

Planning Proposal

No. 40 Fairway Drive, South Grafton

Lot 37 DP 1104240

Our Ref: 8432
Date: 20th January, 2017
A. Fletcher & Associates Pty Ltd
PO Box 1213
Grafton 2460

This planning proposal has been prepared in accordance with the NSW Department of Planning document "A Guide to Preparing Planning Proposals" on behalf of the owner of the subject land, namely Ken W. Robson Holdings Pty Ltd.

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Signature

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Introduction

This planning proposal seeks to:-

- a) rezone part of Lot 37 (19.85ha) DP 1104240 from Zone R5 – Large Lot Residential to R1 – General Residential as shown on the Existing & Proposed Zoning Plans at Annexure A.
- b) vary the minimum lot size in the remaining R5-Large Lot Residential zone to 2000m² as shown on the Existing & Proposed Lot Size Maps at Annexure B
- c) amend the Height of Buildings Map Sheet HOB_008D, as shown at Annexure I.

The rezoning would provide for further residentially zoned land adjacent to similarly zoned land fronting Fairway Drive, Tallwood Street and Daniels Close, which is currently almost fully developed.

The site, which is located in the South Grafton Heights Precinct, is shown on the sketch below.



Locality Sketch

Subject Lands

The total area of Lot 37 DP 104240 is some 19.85ha. Site details and contours over the subject land are as shown on our Dwg. No. 8432 REZ (B) in Annexure C. This plan also shows an indicative lot layout giving a potential yield of:-

- a) 85 residentially sized lots, including 13 lots of 450m² (42-49, 54-58) for affordable housing. Whilst these lots are shown in the one cul-de-sac, due to the flatter land on the ridge, they could easily be integrated through the entire, proposed residential zone; and
- b) 26 larger lots in the existing R5 – Large Lot Residential zoned part of the land, ranging in size from 2000m² to 8,870m².
- c) A Public Reserve Lot (116) of some 1.759ha.

There is an existing dwelling and shed on the subject land. The existing dwelling and adjacent tennis court would be retained on proposed Lot 72.

The land is cleared grassland with some scattered trees that has been used for many years for the grazing of beef cattle.

The land fronts Fairway Drive, Rushforth Road and also has a “battle-axe” frontage (6 metres) to Tallowood Street. The site dimensions and area are as shown on Sheet 1 DP 1104240 at Annexure D.

The subject land is mapped as:-

- a) “Proposed Future Urban Release Areas” see (Growth Areas Map 2 – Clarence South) in the Mid North Coast Regional Strategy; and
- b) part Urban Residential, part Rural-Residential and Open Space in the “South Grafton Heights Precinct – A Strategy for the Future” (see Annexure E).

The Planning Proposal

Part 1 Objectives or Intended Outcomes

The objectives of this planning proposal are to:-

- a) allow for the expansion of the existing R1 – General Residential zone, that adjoins the subject land, to enable further residential development; and
- b) allow for large lot residential development within the existing R5-Large Lot Residential zone that reflects the site topography and allows for a range of lot sizes down to a minimum of 2000m².
There is a proven demand for these smaller “rural-residential” lots as evidenced by the large number (about 14) of lots less than 4000m² (approved under the now repealed S.E.P.P 1) in the adjacent “Fairway Estate” (fronting Bent Street, Denton Drive and Fairway Drive); and
- c) provide a Public Reserve area (1.759ha) that interfaces with the existing Public Reserve opposite in Fairway Drive; and
- d) provide for a buffer (20 metre wide Restriction on the Use of Land and Drainage Easement – see Annexure B) between the proposed R1-General Residential zone and the existing R5-Large Lot Residential zone; and
- e) provide wide drainage easements (minimum 20 metres wide and up to 35 metres wide) over the existing 3 wide gullies dissecting the R5 – Large Lot Residential zone. These easements will also provide an effective buffer between the proposed two cul-de-sacs servicing the proposed large lot residential zone.

The intended outcome of these objectives is to provide for a range of fully-serviced residential and large lot residential development that reflects the varying topography within this site.

