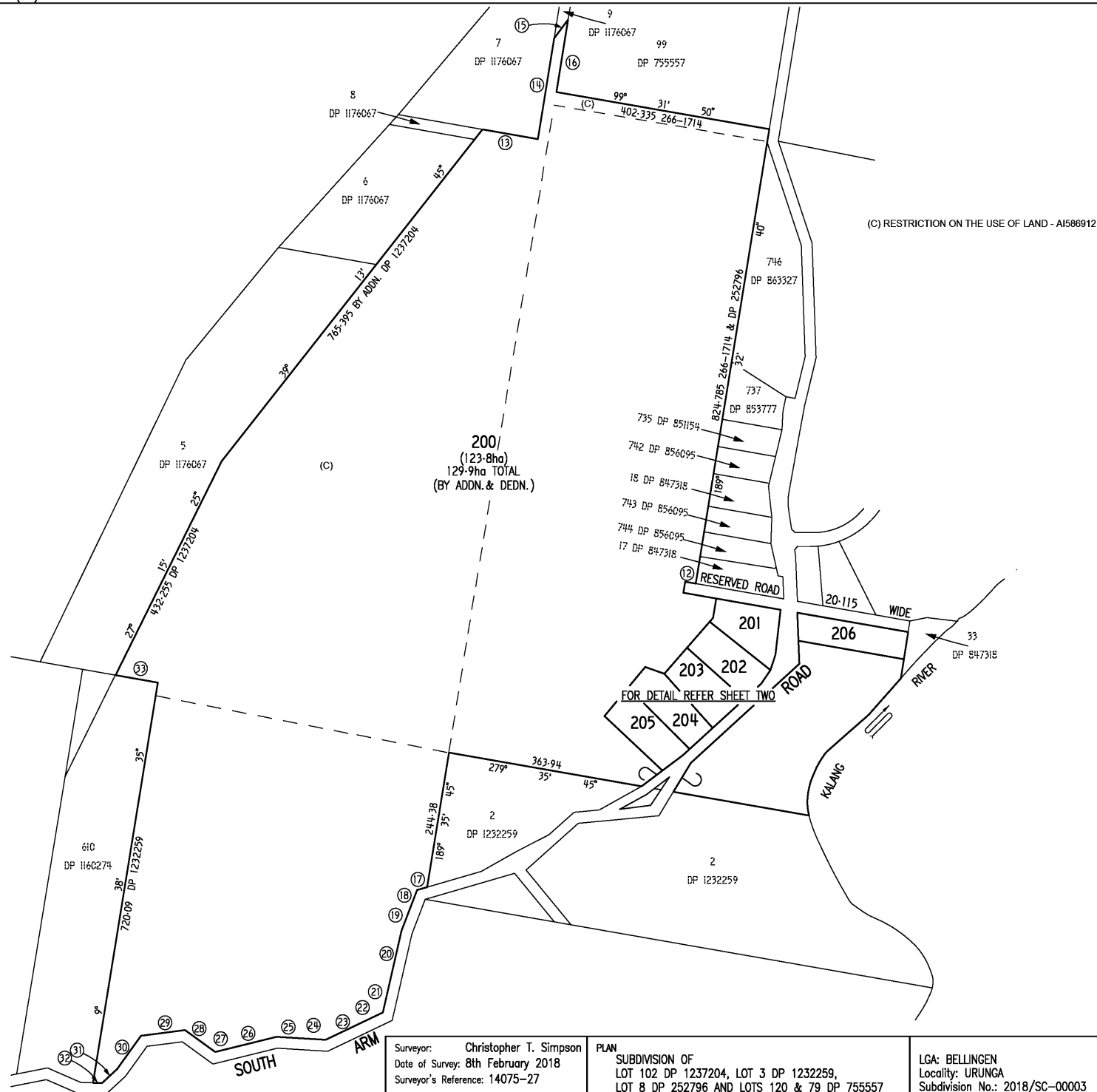
Date of Endorsement: 4 August 2017

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
1	N/A	SOUTH ARM	ROAD	URUNGA
2	201	SOUTH ARM	ROAD	URUNGA
3	N/A	SOUTH ARM	ROAD	URUNGA

Judith Langford Riddel

If space is insufficient use additional annexure sheet

Surveyor's Reference:14117/2



SHORT LINES		
No	BEAR. & DIST.	ORIGIN
12	99°39'45" - 20.115	482-1714
13	99°36'05" - 104.375	DP 1237204
14	9°31'50" - 183.125	DP 1237204
15	38°04' - 42.11	DP 1237204
16	189°31'50" - 130.105	BY DEDN. DP 1176067 & 266-1714
17	254°24'45" - 19.415	DP 1232259
18	208°11'55" - 39.685	DP 1232259
19	194°50'20" - 37.085	DP 1232259
20	193°25'45" - 108.095	DP 1232259
21	202°44'40" - 38.785	DP 1232259
22	234°20'55" - 46.65	DP 1232259
23	245°19'45" - 51.965	DP 1232259
24	266°28' - 72.07	DP 1232259
25	273°23'45" - 36.51	DP 1232259
26	256°40'45" - 99.87	DP 1232259
27	277°45'30" - 27.855	DP 1232259
28	305°05'30" - 54.905	DP 1232259
29	263°02'30" - 82.41	DP 1232259
30	216°47'30" - 55.155	DP 1232259
31	231°14'10" - 44.675	DP 1232259
32	251°36'15" - 21.925	DP 1232259
33	279°38'35" - 80.695	DP 1237204

Surveyor: Christopher T. Simpson  
Date of Survey: 8th February 2018  
Surveyor's Reference: 14075-27

PLAN  
SUBDIVISION OF  
LOT 102 DP 1237204, LOT 3 DP 1232259,  
LOT 8 DP 252796 AND LOTS 120 & 79 DP 755557

LGA: BELLINGEN  
Locality: URUNGA  
Subdivision No.: 2018/SC-00003

Lengths are in metres. Reduction Ratio 1:5000

Registered  
04.06.2018

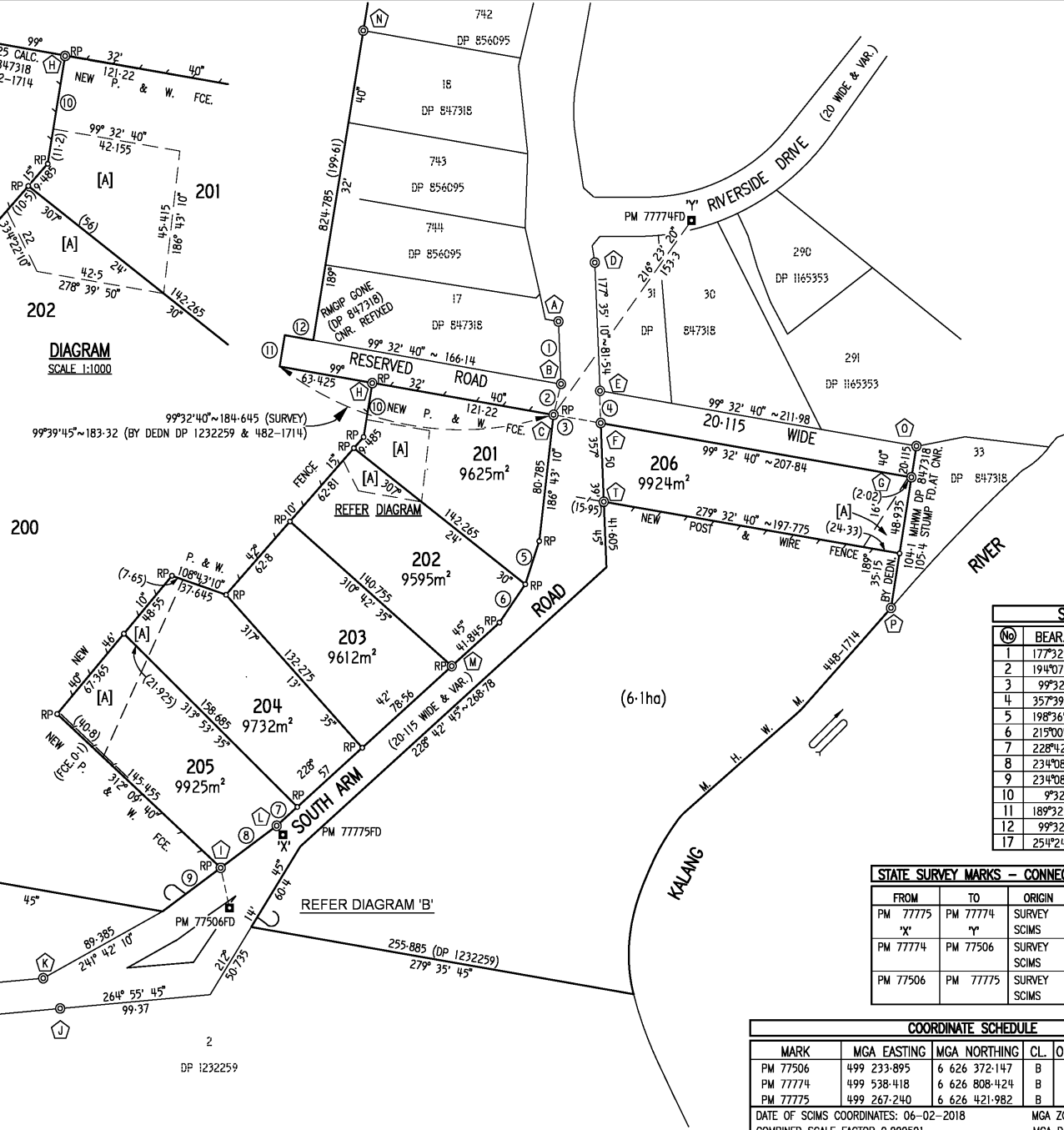
DP1242996 (E)



REFERENCE TO CORNERS			
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B	RMGIP FD.	271°16' -1.005	DP 847318
C	RMGIP FD.	320°00' -0.495	DP 1232259
D	RMGIP FD.	76°19' -1.01	DP 847318
E	RMGIP FD.	75°12' -0.995	DP 847318
		95°27'45" -1.005	& DP 1232259 SURVEY
F	RMGIP FD.	97°27' -1	DP 1232259
G	RMGIP	198°41' -0.75	SURVEY
H	RMGIP	203°39' -1.375	SURVEY
I	RMGIP	292°17' -0.645	SURVEY
J	RM PM 77506	34°70' -26.105	SURVEY
K	RMGIP FD.	174°36' -0.98	DP 1232259
L	RMGIP FD.	162°48' -2.17	DP 1232259
M	RMGIP FD.	354°54' -1.015	DP 1232259
N	RM PM 77775FD	315°02' -3.2	DP 1232259
O	RMGIP FD.	215°26' -0.965	DP 1232259
P	RMGIP FD.	279°31' -1	DP 847318
Q	RMGIP FD.	95°37' -0.995	DP 847318
R	REF. TREE STUMP FD.	AT CNR.	448-1714
S	RMGIP FD.	60°53' -0.985	DP 1232259
T	RMGIP FD.	208°24' -0.98	DP 1232259
U	REMS. REF. TREE STUMP FD.	336°49'15" -5.53	448-1714
V	RMGIP	178°04' -0.985	SURVEY

[A] RESTRICTION ON USE - VARIABLE WIDTH

RP ROUND FENCE POST AT CNR.