Part 2 Explanation of the Provisions

To achieve the above objectives the following amendments will be required to the Clarence Valley Local Environmental Plan 2011, namely:-

- a) *“Amendment to Land Zoning Map – Sheet LZN_008D in accordance with the proposed zoning map shown in Annexure A”*
- b) *“Amendment to Lot Size Map – Sheet LSZ_008 in accordance with the proposed lot size map shown in Annexure B. The proposal is to designate the remaining R5 Large Lot Residentially zoned area within the subject land with the letter V, denoting a minimum lot size of 2000m²”*
- c) *Amendment to Height of Buildings Map Sheet HOB_008D in accordance with the proposed height of buildings map shown in Annexure I. The proposal is to provide a 9m building height limit in the proposed R1 zone.”*

As stated this will have the effect of:-

- i) rezoning part of Lot 37 DP 1104240 to R1 – General Residential;
- ii) varying the minimum lot size within the remaining R5 Large Lot Residential zoning of subject Lot 37 DP 1104240 to 2000m²; and
- iii) imposing a 9m building limit in the proposed R1 zone, consistent with the general R1 building height limit.

Part 3 Justification

Section A Need for Planning Proposal

1. Is the Planning Proposal a result of any strategic study or report?

Yes, as follows:-

- a) the Mid North Coast Regional Strategy (MNCRS- March 2009) maps the subject land as part of “Proposed Future Urban Release Areas” (see Growth Areas Map 2 – Clarence South).
In addition, the subject land satisfies the relevant Sustainability Criteria as outlined in Appendix 1 of the MNCRS March 2009, namely for:-
 - i) Infrastructure Provision
 - ii) Access
 - iii) Housing Diversity
 - iv) Avoidance of Risk
 - v) Natural Resources
 - vi) Environmental/Archaeological Protection
 - vii) Quality & Equity in Services; and
- b) the “South Grafton Heights Precinct – A Strategy for the Future” (hereafter called SGHP Strategy) adopted by Council on 21st August, 2007 and amended on 19th April, 2011.
The subject land forms part of the area covered by the SGHP Strategy. Figure 2 (on p.19) of that Strategy shows the preferred development scenario of the land as:-
 - i) part urban residential

- ii) part large lot residential
- iii) part open space buffers

This planning proposed is in general accordance with the preferred scenario for the subject land.

2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes, the:-

- a) rezoning of part of the subject land (Lot 37 DP 1104240) to R1 – General Residential will enable the logical expansion of the existing residential lands to the north and east of the subject land. Extension points for services (sewer, water, power and Telstra) have already been provided to connect the subject land to the full range of services; and
- b) reduction in the minimum lot size for the remaining R5 – Large Lot Residential zone will enable the better utilisation of serviced land in this zone by allowing a range of lot sizes, satisfying a proven demand in this locality.

There is no better way to provide for the extension of residential and large lot residential development in this identified Urban Release Area.

3. Is there a net community benefit?

Yes there will be positive economic and social outcomes that will stem from the proposed rezoning and reduction to the minimum lot size area in the large lot residential zone, namely:-

- i) that the proposed R1-General Residential zone adjoins similarly zoned lands to the north and east, which are now almost fully developed; and
- ii) that about 12% (13 lots at 450m²) of the proposed residential zoned land constitutes affordable housing land; and
- iii) that generally it will provide a range of dwelling types and densities.
- iv) that the subject land has all services readily available and constructed road access (Fairway Drive and Tallowood Street) along its eastern boundary and western boundary (Rushforth Road); and
- v) that the subject land is not constrained by flooding, bushfire, acid sulphate soils and geotechnical hazard. Slope analysis of the site shows that 99% of the site has slopes less than 20%. Where slopes are greater than 20% "Part P Controls for Developing Steep Land" in Councils Residential Zones DCP 2011 would apply ; and
- vi) that the land is cleared and not affected by environmental or archaeological constraints; and
- vii) the future construction of dwellings will provide local employment opportunities as well as opportunities for local suppliers during construction ; and
- viii) it will add to the rateable land base in Grafton and increase retail demand in local shops and businesses.
- ix) the future subdivision of the subject land will produce material benefits, both in terms of works on the ground and by contributions

which will address a range of community services. In terms of broad areas such as health and education its impact is limited to providing some additional demand for those services which may, in the long term, generate increased employment opportunities in these sectors.

Section B Relationship to Strategic Planning Framework

4. Is the planning proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy?

Mid North Coast Regional Strategy 2006-2013 (MNCRS- March 2009).

The main focus of the MNCRS is to ensure that adequate land is available in appropriate locations to satisfy the projected housing and employment needs of the Mid North Coast Regions population over the 25 year period from 2006-2031.

The MNCRS identifies that increases in the population of the Mid North Coast Region will create the need for a minimum of 7100 additional dwellings in the Clarence subregion.

The MNCRS maps the subject land as part of "Proposed Future Urban Release Areas" (see Growth Area Map 2- Clarence South) and limits any settlement expansion to those areas.

The MNCRS also outlines Sustainability Criteria in Appendix 1.

Hence, this planning proposal is consistent with the objectives and settlement criteria as outlined in the MNCRS.

5. Is the planning proposal consistent with the Local Councils Community Strategic Plan, or other local strategic plans?

a) Clarence Valley Settlement Strategy (CVSS) – March 1999

See Appendix F.

Section 4.1 of the CVSS suggests a vision for where the Clarence Valley should be in the year 2016 is:

"A healthy prosperous and sustainable future for all forms of life in the Clarence Valley by acknowledging and building on the strengths of the valley, particularly the river, and by encouraging a settlement pattern which builds on existing communities and minimises urban and rural residential sprawl"

Section 5.3 of the CVSS looks at a Specific Area Strategy for South Grafton which is that:- *"Future residential development will comprise urban infill and small peripheral extensions"*

Clearly, this planning proposal is consistent with the above sections of the CVSS as it proposes a small extension to the existing R1 – General Residential zone and will minimise urban and rural-residential sprawl.

b) South Grafton Heights Precinct – A Strategy for the Future, adopted by Clarence Valley Council on 21st August, 2001 and amended on 19th April, 2011 (hereafter called the SGHP Strategy)

“The SGHP Strategy suggests that the South Grafton Heights Precinct and the town of South Grafton have additional capacity for both urban residential and rural-residential development. Constraints can be broadly grouped into infrastructure and services, physical and topographical, and social and human habitat. The strategy concludes that future development is not limited, within the next 25 years, or so, by significant constraints of infrastructure and services or physical and topographical types”

Part 3 of the SGHP Strategy outlines the Amended Preferred Scenarios *“which aims to enable additional urban development with the footprint of South Grafton and ameliorate impact of that development on social, human habitat and economic and ecological elements. It has been estimated that the scenario will provide for over 700 lots or land supply to about the year 2030”*

“Figure 2 (on P.19 see Annexure E) shows the diagrammatic representation of the general structure and key features of development under the preferred scenario...”

In summary, the preferred development scenario of the subject land is:-

- a) part urban residential
- b) part large lot residential
- c) part open space buffers to separate large lot and urban residential development.
- d) neighbourhood park
- e) that access onto Rushforth Road is adequate.

This planning proposal is in general accordance with the preferred scenario in that:-

- a) the proposed R1-General Residential zone is within the area generally identified for urban residential and partly into an open space corridor; and
- b) the proposed 26 large lot residential lots, ranging in size from 2000m² to 8,870m², are within the area generally identified for large lot residential and open space corridors.
- c) there is a 20 metre buffer proposed between the R1-General Residential and R5 – Large Lot Residential zones formed partly by:-
 - i) a proposed Restriction on the Use of Land that will prevent any dwelling/shed within this area; and
 - ii) a proposed drainage easement that connects to Rushforth Road.

This type of buffer, to be retained in private ownership, has been negotiated with Clarence Valley Council’s Strategic Planning officers who prefer not to have extensive areas of land dedicated to Council as Public Open Space, due to the future maintenance costs.

In addition, proposed Lots 92 & 93 (of some 2000m² each) and the proposed road 20 wide form a transitional buffer between the proposed R1 zone and the existing R5 zoned “Fairway Estate” abutting on the southern boundary of the subject land.

- d) the Public Reserve corridor (& buffer), connecting previously developed residentially zoned land to the east with Fairway Drive (Lot 36 DP 1104240), has been extended to the north-west (and towards Rushforth Road) as

proposed Public Reserve Lot 116 (abt. 1.759ha). This Public Reserve area has a reasonably flat area (about 1,700m²) at its southern end suitable for development as a neighbourhood park. This area is also adjacent to the existing bus stop on Fairway Drive.