DIAGRAM 'B'  
NOT TO SCALEDIAGRAM  
SCALE 1:1000

SHORT LINES		
NO	BEAR. & DIST.	ORIGIN
1	177°32'45" -39.78	
2	194°07' -20.18	
3	99°32'40" -31.52	
4	357°39'45" -20.56	
5	198°36' -28.87	
6	215°00'30" -29.69	
7	228°42'45" -18.1	
8	234°08'25" -45.56	
9	234°08'25" -47.29	
10	9°32'35" -34.72	
11	189°32'40" -20.115	DP 1232259
12	99°32'40" -20.115	482-1714
17	254°24'45" -19.415	DP 1237204

STATE SURVEY MARKS - CONNECTIONS &amp; COMPARISONS

FROM	TO	ORIGIN	BEARING & GROUND DISTANCE
PM 77775	PM 77774	SURVEY SCIMS	35° 03' 31" ~ 472.286
PM 77774	PM 77506	SURVEY SCIMS	214° 54' 55" ~ 532.262
PM 77506	PM 77775	SURVEY SCIMS	33° 47' 11" ~ 59.99
			33° 47' 12" ~ 59.986

COORDINATE SCHEDULE

MARK	MGA EASTING	MGA NORTHING	CL.	ORD.	METHOD	STATE
PM 77506	499 233.895	6 626 372.147	B	2	FROM SCIMS	FOUND
PM 77774	499 538.418	6 626 808.424	B	2	FROM SCIMS	FOUND
PM 77775	499 267.240	6 626 421.982	B	2	FROM SCIMS	FOUND
DATE OF SCIMS COORDINATES: 06-02-2018						MGA ZONE: 56
COMBINED SCALE FACTOR 0.999591						MGA DATUM: GDA94

Surveyor: Christopher T. Simpson  
Date of Survey: 8th February 2018  
Surveyor's Reference: 14075-27

PLAN  
SUBDIVISION OF  
LOT 102 DP 1237204, LOT 3 DP 1232259,  
LOT 8 DP 252796 AND LOTS 120 & 79 DP 755557


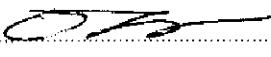
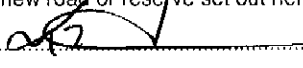
LGA: BELLINGEN  
Locality: URUNGA  
Subdivision No.: 2018/SC-00003

Lengths are in metres. Reduction Ratio 1:2000

Registered  
04.06.2018

DP1242996



<b>PLAN FORM 6 (2017)</b>	<b>DEPOSITED PLAN ADMINISTRATION SHEET</b>	Sheet 1 of 2 sheet(s)												
<div style="display: flex; justify-content: space-between;"> <div style="width:45%;"> <p>Registered:  <b>04.06.2018</b></p> <p>Title System: <b>TORRENS</b></p> </div> <div style="width:45%; text-align: right;"> <p>Office Use Only</p> <p style="font-size: 2em; font-weight: bold;">DP1242996</p> </div> </div>														
<p><b>PLAN OF</b></p> <p>SUBDIVISION <del>AND CONSOLIDATION</del> OF LOT 102 DP 1237204, LOT 3 DP 1232259, LOT 8 DP 252796 AND LOTS 120 AND 79 DP 755557.</p>		<p>LGA: <b>BELLINGEN</b></p> <p>Locality: <b>URUNGA</b></p> <p>Parish: <b>SOUTH BELLINGEN</b></p> <p>County: <b>RALEIGH</b></p>												
<p style="text-align: center;">Survey Certificate</p> <p>I, <b>CHRISTOPHER T. SIMPSON</b>          of <b>RESOURCE DESIGN MANAGEMENT PTY LTD</b>  <b>PO BOX 4430 COFFS HARBOUR JETTY, NSW 2450</b>          a surveyor registered under the <i>Surveying and Spatial Information Act 2002</i>, certify that:</p> <p>*(a) The land shown in the plan was surveyed in accordance with the <i>Surveying and Spatial Information Regulation 2017</i>, is accurate and the survey was completed on ....., or</p> <p>*(b) The part of the land shown in the plan (*being/*excluding LOTS 201 TO 206 INCLUSIVE WITH CONNECTIONS) was surveyed in accordance with the <i>Surveying and Spatial Information Regulation 2017</i>, the part surveyed is accurate and the survey was completed on <b>8<sup>TH</sup> February 2018</b> the part not surveyed was compiled in accordance with that Regulation, or</p> <p>*(c) The land shown in this plan was compiled in accordance with the <i>Surveying and Spatial Information Regulation 2017</i>.</p> <p>Datum Line: PM 77775 "X" – PM 77774 "Y"</p> <p>Type: *Urban/*Rural</p> <p>The terrain is *Level-Undulating / *Steep-Mountainous.</p> <p>Signature:  Dated: <b>30/04/18</b></p> <p>Surveyor Identification No: 8757          Surveyor registered under the <i>Surveying and Spatial Information Act 2002</i></p> <p><small>*Strike out inappropriate words.          **Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.</small></p>		<p style="text-align: center;">Crown Lands NSW/Western Lands Office Approval</p> <p>I, ..... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.</p> <p>Signature: .....</p> <p>Date: .....</p> <p>File Number: .....</p> <p>Office: .....</p>												
<p style="text-align: center;">Subdivision Certificate</p> <p>I, <b>Liz Jeremy</b>  <del>*Authorised Person</del>/*General Manager/*Accredited Certifier, certify that the provisions of s.109J of the <i>Environmental Planning and Assessment Act 1979</i> have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.</p> <p>Signature: </p> <p>Accreditation number: .....</p> <p>Consent Authority: <b>Bellingen Shire Council</b></p> <p>Date of endorsement: <b>2 May 2018</b></p> <p>Subdivision Certificate number: <b>2018/SC-000003</b></p> <p>File number: <b>2016/RF-00139</b></p> <p><small>*Strike through if inapplicable.</small></p>														
<p>Plans used in the preparation of survey/compilation.</p> <table style="width:100%;"> <tr> <td>DP 1237204</td> <td>448 - 1714</td> </tr> <tr> <td>DP 1232259</td> <td>482 - 1714</td> </tr> <tr> <td>DP 1176067</td> <td>266 - 1714</td> </tr> <tr> <td>DP 1165353</td> <td></td> </tr> <tr> <td>DP 847318</td> <td></td> </tr> <tr> <td>DP 252796</td> <td></td> </tr> </table>		DP 1237204	448 - 1714	DP 1232259	482 - 1714	DP 1176067	266 - 1714	DP 1165353		DP 847318		DP 252796		<p>Statements of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.</p>
DP 1237204	448 - 1714													
DP 1232259	482 - 1714													
DP 1176067	266 - 1714													
DP 1165353														
DP 847318														
DP 252796														
<p>Surveyor's Reference: 14075-27</p>		<p>Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A</p>												

PLAN FORM 6A (2017)

DEPOSITED PLAN ADMINISTRATION SHEET

Sheet 2 of 2 sheet(s)

Registered:



04.06.2018

Office Use Only

Office Use Only

DP1242996

PLAN OF

SUBDIVISION AND CONSOLIDATION OF LOT  
102 DP 1237204, LOT 3 DP 1232259, LOT 8  
DP 252796 AND LOTS 120 AND 79 DP 755557.

Subdivision Certificate number: 2018/SC-00003

Date of Endorsement: 2 May 2018

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) SSI Regulation 2017
- Statements of intention to create and release affecting interests in accordance with section 88B Conveyancing Act 1919
- Signatures and seals- see 195D Conveyancing Act 1919
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
200	NA	SOUTH ARM	ROAD	URUNGA
201	172	SOUTH ARM	ROAD	URUNGA
202	180	SOUTH ARM	ROAD	URUNGA
203	186	SOUTH ARM	ROAD	URUNGA
204	194	SOUTH ARM	ROAD	URUNGA
205	200	SOUTH ARM	ROAD	URUNGA
206	169	SOUTH ARM	ROAD	URUNGA

IT IS INTENDED TO CREATE PURSUANT TO SEC. 88B OF THE CONVEYANCING ACT 1919:

1. RESTRICTION ON USE~~X~~ - VARIABLE WIDTH
2. POSITIVE COVENANT
3. RESTRICTION ON USE~~X~~
4. RESTRICTION ON USE~~X~~

  
Judith Langford Riddel

If space is insufficient use additional annexure sheet

Surveyor's Reference: 14075-27



10407160

NEW SOUTH WALES

Prior Title (Crown Grant)

Vol. 2049 Fol. 180

**CERTIFICATE OF TITLE**

PROPERTY ACT, 1900, as amended.



Vol. 10407 Fol. 160  
Edition issued 28-9-1966  
DM. K427568

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.

Witness

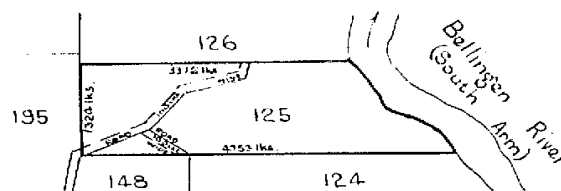
*S Vandine*

**CANCELLED**  
*Jawatson*  
Registrar General.



PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO



Area 50 acres This area does not include the area of the road shown in the plan hereon.

Scale: 20 chains to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 125 in the Shire of Bellingen, Parish of South Bellingen and County of Raleigh, excepting thereout the roads shown in the plan hereon and the minerals reserved by the Crown Grant.

*Jawatson*  
Registrar General.

FIRST SCHEDULE (continued overleaf).

~~ARCHIBALD STEWART CROMBIE of Urunga, Farmer.~~

*Jawatson*  
Registrar General.

SECOND SCHEDULE (continued overleaf).

GRM 1. Reservations and conditions, if any, contained in the Crown Grant above referred to

*Jawatson*  
Registrar General.



FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar-General
	NATURE	NUMBER	DATE		
<i>Roy Gordon Riddel of Coff. Hark Harkens, Dentist and Joyce Louise Riddel his wife</i>	<i>1st</i>	<i>4526523</i>	<i>20-5-1973</i>	<i>2-10-1973</i>	<i>Jackson</i>
<i>Roy Gordon Riddel of Kororo, Dentist</i>	<i>Notice of Death</i>	<i>N470852</i>	<i>5-9-1973</i>	<i>2-10-1973</i>	<i>Jackson</i>
<i>Roy Gordon Riddel of Kororo, Dentist and Judith Langford Riddel his wife, as joint tenants</i>	<i>Transfer</i>	<i>Q134849</i>	<i>-----</i>	<i>29-3-1977</i>	<i>Jackson</i>
<b>CANCELLED</b>					
<b>SEE AUTO FOLIO</b>					

SECOND SCHEDULE (continued)

NATURE	INSTRUMENT		PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION	
	NUMBER	DATE					
<i>Mortgage</i>	<i>4526523</i>	<i>20-5-1973</i>	<i>Unsubstantiated transfer of property, transfer</i>	<i>2-10-1973</i>	<i>Jackson</i>	<i>Discharged</i>	<i>11302417</i>

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

*1136 R*  
*11470952 R*  
*0134849 R*



N 470852

NE [REDACTED] LES

# NOTICE OF DEATH

SECTION 101, REAL PROPERTY ACT, 1900

14 SEP 1973 10AM

OFFICE USE ONLY

B	
\$ 12	

This application should be marked by the Commissioner of Stamp Duties before lodgment at the Land Titles Office.

Typewriting and handwriting should be clear, legible and in permanent black non-copying ink. No alterations should be made by erasure; the words rejected must be ruled through and verified by signature or initials in the margin.

(a) Full name, address and occupation of each surviving registered proprietor.

(b) Name of each deceased registered proprietor.

(c) In respect of a mortgage, encumbrance or lease, show only the registered number.

(a)

ROY GORDON RIDDEL of "Doondi", Kororo, New South Wales, Dentist

the surviving joint tenant

in consequence of the death of (b) JOYCE EIRENE RIDDEL

hereby applies to be registered as proprietor of the estate or interest comprised in the instrument of title mentioned in the following schedule (c)

Crown Grant or Certificate of Title				Mortgage, Encumbrance or Lease		
Volume	Folio	Volume	Folio	Registered Number	Registered Number	Registered Number
10407	160					

I solemnly and sincerely declare that the said (b) JOYCE EIRENE RIDDEL

died at Coffs Harbour in the State of New South Wales

on 22nd August 1971, that particulars of such death are registered in the said State, and that the said

deceased is identical with (b) Joyce Eirene Riddel

one of the registered proprietors shown on the above instrument.

(d) If more than one deceased registered proprietor, repeat information re death &c.

(d)

If made outside N.S.W. strike out Oaths Act, 1900 and insert reference to local Act.  
(f) Any person falsely or negligently certifying is liable to the penalties provided by section 117 of the Real Property Act, 1900.

AND I make this solemn declaration conscientiously, believing the same to be true and by virtue of the Oaths Act, 1900<sup>(e)</sup>, and I certify this application to be correct for the purposes of the Real Property Act, 1900<sup>(f)</sup>.

Made and subscribed

at Armidale  
the 5<sup>th</sup> September 1973.

in the presence of—

J. K. Riddel  
Signature of witness

JOHN KNOR RIDDEL

Name of witness (BLOCK LETTERS)

SOLICITOR

ARMIDALE

Qualification of witness

[Signature]  
Applicant (g)

(g) This application is a statutory declaration and must be made before a prescribed functionary. Attention is drawn to the penalties provided by law for any false statement herein.

N 470852

DEPARTMENTAL USE ONLY

NOTICE OF DEATH

TO BE COMPLETED BY LODGING PARTY

Lodged by

Address:

Thomas Kenyon & Son

61-9253

Phone No.:

CONVEYANCING AG

49 MARKET ST. SYDNEY

Documents lodged herewith

1. CTD
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Checked

Passed

Signed

REGISTERED

2-10-1973

*Janet...*  
Registrar General



Received Documents

Receiving Clerk

AUTHORITY FOR USE OF INSTRUMENT OF TITLE<sup>(b)</sup>

Authority is hereby given for the use of \_\_\_\_\_

(insert reference to certificates, grants or dealings) lodged

in connection with \_\_\_\_\_ for the

(insert number of plan or dealing)

registration of this dealing and for delivery to \_\_\_\_\_

(BLOCK LETTERS)

Signature

Name (BLOCK LETTERS)

(b) Unless the instrument of title has been lodged by the person lodging the dealing, or its use has been authorised previously, the authority must be furnished by the person otherwise entitled to delivery of the certificate of title, grant &c.

ST 4710-2

K 1229

*Adv. Stampson.*  
*W/D*  
*10-9-73.*  
*Lodge at L.T.O.*

*PAR*





NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 4:43PM

FOLIO: 125/755557

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 10407 FOL 160

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
3/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
24/1/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/4/1991		AMENDMENT: TITLE DIAGRAM	
21/11/2003	AA181546	MORTGAGE	EDITION 1
20/12/2006	AC821132	DEPARTMENTAL DEALING	
26/5/2008	AD975108	DISCHARGE OF MORTGAGE	
26/5/2008	AD975110	NOTICE OF DEATH	EDITION 2
18/7/2012	AH120656	DEPARTMENTAL DEALING	
21/8/2017	DP1232259	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
4/8/2020	AQ294846	DEPARTMENTAL DEALING	

\*\*\* END OF SEARCH \*\*\*



LAND  
REGISTRY  
SERVICES

# Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 4:43PM

FOLIO: 2/1232259

First Title(s): VOL 2049 FOL 180

Prior Title(s): 125/755557

Recorded	Number	Type of Instrument	C.T. Issue
21/8/2017	DP1232259	DEPOSITED PLAN	FOLIO CREATED EDITION 1
5/12/2017	AM925221	APPLICATION FOR RECORDING OF ACTION AFFECTING CROWN HOLDING	
4/8/2020	AQ294846	DEPARTMENTAL DEALING	
15/10/2020	AQ473258	TRANSFER	EDITION 2

\*\*\* END OF SEARCH \*\*\*

LS023209\_EP - 201 South Arm Road

PRINTED ON 23/8/2021

InfoTrack an approved NSW Information Broker 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.

System Document Identification

Land Registry Document Identification

Form Number:01T-e  
Template Number:t\_nsw18  
ELN Document ID:552829488  
ELN NOS ID: 552829489

TRANSFER  
New South Wales  
Real Property Act 1900

AQ473258

Stamp Duty: 9912950-001

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

LODGED BY:

Responsible Subscriber: GENERAL LEGAL PTY LTD ABN 19637484032  
Address: PO BOX 75  
Urunga 2455  
Telephone:  
ELNO Subscriber Number: 1373481  
Customer Account Number: 505733  
Document Collection Box: 1W  
Client Reference: KF Riddel

LAND TITLE REFERENCE

2/1232259

TRANSFEROR

JUDITH LANGFORD RIDDEL

TRANSFeree

ROBERT BRUCE RIDDEL

Tenancy: Sole Proprietor

CONSIDERATION

The transferor acknowledges receipt of the consideration of \$450,000.00

ESTATE TRANSFERRED

FEE SIMPLE

The Transferor transfers to the Transferee the Estate specified in this Instrument and acknowledges receipt of any Consideration shown.

SIGNING FOR TRANSFEROR

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferor.

Party Represented by Subscriber:

JUDITH LANGFORD RIDDEL

Signed By: Karen Lisa Fawcett  
ELNO Signer Number: 3898349

Signer Capacity:Practitioner Certifier  
Digital Signing Certificate Number:

Signed for  
Subscriber: GENERAL LEGAL PTY LTD ABN 19637484032  
GENERAL LEGAL PTY LTD

Subscriber Capacity:Representative Subscriber  
ELNO Subscriber Number: 1373481  
Date: 15/10/2020  
Customer Account Number:505664



## **SIGNING FOR TRANSFEREE**

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferee.

### **Party Represented by Subscriber:**

ROBERT BRUCE RIDDEL

**Signed By:** Karen Lisa Fawcett  
**ELNO Signer Number:** 3898349

**Signer Capacity:** Practitioner Certifier  
**Digital Signing Certificate Number:**

**Signed for**  
**Subscriber:** GENERAL LEGAL PTY LTD ABN 19637484032  
GENERAL LEGAL PTY LTD

**Subscriber Capacity:** Representative Subscriber

**ELNO Subscriber Number:** 1373481

**Customer Account Number:** 505664

**Date:** 15/10/2020



FOLIO: 2/1232259

SEARCH DATE	TIME	EDITION NO	DATE
23/8/2021	4:42 PM	2	15/10/2020

LAND

LOT 2 IN DEPOSITED PLAN 1232259  
AT URUNGA  
LOCAL GOVERNMENT AREA BELLINGEN  
PARISH OF SOUTH BELLINGEN COUNTY OF RALEIGH  
TITLE DIAGRAM DP1232259

FIRST SCHEDULE

ROBERT BRUCE RIDDEL

(T AQ473258)

SECOND SCHEDULE (2 NOTIFICATIONS)

- 1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
- 2 LAND EXCLUDES THE ROAD(S) SHOWN IN THE TITLE DIAGRAM

NOTATIONS

NOTE: THIS FOLIO MAY BE ASSOCIATED WITH A CROWN TENURE WHICH IS SUBJECT TO PAYMENT OF AN ANNUAL RENT. FOR FURTHER DETAILS CONTACT CROWN LANDS.

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

10407 Fol. 161  
(Page 1) Vol.

NEW SOUTH WALES

Prior Title (Crown Grant)

Vol. 2137 Fol. 10



**CERTIFICATE OF TITLE**  
**PROPERTY ACT, 1900, as amended.**



10407161

Vol. 10407 Fol. 161

Edition issued 28-9-1966

DM. K427568

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.

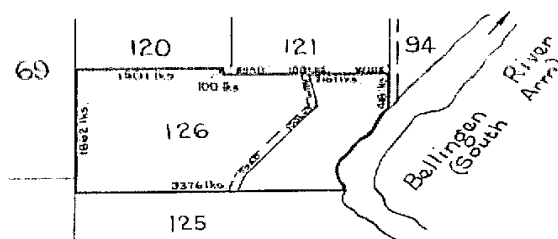
Witness

*S. Vandine*

**CANCELLED**  
Registrar General.



PLAN SHOWING LOCATION OF LAND



Area: 64 acres. This area does not include the area of the road shown in the plan hereon.

Scale: 20 chains to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 126 in the Shire of Bellingen, Parish of South Bellingen and County of Raleigh, excepting thereout the road shown in the plan hereon and the minerals reserved by the Crown Grant.

*J. Watson*  
Registrar General.

FIRST SCHEDULE (continued overleaf).

~~ARCHIBALD STEWART CROMBIE~~ Urunga, Farmer.

*J. Watson*  
Registrar General.

SECOND SCHEDULE (continued overleaf).

GRM 1. Reservations and conditions, if any, contained in the Crown Grant above referred to

*J. Watson*  
Registrar General.



FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

INSTRUMENT  
NATURE NUMBER DATE ENTERED Signature of Registrar-General

*Roy Gordon Riddel of Coff's Harbour, Dentist and Judith Langford Riddel his wife, as joint tenants*  
*Roy Gordon Riddel of Coff's Harbour, Dentist*  
 Roy Gordon Riddel of Kororo, Dentist and Judith Langford Riddel his wife, as joint tenants

*Transfer* 1526523 28-1-1973 13-11-1973  
*Notice of Death* 1526543 4-1-1973 13-11-1973  
*Transfer* Q134849 ----- 29-3-1977

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION	
NATURE	NUMBER	DATE					
<i>Mr. Inge</i>	<i>1526523</i>	<i>28-1-1973</i>	<i>Discharged</i>		<i>Discharged</i>	<i>1802417</i>	

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

*1526523*  
*1526543*  
*Q134849*



LAND  
REGISTRY  
SERVICES

# Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 6:26PM

FOLIO: 126/755557

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 10407 FOL 161

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
3/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
24/1/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/4/1991		AMENDMENT: TITLE DIAGRAM	
21/11/2003	AA181546	MORTGAGE	EDITION 1
20/12/2006	AC821132	DEPARTMENTAL DEALING	
26/5/2008	AD975109	DISCHARGE OF MORTGAGE	
26/5/2008	AD975110	NOTICE OF DEATH	EDITION 2
18/7/2012	AH120656	DEPARTMENTAL DEALING	
21/8/2017	DP1232259	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
4/8/2020	AQ294846	DEPARTMENTAL DEALING	

\*\*\* END OF SEARCH \*\*\*



LAND  
REGISTRY  
SERVICES

# Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 6:26PM

FOLIO: 3/1232259

First Title(s): VOL 2137 FOL 10

Prior Title(s): 126/755557

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
21/8/2017	DP1232259	DEPOSITED PLAN	FOLIO CREATED EDITION 1
5/12/2017	AM925221	APPLICATION FOR RECORDING OF ACTION AFFECTING CROWN HOLDING	
4/6/2018	DP1242996	DEPOSITED PLAN	FOLIO CANCELLED
4/8/2020	AQ294846	DEPARTMENTAL DEALING	

\*\*\* END OF SEARCH \*\*\*

LS023209\_EP - 201 South Arm Road

PRINTED ON 23/8/2021

InfoTrack an approved NSW Information Broker 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.





10250177

NEW SOUTH WALES

Prior Title (Crown Grant)  
Vol. 1345 Fol. 221.

**CERTIFICATE OF TITLE**  
**PROPERTY ACT, 1900, as amended.**



LB.

Vol. **10250** Fol. **177**  
**CANCELLED**  
Edition issued, 1.3.1988.  
K143573.

**SEE AUTO FOLIO**

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.

Witness

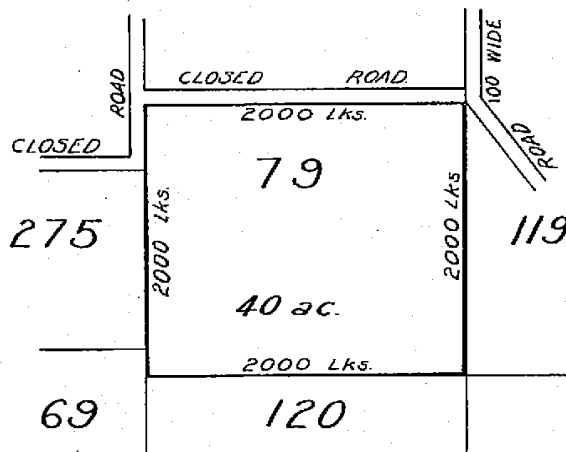
*M. J. Macpherson*

*J. Watson*  
Registrar General.



PLAN SHOWING LOCATION OF LAND

**SEE AUTO FOLIO**



K143573-211.

Scale: 10 Chains to one inch.

**ESTATE AND LAND REFERRED TO**

Estate in Fee Simple in Portion 79 in the Shire of Bellingen Parish of South Bellingen and County of Raleigh. Excepting thereout the minerals reserved by the Crown Grant.

*J. Watson*

Registrar General.

**FIRST SCHEDULE (continued overleaf)**

~~CLIFFORD EVING PARTLETT, of Urunga, Farmer.~~

*J. Watson*

Registrar General.

**SECOND SCHEDULE (continued overleaf)**

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

*J. Watson*

Registrar General.

## FIRST SCHEDULE (continued)

## REGISTERED PROPRIETOR

## INSTRUMENT

NATURE

NUMBER

DATE

ENTERED

Signature of  
Registrar-General

*Heenan George Young of Raleigh Carrer and Ray Duran Young of Raleigh Carrer as tenants in common in equal shares*

*Archibald Stewart Cumber of George Town*

*Ray Gordon Riddell of Coff's Harbour, Dentist and Joyce C. Riddell his wife as joint tenants*

*Reg Gordon Riddell of Coff's Harbour, Dentist*

Transfer

K143574

27-9-1965

9-3-1966

*Janetson*

Transfer

K43647

29-8-1966

2-9-1966

*Janetson*

Transfer

L526523

28-5-1969

2-10-1969

*Janetson*

Notice of Death

N190643

19-1-1973

13-11-1973

*Janetson*

SEE NOTE FOLIO

## SECOND SCHEDULE (continued)

NATURE

INSTRUMENT

NUMBER

DATE

PARTICULARS

ENTERED

Signature of  
Registrar-General

CANCELLATION

*Matyng*

*L526524*

*28-5-1969*

*Archibald Stewart Cumber of George Town*

*2-10-1969*

*Janetson*

*discharged*

*N1802417*

*Janetson*

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

K143574 R

L526523 R

-524 N

M 202

N 190643



10250179

NEW SOUTH WALES

**CERTIFICATE OF TITLE**  
**PROPERTY ACT, 1900, as amended.**

Prior Title (Crown Grant)  
Vol. 1345 Fol. 223.



LB.

Vol. **10250** Fol. **179**

Edition Issued: 1.3.16

**CANCELLED**

K143573.

**SEE AUTO FOLIO**

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness

*M. J. Hoopell*

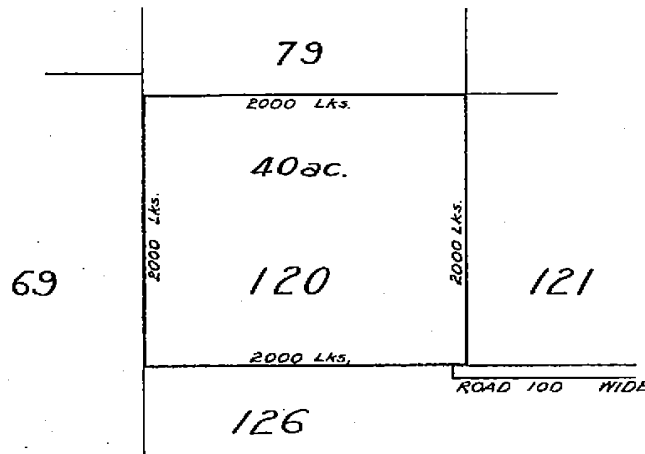
**CANCELLED**  
*Jawatson*

Registrar General.



**PLAN SHOWING LOCATION OF LAND**

**SEE AUTO FOLIO**



Scale: 10 Chains to one inch.

**ESTATE AND LAND REFERRED TO**

Estate in Fee Simple in Portion 120 in the Shire of Bellingen Parish of South Bellingen and County of Raleigh. Excepting thereout the minerals reserved by the Crown Grant.

*Jawatson*

Registrar General.

**FIRST SCHEDULE (continued overleaf)**

~~CLIFFORD EVINS BARTLETT, of Urunga, Farmer.~~

*Jawatson*

Registrar General.

**SECOND SCHEDULE (continued overleaf)**

GRM

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

*Jawatson*

Registrar General.





No. **K 436117**



(Trusts must not be disclosed in the transfer.)

Typing or handwriting in this instrument should not extend into any margin. Handwriting should be clear and legible and in permanent black non-copying ink.

a If a less estate, state out "in fee simple" and interline the required alteration.

b State in full the name of the person who furnished the consideration money.

c Show in BLOCK LETTERS the full name, postal address and description of the persons taking.

d If more than one person is taking state whether they hold as joint tenants or tenants in common.

e The description may refer to the defined residue of the land in a certificate or grant (e.g., "and being residue after Transfer No. ... of Parish Maps issued by the Dept. of Lands or shown in plans filed in the Office of the Registrar General (e.g., "and being lot sec. D.P. "). Unless authorised by Reg. 53 of the Conveyancing Act Regulations, 1961, a plan may not be annexed to or endorsed on this transfer form.

f A very short note will suffice.

g Execution in New South Wales may be proved if this instrument is signed or acknowledged before the Registrar General, or Deputy Registrar General, or a Notary Public, a J.P., or Commissioner for Affidavits, to whom the Transferor is known, otherwise the attesting witness should appear before one of the above functionaries who having questioned the witness should sign the certificate on the back of this form.

As to instruments executed elsewhere, see Section 107 of the Real Property Act, 1900, Section 168 of the Conveyancing Act, 1919, and Section 52A of the Evidence Act, 1898.

h Repeat attestation if necessary.

If the Transferor or Transferee signs by a mark, the attestation must state "that the instrument was read over and explained to him, and that he appeared fully to understand the same."

as tenants in common in equal shares (herein called transferors) being registered as the proprietors of an estate in fee simple in the land hereinafter described, subject, however, to such encumbrances, liens and interests as are notified hereunder, in consideration of Two thousand dollars (\$2000- ) (the receipt whereof is hereby acknowledged) paid to me by

**ARCHIBALD STEWART CROMBIE** of Urunga, Farmer

do hereby transfer to

**ARCHIBALD STEWART CROMBIE** of Bellingen Road, Urunga, Farmer

(herein called transferee)<sup>d</sup>

ALL such <sup>OUR</sup> Estate and Interest in ALL THE land mentioned in the schedule following:—

County	Parish	Reference to Title			Description of Land (if part only) <sup>e</sup>
		Whole or Part	Vol.	Fol.	
RALEIGH	SOUTH BELLINGEN	WHOLE	4795	67	✓
		WHOLE	10250	177	✓
		WHOLE	10250	178	✓
		WHOLE	10250	179	✓
		WHOLE	8172	234	✓

ENCUMBRANCES, &c., REFERRED TO<sup>f</sup>  
 Reservation of Minerals etc.

Signed at Bellingen the Twenty ninth day of August, 1966.

Signed in my presence by the transferors

WHO IS PERSONALLY KNOWN TO ME

*John Tachet*  
 Solicitor  
 Bellingen

Signed

Signed in my presence by the transferee

WHO IS PERSONALLY KNOWN TO ME

*John Tachet*

*V.G. Young*  
*R.V. Young*  
 Transferors

† Accepted, and I hereby certify this Transfer to be correct for the purposes of the Real Property Act.

*A. Crombie*  
 Transferee(s)

\* If signed by virtue of any power of attorney, the original power must be registered in the Miscellaneous Register, and produced with each dealing, and the memorandum of non-revocation on back of form signed by the attorney before a witness.

† N.B.—Section 117 requires that the above Certificate be signed by each Transferee or his Solicitor or Conveyancer, and renders any person falsely or negligently certifying liable to a penalty; also to damages recoverable by parties injured. Acceptance by the Solicitor or Conveyancer (who must sign his own name, and not that of his firm) is permitted only when the signature of the Transferee cannot be obtained without difficulty, and when the instrument does not impose a liability on the party taking under it. When the instrument contains some special covenant by the Transferee or is subject to a mortgage, encumbrance or lease, the Transferee must accept personally.