- e) the proposed access onto Rushforth Road will be formed by extending Fairway Drive to Rushforth Road and constructing a suitable intersection. Sight distances are compliant in this location. This will be the only access point onto Rushforth Road from the subject land. Restrictions on the Use of Land will be placed on all proposed lots backing onto Rushforth Road, prohibiting direct access to that Road.

In addition, as previously mentioned, the 3 wide gullies draining the ridge to Rushforth Road will be retained as drainage easements (between 20m to 35m wide) within private property. As no building construction will be permitted within these drainage easements, they will effectively act as open space area and provide buffers between the adjacent larger lot cul-de-sacs.

In the case of the most southern gully and proposed drainage easement, there will also be an area between 27 metres and 58 metres wide, adjacent to the southern boundary of the subject land and within proposed Lots 111 and 115, that is very unlikely to have any dwellings and will form an effective buffer to the 1(c) zoned land to the south. This could be enforced by use of a suitable Restriction on the Use of Land.

Hence, it is seen that this planning proposal is in general accordance with the intent and preferred scenario of the SGHP Strategy. This proposal is very timely as the adjacent residentially zoned land is almost fully developed.

c) Clarence Valley Social Plan 2010-2014

The Social Plan details how the relevant elements of Councils Community Strategic Plan relating the Society & Culture will be achieved:

Our intention is for our creative valley cultures, rich in history and diversity, to be supported by good information, education, health, recreation and other services, providing opportunities for quality lifestyles involving a sense of well-being in which we value of communities and each other”

The Social Plan then identifies key social needs and includes a series of action plans to respond to identified needs. The Plan acknowledges that many of the needs and actions are the responsibility of, and need to be addressed by, state or federal government and/or non-government organisations plus local community groups. Nevertheless, Clarence Valley Council has a role to plan in identifying needs/actions, sourcing funding and providing local assistance to external providers.

The Social Plan is built around 4 overarching goals, each with a list of actions attached:-

- Community Health & Wellbeing
- Creative Culture & Recreation
- Good Community Relations
- Community Resilience

The 4 avenues by which the proposed subdivision can contribute to actions or outcomes in the Social Plan are:-

- incorporate Safe by Design principle into the subdivision design
- achieve the objectives of the Clarence Valley Affordable Housing Strategy
- provide recreation and community facilities within the development
- contribute to recreation and community facilities through Section 94 Contributions, estimated at approximately \$389,000 each for Community Facilities and Open Space/Recreational Facilities (i.e. \$778,000 total)

The practical relevance of these to the 4 overarching goals are as follows:-

Goal 1: Community Health and Wellbeing

The Social Plan lists 46 Need areas and 75 Actions in respect of this Goal. The majority of these in both categories are the responsibility of state and federal agencies, though in some instances funding may be allocated to Council or community groups/non-government organisations to facilitate. A major role for Council is advocacy and support to external providers.

The conceptual 112 lot subdivision will in effect increase the demand for a number of these services, though it will have the indirect benefit of, hopefully, a greater allocation of external funding to reflect the population increase and the socio-economic mix of that population in the future.

Specific Actions which can be addressed as a result of the Planning Proposal include:-

- **Provision of Community Centres**

The Actions include lobbying for a Women's Health Centre and a Youth Service Centre. The Clarence Valley Contributions Plan 2011, includes the provision of a Community Centre, a neighbourhood Centre and a Youth Space within the Grafton and Surrounds Service Catchment, which includes South Grafton. No locations are specified for any of these Centres and Council could provide 1 or more within the South Grafton area utilising future contributions from this proposal plus accumulated contributions. In addition, consideration could be given to amending the Contributions Plan to expand the operation of existing service providers in South Grafton such as the New School of Arts or Camellia Cottage through Section 94 contributions to capital works.

- **Encouraging sporting participation, develop safe accessible walking paths in public space, develop bikeways.**

The subdivision concept plan includes a 1.759 hectare Public Reserve with frontage to 2 roads and a 1700m² section at its southern end that is relatively flat. This space could be developed through embellishment to provide a safe and attractive space incorporating walking tracks and facilities servicing a range of age groups. This can be provided as a works in kind offset against S94 Open Space/Recreational Facilities contributions or by Council from those contributions. In any instance the community, particularly key groups such as youth and the aged, should be consulted on the design of this space.

Significant funds are allocated in the Contribution Plan for cycleways within the Grafton/South Grafton area which could be allocated to extend and connect to the Rushforth Road cycleway and a network could be provided within the development particularly in the upper loop road reserve which has been widened to 20 metres for this purpose.

The Contributions Plan also includes capital works in various public spaces within South Grafton and funds contributed from this development could assist in their provision to the benefit of the broader local community.

- Affordable Housing

The Clarence Valley Affordable Housing Policy (adopted October 2015) confirms that there is a considerable undersupply of social housing in the Valley. The Policy sets a criteria of 1 unit of affordable housing for each of 10 or more dwelling units. Affordable housing sites are considered to be lots of 450m² or less of which 13 are provided, and can also include lots over 750m² which is considered suitable for the construction of dual occupancies. The conceptual layout meets the criteria.

- Crime Prevention

This is best achieved by incorporating Safe by Design principles into the approved subdivision layout, which generally discourages the use of cul-de-sacs. The conceptual plan includes 4 cul-de-sacs, all which represent sound engineering practice and provide a practical and affordable layout. Nevertheless, the final subdivision layout will be subject to a development application process and the developer and their consultants will liaise with the appropriate staff at Council and the local police command in its preparation.

Other Safe by Design Principles incorporated into the subdivision are:-

- a) the proposed Large Public Reserve (about 1.759ha) fronts 2 streets with no blind spots. As well an open style of fencing will be mandated and/or provided along the S-W boundary of the proposed Public Reserve; and
- b) the retention of the proposed wide drainage easements (over the existing gullies) in private ownership.

Goal 2: Creative Culture & Recreation

As discussed above, S94 contributions in either cash or kind, will assist in meeting actions such as implementing Council's Recreation and Open Space Plan; implementing the Community and Cultural Facilities Strategic Plan and upgrading playgrounds and sporting fields within South Grafton.

Goal 3: Good Community Relations

Providing various community spaces in existing and new community facilities within Grafton and South Grafton will contribute to achieving this goal.

Goal 4: Community Resilience

The broad cultural and educational actions attached to this goal will be a benefit to identified cohorts within South Grafton, including those who may settle in the proposed subdivision, but there is no direct contribution towards those actions from the proposal.

In summary, the future subdivision of the land subject of this proposal will produce material benefits both in terms of works on the ground and by contributions which

will address a range of community services. In terms of broad areas such as health and education its impact is limited to providing some additional demand for those services, which may, in the long term, generate increased employment opportunities in these sectors.

6. Is the planning proposal consistent with the applicable State Environmental Planning Policies (S.E.P.P's)?

This planning proposal is consistent with the applicable S.E.P.P's as detailed in Table 1 below.

Table 1 – Review of Applicable S.E.P.P's

State Environmental Planning Policy	Compliance	Comments
S.E.P.P 14 Coastal Wetlands	Complies	No Coastal wetland on the subject land
S.E.P.P 44 Koala Habitat Protection	Not Applicable	No potential or core Koala Habitat on the subject land
S.E.P.P 55 Remediation of Land	Complies	No contamination is known to occur on the subject land. The subject land was part of a larger parcel of land purchased by Ellen Hawthorne in the 1930's and was used for grazing purposes. Ron Thompson then bought a large section of this land, part of which has now been developed for rural-residential and residential development and part of which forms part of the subject land which is still used for grazing. In 1976 our client purchased the property, then comprising some 30.35ha (75 acres) and has since developed part of it for rural-residential land (10 lots) and residential land (35 lots). The remainder of the subject land has only been used for grazing purposes since 1976. Hence, the predominate use of the subject land has been for grazing cattle, which use is unlikely to have created any soil contaminations. The decommissioned Elland Dip Site is located adjacent to the S-W corner of the subject land within Lot 77 DP 101440. This dip site was decommissioned many years ago and the license lapsed in September, 1985. The dip