No alterations should be made by erasure. The words rejected should be scored through with the pen, and those substituted written over them, the alteration being verified by signature or initials in the margin, or noticed in the attestation.

THIS SPACE TO BE LEFT FREE FROM NOTATION

NOT TO BE ALTERED BY ERASURE—See Foot Note

No. **K 436117**

**PARTIAL DISCHARGE OF MORTGAGE<sup>1</sup>**  
 (N.B.—Before execution read marginal note)

Lodged by **PETER S. UTZ & COMPANY**  
 SOLICITORS  
 Address: **369 GEORGE STREET**  
 SYDNEY  
 Phone No.:

I, \_\_\_\_\_ mortgagee under Mortgage No. \_\_\_\_\_  
 release and discharge the land comprised in the within transfer from such mortgage and all claims thereunder but without prejudice to my rights and remedies as regards the balance of the land comprised in such mortgage.

i This discharge is appropriate to a transfer of part of the land in the Mortgage. The mortgagee should execute a formal discharge where the land transferred is the whole of or the residue of the land in the Certificate of Title or Crown Grant or is the whole of the land in the mortgage.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_

Signed in my presence by \_\_\_\_\_

who is personally known to me.

Mortgagee.

**MEMORANDUM AS TO NON-REVOCATION OF POWER OF ATTORNEY**

(To be signed at the time of executing the within instrument)

Memorandum whereby the undersigned states that he has no notice of the revocation of the Power of Attorney registered No. \_\_\_\_\_ Miscellaneous Register under the authority of which he has just executed the within transfer.<sup>2</sup>



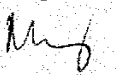
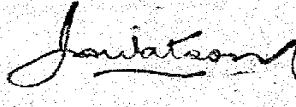

Signed at \_\_\_\_\_ the \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_  
 Signed in the presence of— \_\_\_\_\_

j Strike out unnecessary words. Add any other matter necessary to show that the power is effective.

**CERTIFICATE OF J.P., &c., TAKING DECLARATION OF ATTESTING WITNESS<sup>3</sup>**

Appeared before me at \_\_\_\_\_, the \_\_\_\_\_ day of \_\_\_\_\_, one thousand \_\_\_\_\_  
 nine hundred and \_\_\_\_\_ the attesting witness to this instrument  
 and declared that he personally knew \_\_\_\_\_ the person  
 signing the same, and whose signature thereto he has attested; and that the name purporting to be such  
 signature of the said \_\_\_\_\_ is \_\_\_\_\_ own handwriting, and  
 that he was of sound mind and freely and voluntarily signed the same

k To be signed by Registrar General, Deputy Registrar General, a Notary Public, J.P., Commissioner for Affidavits, or other functionary before whom the attesting witness appears. Not required if the instrument itself be signed or acknowledged before one of these parties.

INDEXED	MEMORANDUM OF TRANSFER	DOCUMENTS LODGED HEREWITH To be filled in by person lodging dealing
Checked by 	Particulars entered in Register Book,  9-5-1966	1. <u>547</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____
Passed (in S.D.B.) by _____	at <u>4PM</u>	Received Docs.  Nos.  Receiving Clerk 
Signed by 	 Registrar General 	

**PROGRESS RECORD**

	Initials	Date
Sent to Survey Branch		
Received from Records		
Draft written		
Draft examined		
Diagram prepared		
Diagram examined		
Draft forwarded		
Supt. of Engrossers		
Cancellation Clerk		
Vol. _____	Fol. _____	

LEAVE THESE SPACES FOR DEPARTMENTAL USE





LAND  
REGISTRY  
SERVICES

# Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 6:43PM

FOLIO: 79/755557

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 10250 FOL 177

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
3/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
2/2/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/4/1991		AMENDMENT: TITLE DIAGRAM	
1/7/2009	AE799181	TRANSMISSION APPLICATION	EDITION 1
4/6/2018	DP1242996	DEPOSITED PLAN	FOLIO CANCELLED

\*\*\* END OF SEARCH \*\*\*

LS023209\_EP - 201 South Arm Road

PRINTED ON 23/8/2021

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LAND  
REGISTRY  
SERVICES

# Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 6:43PM

FOLIO: 120/755557

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 10250 FOL 179

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
3/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
2/2/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/4/1991		AMENDMENT: TITLE DIAGRAM	
1/7/2009	AE799181	TRANSMISSION APPLICATION	EDITION 1
4/6/2018	DP1242996	DEPOSITED PLAN	FOLIO CANCELLED

\*\*\* END OF SEARCH \*\*\*

LS023209\_EP - 201 South Arm Road

PRINTED ON 23/8/2021

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Licence: 05-11-653  
Licensee: Softdocs  
Fishburn Watson O'Brien

# TRANSMISSION APPLICATION



AE799181F

**PRIVACY NOTE:** Section 31B of the Real Property Act 1900 (RP Act) authorises the use of this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

## STAMP DUTY

Office of State Revenue use only

10

Office of State Revenue	
NSW Treasury	
Client No: 1719069	144
Duty: 50	Trans No: 5454421
Asst details:	

## (A) TORRENS TITLE

Identifier 2/804995, 79/755557, 69/755557, 120/755557, 449/755557, 195/755557, 274/755557, 275/755557; Volume 13508 Folio 243

## (B) REGISTERED DEALING

Number	Torrens Title

## (C) LODGED BY

Document Collection Box	Name, Address or DX, Telephone, and LLPN if any	CODE
BOX 30P	L J KANE & CO LLPN 123818G Reference (optional): FIVE - RIDDEL	TA

## (D) DECEASED REGISTERED PROPRIETOR

ROY GORDON RIDDEL

## (E) APPLICANT

JUDITH LANGFORD RIDDEL

(F) I, the applicant, being entitled as beneficiary of the will of the deceased registered proprietor (who died on 30 March 2008) pursuant to probate No. 103583/09 granted on 5 March 2009 to WILLIAM HERD

( the original of which is lodged herewith) apply to be registered as proprietor of the estate or interest of the deceased registered proprietor in the abovementioned land.

DATE 16 / 6 / 2009

## (G)

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: Stephen Campbell  
Capacity: Solicitor for the applicant

## (H) CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE

I, WILLIAM HERD

executor of the will

Signature of witness:

Name of witness:

Address of witness:

1. ife  
IAN HOBBS

13-15 PARK AVE COFFS HARBOR

of the deceased registered proprietor, consent to this application.

Signature of executor

Office use only -

Evidence sighted/sighted and returned:

All handwriting must be in block capitals.

PHGR







11147178

NEW SOUTH WALES

**CERTIFICATE OF TITLE**

PROPERTY ACT, 1900, as amended.



Vol. **11147** Fol. **178**  
Edition issued 25-9-1969  
L547686

Prior Title (Crown Grant)  
Volume 1906 Folio 151

AS

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.

Witness

*B. Hinchey*

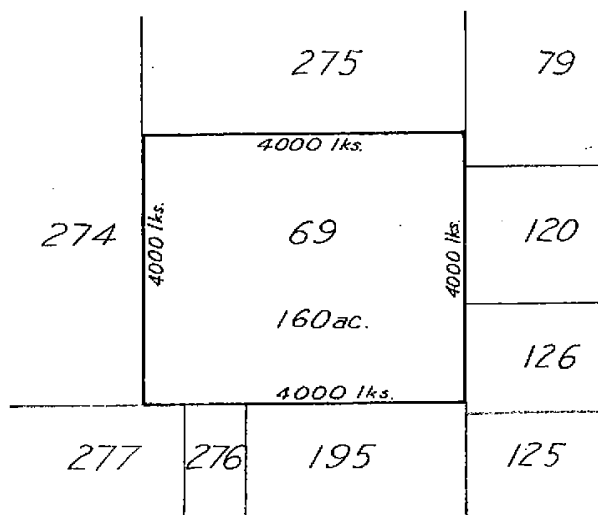
**CANCELLED**

Registrar General.



PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO



L547686 *AS*

Scale: 20 chains to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Portion 69 in the Shire of Bellingen Parish of South Bellingen and County of Raleigh. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

FIRST SCHEDULE

~~ARCHIBALD STEWART~~  ~~Farmer of Urunga, Farmer.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

*J. J. J. J.*  
Registrar General

## FIRST SCHEDULE (continued)

## REGISTERED PROPRIETOR

## INSTRUMENT

NATURE

NUMBER

DATE

ENTERED

Signature of  
Registrar-General

Roy Gordon Riddell of Coff's Harbour, Dentist and Joyce Eirene Riddell wife as Joint Tenants

Transfer

L 526523

20-5-1969

2-10-1969

*Janet**Roy Gordon Riddell of Coff's Harbour, Dentist.*

Notice of Death

N1906023

19-1-1973

13-11-1973

*Janet*

CANCELLED

SEE AUTO FOLIO

## SECOND SCHEDULE (continued)

## INSTRUMENT

NATURE

NUMBER

DATE

PARTICULARS

ENTERED

Signature of  
Registrar-General

CANCELLATION

Mortgage

L 526524

20-5-1969

to Archibald Stewart Crombie of Uruanga, Farmer

2-10-1969

*Janet**Discharged*

M1902417

*Janet*

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

# CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900



13508243

NEW SOUTH WALES

Prior Title (Crown Grant)

Vol. 8172 Fol. 234



Vol. 13508 Fol. 243  
EDITION ISSUED  
20 12 1977

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.

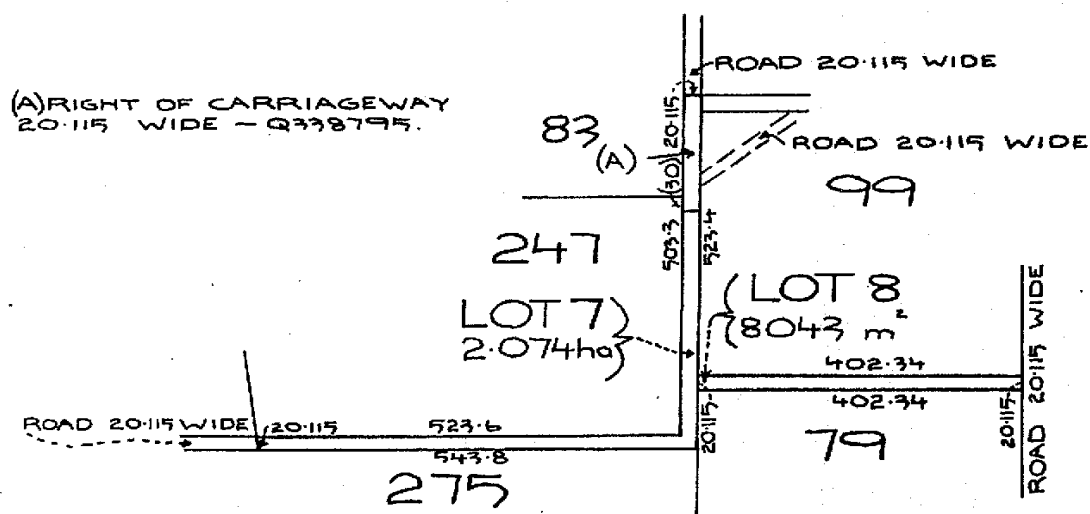
*[Signature]*

Registrar General.



## PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



CANCELLED

SEE AUTO FOLIO

REDUCTION RATIO 1:8000

## ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lots 7 and 8 in Deposited Plan 252796 in the Shire of Bellingen Parish of South Bellingen and County of Raleigh. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

## FIRST SCHEDULE

ROY GORDON RIDDEL of Coffs Harbour, Dentist.

## SECOND SCHEDULE

- GRM 1. Reservations and conditions, if any, contained in the Crown Grant above referred to.  
RC 2. Q338795 Right of Carriageway affecting the part of the land above described shown so burdened in the plan hereon.

FIRST SCHEDULE (continued)

[illegible]

## SECOND SCHEDULE (continued)

[illegible]

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





NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 7:49PM

FOLIO: AUTO CONSOL 13508-243

-----

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
28/11/1991		CONSOL HISTORY RECORD CREATED FOR AUTO CONSOL 13508-243	

PARCELS IN CONSOL ARE:  
7-8/252796.

1/7/2009	AE799181	TRANSMISSION APPLICATION	EDITION 1
13/6/2012	DP1176067	DEPOSITED PLAN	
25/9/2012	AH148519	REQUEST	
1/11/2012	AH338311	DEPARTMENTAL DEALING	
9/1/2013	AH473819	PARCELS EXCISED. CONSOL BROKEN UP	

\*\*\* END OF SEARCH \*\*\*



LAND  
REGISTRY  
SERVICES

# Historical Title



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

23/8/2021 7:15PM

FOLIO: 102/1237204

First Title(s): VOL 1906 FOL 151 VOL 3099 FOL 74  
VOL 3099 FOL 76 VOL 8172 FOL 234

Prior Title(s): 1-2/1176067 4/1176067  
1/1232259

Recorded	Number	Type of Instrument	C.T. Issue
27/11/2017	DP1237204	DEPOSITED PLAN	FOLIO CREATED EDITION 1
4/6/2018	DP1242996	DEPOSITED PLAN	FOLIO CANCELLED

\*\*\* END OF SEARCH \*\*\*

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PRINTED ON 23/8/2021

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SEARCH DATE

23/8/2021 4:43PM

FOLIO: 200/1242996

First Title(s): VOL 1906 FOL 151 VOL 2137 FOL 10  
VOL 3099 FOL 74 VOL 3099 FOL 76  
VOL 8172 FOL 234 VOL 1345 FOL 221  
VOL 1345 FOL 223

Prior Title(s): 8/252796 79/755557  
120/755557 3/1232259  
102/1237204

Recorded	Number	Type of Instrument	C.T. Issue
4/6/2018	DP1242996	DEPOSITED PLAN	FOLIO CREATED EDITION 1
17/7/2018	AN510010	APPLICATION FOR RECORDING OF ACTION AFFECTING CROWN HOLDING	
4/8/2020	AQ294846	DEPARTMENTAL DEALING	
15/10/2020	AQ473239	TRANSFER	EDITION 2

\*\*\* END OF SEARCH \*\*\*



FOLIO: 200/1242996

SEARCH DATE	TIME	EDITION NO	DATE
23/8/2021	4:42 PM	2	15/10/2020

LAND

LOT 200 IN DEPOSITED PLAN 1242996  
AT URUNGA  
LOCAL GOVERNMENT AREA BELLINGEN  
PARISH OF SOUTH BELLINGEN COUNTY OF RALEIGH  
TITLE DIAGRAM DP1242996

FIRST SCHEDULE

TOOTHACHES PTY LTD

(T AQ473239)

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
- 2 AI586912 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 3 DP1242996 RESTRICTION(S) ON THE USE OF LAND REFERRED TO AND NUMBERED (3) IN THE S.88B INSTRUMENT

NOTATIONS

NOTE: THIS FOLIO MAY BE ASSOCIATED WITH A CROWN TENURE WHICH IS SUBJECT TO PAYMENT OF AN ANNUAL RENT. FOR FURTHER DETAILS CONTACT CROWN LANDS.

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*



# APPENDIX C

---

Earth Water Consulting Pty Limited  
2-16 Lourdes Avenue  
Urunga  
NSW 2455



NATA Accredited  
Accreditation Number 1261  
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing  
NATA is a signatory to the ILAC Mutual Recognition  
Arrangement for the mutual recognition of the  
equivalence of testing, medical testing, calibration,  
inspection, proficiency testing scheme providers and  
reference materials producers reports and certificates.

Attention: Strider Duerinckx

Report 817483-S  
Project name URUNGEN  
Project ID 2021-83  
Received Date Aug 16, 2021

Client Sample ID			S-1 Soil S21-Au29715 Aug 12, 2021	S-2 Soil S21-Au29716 Aug 12, 2021	S-3 Soil S21-Au29717 Aug 12, 2021	ASS1_0.3-0.5 Soil S21-Au29718 Aug 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchloroendate (surr.)	1	%	98	114	133	-
Tetrachloro-m-xylene (surr.)	1	%	84	114	107	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-

Client Sample ID			S-1 Soil S21-Au29715 Aug 12, 2021	S-2 Soil S21-Au29716 Aug 12, 2021	S-3 Soil S21-Au29717 Aug 12, 2021	ASS1_0.3-0.5 Soil S21-Au29718 Aug 12, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	< 2	-
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Omethoate	2	mg/kg	< 2	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	109	119	147	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	5.7	4.6	2.7	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	14	20	16	-
Copper	5	mg/kg	19	16	9.5	-
Lead	5	mg/kg	9.2	11	9.4	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	< 5	6.0	< 5	-
Zinc	5	mg/kg	27	45	20	-
% Moisture	1	%	38	50	33	-
<b>Acid Sulfate Soils Field pH Test</b>						
pH-F (Field pH test)*	0.1	pH Units	-	-	-	6.0
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	-	-	-	4.0
Reaction Ratings**S05	-	comment	-	-	-	2.0

<b>Client Sample ID</b>			<b>ASS1_0.6-0.8</b>	<b>ASS1_1.0-1.2</b>	<b>ASS2_0.3-0.5</b>	<b>ASS2_0.6-0.8</b>
<b>Sample Matrix</b>			<b>Soil</b>	<b>Soil</b>	<b>Soil</b>	<b>Soil</b>
<b>Eurofins Sample No.</b>			<b>S21-Au29719</b>	<b>S21-Au29720</b>	<b>S21-Au29721</b>	<b>S21-Au29722</b>
<b>Date Sampled</b>			<b>Aug 12, 2021</b>	<b>Aug 12, 2021</b>	<b>Aug 12, 2021</b>	<b>Aug 12, 2021</b>
Test/Reference	LOR	Unit				
<b>Acid Sulfate Soils Field pH Test</b>						
pH-F (Field pH test)*	0.1	pH Units	5.4	5.2	6.1	6.1
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	4.4	4.2	2.8	3.9
Reaction Ratings* <sup>S05</sup>	-	comment	2.0	2.0	2.0	2.0

<b>Client Sample ID</b>			<b>ASS2_1.0-1.2</b>	<b>ASS3_0.4-0.6</b>	<b>ASS3_0.6-0.8</b>	<b>ASS3_1.0-1.2</b>
<b>Sample Matrix</b>			<b>Soil</b>	<b>Soil</b>	<b>Soil</b>	<b>Soil</b>
<b>Eurofins Sample No.</b>			<b>S21-Au29723</b>	<b>S21-Au29724</b>	<b>S21-Au29725</b>	<b>S21-Au29726</b>
<b>Date Sampled</b>			<b>Aug 12, 2021</b>	<b>Aug 12, 2021</b>	<b>Aug 12, 2021</b>	<b>Aug 12, 2021</b>
Test/Reference	LOR	Unit				
<b>Acid Sulfate Soils Field pH Test</b>						
pH-F (Field pH test)*	0.1	pH Units	5.8	5.7	5.4	5.2
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	4.7	3.9	4.2	4.0
Reaction Ratings* <sup>S05</sup>	-	comment	2.0	2.0	2.0	2.0



## Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Aug 19, 2021	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Aug 19, 2021	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Aug 19, 2021	180 Days
Acid Sulfate Soils Field pH Test - Method: LTM-GEN-7060 Determination of field pH (pHF) and field pH peroxide (pHFOX) tests	Sydney	Aug 19, 2021	7 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Aug 17, 2021	14 Days

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NATA # 1261 Site # 18217

**Brisbane**  
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**Perth**  
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**Company Name:** Earth Water Consulting Pty Limited  
**Address:** 2-16 Lourdes Avenue  
Urunga  
NSW 2455  
**Project Name:** URUNGEN  
**Project ID:** 2021-83

**Order No.:**  
**Report #:** 817483  
**Phone:** 0402 6083 96  
**Fax:**

**Received:** Aug 16, 2021 8:35 AM  
**Due:** Aug 23, 2021  
**Priority:** 5 Day  
**Contact Name:** Strider Duerinckx

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						Acid Sulfate Soils Field pH Test	Metals M8	Suite B14: OCP/OPP	Moisture Set
Melbourne Laboratory - NATA Site # 1254									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	S-1	Aug 12, 2021		Soil	S21-Au29715		X	X	X
2	S-2	Aug 12, 2021		Soil	S21-Au29716		X	X	X
3	S-3	Aug 12, 2021		Soil	S21-Au29717		X	X	X
4	ASS1_0.3-0.5	Aug 12, 2021		Soil	S21-Au29718	X			
5	ASS1_0.6-0.8	Aug 12, 2021		Soil	S21-Au29719	X			
6	ASS1_1.0-1.2	Aug 12, 2021		Soil	S21-Au29720	X			
7	ASS2_0.3-0.5	Aug 12, 2021		Soil	S21-Au29721	X			
8	ASS2_0.6-0.8	Aug 12, 2021		Soil	S21-Au29722	X			
9	ASS2_1.0-1.2	Aug 12, 2021		Soil	S21-Au29723	X			

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Sample Detail						Acid Sulfate Soils Field pH Test	Metals M8	Suite B14: OCP/OPP	Moisture Set
Melbourne Laboratory - NATA Site # 1254									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
10	ASS3_0.4-0.6	Aug 12, 2021		Soil	S21-Au29724	X			
11	ASS3_0.6-0.8	Aug 12, 2021		Soil	S21-Au29725	X			
12	ASS3_1.0-1.2	Aug 12, 2021		Soil	S21-Au29726	X			
Test Counts						9	3	3	3

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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



## Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Organophosphorus Pesticides</b>							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
<b>LCS - % Recovery</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	%	102			70-130	Pass	
4,4'-DDD	%	105			70-130	Pass	
4,4'-DDE	%	111			70-130	Pass	
4,4'-DDT	%	113			70-130	Pass	
a-HCH	%	110			70-130	Pass	
Aldrin	%	107			70-130	Pass	
b-HCH	%	98			70-130	Pass	
d-HCH	%	106			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	103			70-130	Pass	
Endosulfan II	%	99			70-130	Pass	
Endosulfan sulphate	%	111			70-130	Pass	
Endrin	%	113			70-130	Pass	
Endrin aldehyde	%	94			70-130	Pass	
Endrin ketone	%	117			70-130	Pass	
g-HCH (Lindane)	%	109			70-130	Pass	
Heptachlor	%	111			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	102			70-130	Pass	
Methoxychlor	%	114			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Organophosphorus Pesticides</b>							
Diazinon	%	97			70-130	Pass	
Dimethoate	%	85			70-130	Pass	
Ethion	%	97			70-130	Pass	
Fenitrothion	%	92			70-130	Pass	
Methyl parathion	%	105			70-130	Pass	
Mevinphos	%	101			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Arsenic	%	109			80-120	Pass	
Cadmium	%	111			80-120	Pass	
Chromium	%	114			80-120	Pass	
Copper	%	112			80-120	Pass	
Lead	%	110			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury			%	111			80-120	Pass	
Nickel			%	114			80-120	Pass	
Zinc			%	113			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>									
<b>Organochlorine Pesticides</b>				Result 1					
Chlordanes - Total	W21-Au31633	NCP	%	109			70-130	Pass	
4,4'-DDD	W21-Au31633	NCP	%	114			70-130	Pass	
4,4'-DDE	W21-Au31633	NCP	%	117			70-130	Pass	
4,4'-DDT	W21-Au31633	NCP	%	125			70-130	Pass	
a-HCH	W21-Au31633	NCP	%	116			70-130	Pass	
Aldrin	W21-Au31633	NCP	%	114			70-130	Pass	
b-HCH	W21-Au31633	NCP	%	103			70-130	Pass	
d-HCH	W21-Au31633	NCP	%	112			70-130	Pass	
Dieldrin	W21-Au31633	NCP	%	105			70-130	Pass	
Endosulfan I	W21-Au31633	NCP	%	105			70-130	Pass	
Endosulfan II	W21-Au31633	NCP	%	104			70-130	Pass	
Endosulfan sulphate	W21-Au31633	NCP	%	119			70-130	Pass	
Endrin	W21-Au31633	NCP	%	117			70-130	Pass	
Endrin aldehyde	S21-Au27934	NCP	%	80			70-130	Pass	
Endrin ketone	W21-Au31633	NCP	%	123			70-130	Pass	
g-HCH (Lindane)	W21-Au31633	NCP	%	114			70-130	Pass	
Heptachlor	W21-Au31633	NCP	%	113			70-130	Pass	
Heptachlor epoxide	W21-Au31633	NCP	%	115			70-130	Pass	
Hexachlorobenzene	W21-Au31633	NCP	%	105			70-130	Pass	
Methoxychlor	W21-Au31633	NCP	%	114			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Organophosphorus Pesticides</b>				Result 1					
Diazinon	S21-Au27934	NCP	%	84			70-130	Pass	
Dimethoate	S21-Au27934	NCP	%	73			70-130	Pass	
Ethion	S21-Au27934	NCP	%	89			70-130	Pass	
Fenitrothion	S21-Au27934	NCP	%	87			70-130	Pass	
Methyl parathion	S21-Au27934	NCP	%	96			70-130	Pass	
Mevinphos	S21-Au27934	NCP	%	97			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S21-Au33144	NCP	%	88			75-125	Pass	
Cadmium	S21-Au33144	NCP	%	90			75-125	Pass	
Chromium	S21-Au23880	NCP	%	117			75-125	Pass	
Copper	S21-Au33144	NCP	%	89			75-125	Pass	
Lead	S21-Au33144	NCP	%	89			75-125	Pass	
Mercury	S21-Au33144	NCP	%	86			75-125	Pass	
Nickel	S21-Au33144	NCP	%	82			75-125	Pass	
Zinc	S21-Au33144	NCP	%	116			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Chlordanes - Total	W21-Au31636	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
b-HCH	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	W21-Au31636	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD			
Azinphos-methyl	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	W21-Au31636	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-Au31636	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-Au31636	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-Au31636	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Toxaphene	S21-Au33371	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	



Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S21-Au29716	CP	%	50	42	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S21-Au29717	CP	mg/kg	2.7	3.0	13	30%	Pass
Cadmium	S21-Au29717	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S21-Au29717	CP	mg/kg	16	19	20	30%	Pass
Copper	S21-Au29717	CP	mg/kg	9.5	13	31	30%	Fail
Lead	S21-Au29717	CP	mg/kg	9.4	11	16	30%	Pass
Mercury	S21-Au29717	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S21-Au29717	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S21-Au29717	CP	mg/kg	20	22	7.0	30%	Pass

## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
S05	Field Screen uses the following fizz rating to classify the rate the samples reacted to the peroxide: 1.0; No reaction to slight. 2.0; Moderate reaction. 3.0; Strong reaction with persistent froth. 4.0; Extreme reaction.

### Authorised by:

Emma Beesley	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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Earth Water Consulting Pty Limited  
2-16 Lourdes Avenue  
Urunga  
NSW 2455



NATA Accredited  
Accreditation Number 1261  
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing  
NATA is a signatory to the ILAC Mutual Recognition  
Arrangement for the mutual recognition of the  
equivalence of testing, medical testing, calibration,  
inspection, proficiency testing scheme providers and  
reference materials producers reports and certificates.

Attention: **Strider Duerinckx**

Report **825929-S**  
Project name **ADDITIONAL - URUNGEN**  
Project ID **2021-83**  
Received Date **Sep 14, 2021**

Client Sample ID			<b>ASS2_0.3-0.5</b>
Sample Matrix			<b>Soil</b>
Eurofins Sample No.			<b>S21-Se40078</b>
Date Sampled			<b>Aug 12, 2021</b>
Test/Reference	LOR	Unit	
<b>SPOCAS Suite</b>			
pH-KCL	0.1	pH Units	4.5
pH-OX	0.1	pH Units	4.2
Acid trail - Titratable Actual Acidity	2	mol H+/t	90
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	150
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	56
sulfidic - TAA equiv. S% pyrite	0.003	% pyrite S	0.14
sulfidic - TPA equiv. S% pyrite	0.02	% pyrite S	0.24
sulfidic - TSA equiv. S% pyrite	0.02	% pyrite S	0.09
Sulfur - KCl Extractable	0.02	% S	< 0.02
Sulfur - Peroxide	0.02	% S	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10
HCl Extractable Sulfur Correction Factor	1	factor	2.0
HCl Extractable Sulfur	0.02	% S	< 0.02
Net Acid soluble sulfur	0.02	% S	< 0.02
Net Acid soluble sulfur - acidity units	10	mol H+/t	< 10
Net Acid soluble sulfur - equivalent S% pyrite <sup>S02</sup>	0.02	% S	< 0.02
Calcium - KCl Extractable	0.02	% Ca	< 0.02
Calcium - Peroxide	0.02	% Ca	< 0.02
Acid Reacted Calcium	0.02	% Ca	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	< 10
sulfidic - Acid Reacted Ca equiv. S% pyrite	0.02	% S	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	0.02
Magnesium - Peroxide	0.02	% Mg	0.02
Acid Reacted Magnesium	0.02	% Mg	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10
sulfidic - Acid Reacted Mg equiv. S% pyrite	0.02	% S	< 0.02
Acid Neutralising Capacity (ANCE)	0.02	% CaCO3	N/A
Acid Neutralising Capacity - Acidity units (a-ANCE)	10	mol H+/t	n/a
Acid Neutralising Capacity - equivalent S% pyrite(s-ANCE)	0.02	% S	N/A
ANC Fineness Factor		factor	1.5
SPOCAS - Net Acidity (Sulfur Units)	0.02	% S	0.14
SPOCAS - Net Acidity (Acidity Units)	10	mol H+/t	90
SPOCAS - Liming rate	1	kg CaCO3/t	7.0

Client Sample ID			ASS2_0.3-0.5
Sample Matrix			Soil
Eurofins Sample No.			S21-Se40078
Date Sampled			Aug 12, 2021
Test/Reference	LOR	Unit	
<b>Extraneous Material</b>			
<2mm Fraction	0.005	g	56
>2mm Fraction	0.005	g	< 0.005
Analysed Material	0.1	%	100
Extraneous Material	0.1	%	< 0.1
% Moisture	1	%	10



### Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
SPOCAS Suite			
SPOCAS Suite	Brisbane	Sep 20, 2021	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Sep 23, 2021	6 Week
- Method: LTM-GEN-7050/7070			
% Moisture	Brisbane	Sep 20, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

**Company Name:** Earth Water Consulting Pty Limited  
**Address:** 2-16 Lourdes Avenue  
Urunga  
NSW 2455  
  
**Project Name:** ADDITIONAL - URUNGEN  
**Project ID:** 2021-83

**Order No.:**  
**Report #:** 825929  
**Phone:** 0402 6083 96  
**Fax:**

**Received:** Sep 14, 2021 2:24 PM  
**Due:** Sep 21, 2021  
**Priority:** 5 Day  
**Contact Name:** Strider Duerinckx

**Eurofins Analytical Services Manager : Andrew Black**

Sample Detail						SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217							
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	ASS2_0.3-0.5	Aug 12, 2021		Soil	S21-Se40078	X	X
Test Counts						1	1

## Internal Quality Control Review and Glossary

### General

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

### Holding Times

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

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

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

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

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

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

### Units

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

### Terms

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

### QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

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

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

### QC Data General Comments

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

# Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>LCS - % Recovery</b>									
<b>SPOCAS Suite</b>									
pH-KCL			%	100			80-120	Pass	
Acid trail - Titratable Actual Acidity			%	92			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>SPOCAS Suite</b>				Result 1	Result 2	RPD			
pH-KCL	S21-Se40078	CP	pH Units	4.5	4.5	<1	30%	Pass	
pH-OX	S21-Se40078	CP	pH Units	4.2	4.2	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	S21-Se40078	CP	mol H+/t	90	89	1.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S21-Se40078	CP	mol H+/t	150	150	1.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S21-Se40078	CP	mol H+/t	56	57	<1	30%	Pass	
sulfidic - TAA equiv. S% pyrite	S21-Se40078	CP	% pyrite S	0.14	0.14	1.0	30%	Pass	
sulfidic - TPA equiv. S% pyrite	S21-Se40078	CP	% pyrite S	0.24	0.23	1.0	30%	Pass	
sulfidic - TSA equiv. S% pyrite	S21-Se40078	CP	% pyrite S	0.09	0.09	<1	30%	Pass	
Sulfur - KCl Extractable	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S21-Se40078	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
HCl Extractable Sulfur	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur - acidity units	S21-Se40078	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Calcium - KCl Extractable	S21-Se40078	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Calcium - Peroxide	S21-Se40078	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Calcium	S21-Se40078	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S21-Se40078	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Ca equiv. S% pyrite	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S21-Se40078	CP	% Mg	0.02	0.02	1.0	30%	Pass	
Magnesium - Peroxide	S21-Se40078	CP	% Mg	0.02	0.03	2.0	30%	Pass	
Acid Reacted Magnesium	S21-Se40078	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S21-Se40078	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Mg equiv. S% pyrite	S21-Se40078	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Acid Neutralising Capacity (ANCE)	S21-Se40078	CP	% CaCO <sub>3</sub>	N/A	N/A	N/A	30%	Pass	
Acid Neutralising Capacity - Acidity units (a-ANCE)	S21-Se40078	CP	mol H+/t	n/a	n/a	N/A	30%	Pass	
ANC Fineness Factor	S21-Se40078	CP	factor	1.5	1.5	<1	30%	Pass	
SPOCAS - Net Acidity (Sulfur Units)	S21-Se40078	CP	% S	0.14	0.14	1.0	30%	Pass	
SPOCAS - Net Acidity (Acidity Units)	S21-Se40078	CP	mol H+/t	90	89	1.0	30%	Pass	
SPOCAS - Liming rate	S21-Se40078	CP	kg CaCO <sub>3</sub> /t	7.0	7.0	1.0	30%	Pass	



## Comments

### Sample Integrity

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

### Qualifier Codes/Comments

Code	Description
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

### Authorised by:

Ursula Long	Analytical Services Manager
Myles Clark	Senior Analyst-SPOCAS (QLD)



**Glenn Jackson**  
**General Manager**

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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# Chain Of Custody (COC)

**Company:** Earth Water Consulting Pty Limited  
**Address:** PO Box 50, Bellingen, NSW, 2454  
**Contact:** Strider Duerinckx  
**Telephone:** 0402608396  
**Email:** strider@ewcon.com.au

**Project Name:** Vungu  
**Project Number:** 2021-83  
**Quote Reference:** Strider Duerinckx  
**Send Results to:** 24 hrs ☐ 48 hrs ☐ 5 Day ☒ Other ☐  
**Results Required by\*:**

**COC Number#:** ( Of )  
 #The COC number will act as a purchase order number if not supplied  
**ESDAT Req ?:** (email) Yes  
 strider@ewcon.com.au

## ANALYSIS REQUIRED

## SAMPLE DESCRIPTION

Lab ID	Sample ID	Date & Time Sampled	Soil / Water Other	Comments#	Totals:
	S-1	12.08.21	S	M8	3
	S-2		S	x	3
	S-3		S	x	3
	ASS1-03-05		S	x	3
	ASS1-06-08		S	x	3
	ASS1-10-12		S	x	3
	ASS2-03-05		S	x	3
	ASS2-06-08		S	x	3
	ASS2-10-12		S	x	3
	ASS3-04-06		S	x	3
	ASS3-06-08		S	x	3
	ASS3-10-12		S	x	3
					9

# Please Provide Field PID Readings where possible

## Chain of Custody

Relinquished by:

Received by:

Relinquished by:

Received by:

Relinquished by:

Received by:

## Special Requirements (eg. OHS issues etc.)

Sample Receipt Advice (Lab Use Only)

All Samples Received in Good Condition ☐

All Documentation in Proper Order ☐

Samples Received with an Attempt to Chill ☐

Samples Received Within Holding Times ☐

Average sample temp on receipt: (°C)

For enquires please quote Ref. No.

1817483

13-4°C

16/8/21

G.L. Syd

Page ..... of .....

**From:** Strider Duerinckx <[strider@ewcon.com.au](mailto:strider@ewcon.com.au)>  
**Sent:** Tuesday, September 14, 2021 2:24 PM  
**To:** Konstantinos Amiridis <[KonstantinosAmiridis@eurofins.com](mailto:KonstantinosAmiridis@eurofins.com)>  
**Subject:** retest of samples for report 817483-S

EXTERNAL EMAIL\*

Hi Konstantinos, can you organise to have sample ASS2\_0.3-0.5 from report 817483-S tested for SPOCAS.

Regards,

Strider Duerinckx



\* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

# APPENDIX D

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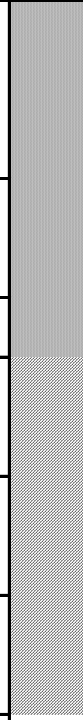


# Soil Borelog

<b>Borehole No:</b>	<b>BH1</b>
Logged by:	NS
Drilling date:	12/08/2021

Project ref:	2021-83	Drilling method:	Powered Auger
Client:	RDM	Borehole location:	Figure 2
Address:	Lot 2 & Lot 200 South Arm Road, Urunga	Borehole coords:	0499385, 6626261

## PROFILE DESCRIPTION

Depth (m)	Sampling depth/name	Graphic Log	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1	ASS1_ 0.3-0.5		A1	Clay loam	Moderate	Greyish Black	Nil	<5%	SM	Topsoil
0.2			B1	Clay loam	Strong	Light Brown	Brownish Black & Orange	<5%	SM	Residual
0.3										
0.4										
0.5										
0.6										
0.7	ASS1_ 0.6-0.8		B2	Light Clay	Strong	Brownish Orange	Orange	<10%	SM	Residual
0.8										
0.9										
1.0	ASS1_ 1.0-1.2									
1.1										
1.2			BH terminated at 1.2m depth							
1.3										
1.4										
1.5										

### Moisture condition

D	Dry	M	Moist	W	Wet / saturated
SM	Slightly moist	VM	Very moist		



# Soil Borelog

Project ref: 2021-83 Client: RDM Address: Lot 2 & Lot 200 South Arm Road, Urunga			Borehole No: BH2	
			Logged by: NS	
			Drilling date: 12/08/2021	
			Drilling method: Powered Auger	
			Borehole location: Figure 2	
			Borehole coords: 0498291, 6626081	

## PROFILE DESCRIPTION

Depth (m)	Sampling depth/name	Graphic Log	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments	
0.1	ASS2_ 0.3-0.5		A1	Clay loam	Strong	Black	Nil	Nil	SM	Topsoil	
0.2			A2	Clay loam	Strong	Greyish Brown & Blackish Brown	Dull Orange	<5%	SM	Residual	
0.3											
0.4											
0.5			B1	Light Clay	Strong	Pale Brown	Orange & Greyish Brwon	<5%	SM	Residual	
0.6											
0.7											
0.8											
0.9	ASS2_ 1.0-1.2		B2	Light Clay	Strong	Orangish Brown	White	<5%	D-SM	Residual	
1.0											
1.1											
1.2			BH terminated at 1.2m depth								
1.3											
1.4											
1.5											

### Moisture condition

D	Dry	M	Moist	W	Wet / saturated
SM	Slightly moist	VM	Very moist		

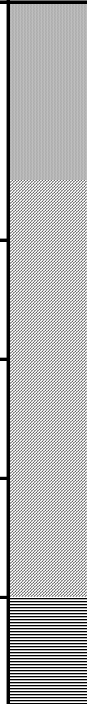
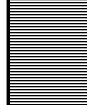


# Soil Borelog

<b>Borehole No:</b>	<b>BH3</b>
Logged by:	NS
Drilling date:	12/08/2021

Project ref:	2021-83	Drilling method:	Powered Auger
Client:	RDM	Borehole location:	Figure 2
Address:	Lot 2 & Lot 200 South Arm Road, Urunga	Borehole coords:	0498956, 6626547

## PROFILE DESCRIPTION

Depth (m)	Sampling depth/name	Graphic Log	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1			A1	Clay loam	Moderate	Borwnish Black	Nil	<5%	SM	Topsoil
0.2			A2	Clay Loam	Strong	Pale Brown Grey Brown	Dull	<5%	SM	Residual
0.3										
0.4	ASS3_0.4-0.6		B1	Clay Loam to Light Clay	Strong	Yellowish Brown	Orange	<5%	SM	Residual
0.5										
0.6										
0.7	ASS3_0.6-0.8		B2	Light Clay	Strong	Dull Orange	White Red	Nil	SM	Residual
0.8										
0.9										
1.0										
1.1	ASS3_1.0-1.2		B3	Light Clay to Medium Clay	Strong	Orangish Red & White	Nil	Nil	D - SM	Residual
1.2										
1.3					BH terminated at 1.2m depth					
1.4										
1.5										

### Moisture condition

D	Dry	M	Moist	W	Wet / saturated
SM	Slightly moist	VM	Very moist		

# APPENDIX E

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## Nominated Area Water Balance & Storage Calculations

Site Address: **Sth Arm Rd, Urunga**

Proj Ref: 2021-83

Notes:



Flow Allowance		150	l/p/d
No. of bedrooms		4	bdr
Occupancy		1.5	p/room
Design Wastewater Flow	Q	900	L/day
Daily DLR		8.0	mm/day
Crop Factor	C	0.6-0.8	unitless
Retained Rainfall Coefficient	RRc	0.9	unitless
Void Space Ratio	V	0.3	unitless
Nominated Land Application Area	N	135	sqm
Trench/Bed wetted thickness	Ww	0.15	m
Rainfall Data	Urunga (monthly median)		
Evaporation Data	Coffs Harbour Evap Data (monthly average)		

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	365
Median Rainfall	R	\	mm/month	123.3	155.1	175.8	118.5	89.4	72.7	38.6	28.5	39	59.7	93.1	114.8	1340.8
Average Evaporation	E	\	mm/month	192.2	156.8	148.8	117	86.8	69	77.5	105.4	135	161.2	171	192.2	0
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.70	0.70	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	154	125	119	82	61	41	47	63	95	113	137	154	1189.94
Percolation	B	DLRxD	mm/month	248.0	224	248.0	240.0	248.0	240.0	248.0	248.0	240.0	248.0	240.0	248.0	2920.0
Outputs		ET+B	mm/month	401.8	349.44	367.0	321.9	308.8	281.4	294.5	311.2	334.5	360.8	376.8	401.8	4109.9
INPUTS																
Retained Rainfall	RR	R*RRc	mm/month	110.97	139.59	158.22	106.65	80.46	65.43	34.74	25.65	35.1	53.73	83.79	103.32	997.65
Effluent Irrigation	W	(QxD)/L	mm/month	206.7	186.7	206.7	200.0	206.7	200.0	206.7	206.7	200.0	206.7	200.0	206.7	2433.3
Inputs		RR+W	mm/month	317.6	326.3	364.9	306.7	287.1	265.4	241.4	232.3	235.1	260.4	283.8	310.0	3431.0
STORAGE CALCULATION																
Storage remaining from previous month			mm/month		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-280.4	-77.3	-7.2	-50.8	-72.1	-53.2	-177.0	-263.1	-331.3	-334.8	-310.0	-305.9	-700.7
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Bed Storage Depth for Area	BS		mm	0.00	Is the calculated storage acceptable?			Yes, storage is conservative								
Nominated trench width		0.9														
Total length based on nominated width		150.0														
No. of beds		4														
Individual bed lengths		37.5														
Individual Bed footprints		33.8														
Spacing between beds		1.5														
Width of bed area		8.1														
Total bed area		304														
Nutrient uptake zone		502	2m buffer nutrient uptake allowance													