		bath was capped. See Appendix G containing a status report on the Elland Dip Site from the NSW Department of Primary Industries web site. As outlined above the restricted area on the southern side of proposed Lots 111 to 115 will mean that any dwelling on those lots will be greater than 100 metres from the former dip site and physically separated by a ridge and a gully. A Phase 1 Site Contamination Assessment was carried out over the subject land by Regional Geotechnical Solutions dated 9th June, 2016. See Annexure J. This Assessment concludes that <i>“on the basis of the assessment undertaken the material meets the requirements for a “Residential A” site as detailed in the NEMP 2013 Guidelines. Further assessment regarding site contamination is not required.”</i>
S.E.P.P 66 Integration of Land Use and Transport Draft	Complies	The subject lands front existing Council public roads, being Fairway Drive, Tallowood Street and Rushforth Road. Rushforth Road connects to the Gwydir Highway which is located about 2.7km to the north.

7. Is the planning proposal consistent with applicable Ministerial Directions (S.117 directions)?

Directions made under Section 117 of the Environmental Planning and Assessment Act, 1979, issued on 1st July, 2009, which are relevant to the subject lands, are identified and addressed in Table 2 below.

Table 2 – Review of Applicable S.117 Directions

S.117 Direction	Compliance	Comments
2. Environment and Heritage		
2.1 Environment Protection Zones	Complies	It is proposed to protect the existing wide gullies on the site by conserving them as Public Reserve or drainage easements (in private ownership) with no building permitted within them. There are no environmental protection zones over the subject land.

2.3 Heritage Conservation	Complies	See Appendix H for AHMIS Search Report and Grafton Ngerrie L.A.L.C Assessment. These reports show that there are no aboriginal sites or artefacts on the subject land. The L.A.L.C has no objections to the proposed rezoning and subsequent development. In the unlikely event that an aboriginal artefact was found on the subject land then the work would stop and the L.A.L.C and N.P.&W.S would be notified.
3. Housing, Infrastructure & Urban Development		
3.1 Residential Zones	Consistent	This planning proposal is consistent with the objectives of this direction as well as Clauses (4) and (5)
3.3 Home Occupations	Complies	Home occupations are permitted without consent under the R1 General Residential provisions of the Clarence Valley LEP 2011.
3.4 Integrating Land Use and Transport	Consistent	This planning proposal is consistent with the objectives of this direction as well as Clause (4)
4. Hazard & Risk		
4.1 Acid Sulphate Soils	Complies	Clarence Valley Council Acid Sulphate Soil Risk Map shows that acid sulphate soils are not known or expected to occur on the subject lands.
4.2 Mine Subsidence & Unstable Land	Complies	The subject land is not within a Mine Subsidence District. As shown in the slope analysis the western slopes of the subject land are steeper and this is the basis for the larger lots and R5 zoning. These steeper slopes were classed as <i>"High Erosion Hazard"</i> albeit with residential capability in the 1988 Grafton Rural Lands Study. However, slope analysis shows that 99% of the site has slopes less than 20%. Where slopes are greater than 20% <i>"Part P Controls for Developing Steep Land"</i> in Councils Residential Zones DCP 2011 would apply.
4.3 Flood Prone Land	Complies	The subject lands are considered to be flood free and hence the proposal will not impact on the function of the floodplain.

4.4 Planning for Bushfire Protection	Complies	Inspection of Clarence Valley Councils Bushfire Prone Land Map shows that the land <u>is not</u> bushfire prone.
5. Regional Planning		
5.1 Implementation of Regional Strategies	Consistent	This proposal is consistent with the objectives and planning outcomes of the MNCRS (approved by the Minister of Planning) and is located within an area identified within that strategy as suitable for future urban release.
6. Local Plan Making		
6.1 Approval & Referral Requirements	Consistent	This proposal satisfies the objectives of this direction being a simple change of zoning of part of the site to R1 General Residential, variation to minimum lot size in the R5- Large Lot Residential Zone to 2,000m ² and amendment of the Height of Buildings Map for the R1 zoning proposed. As such it is also consistent with Clause 6.1 (4).
6.2 Reserving Land for Public Services	Consistent	This proposal satisfies Objective 1a) of this Direction by dedicating land for open space as Council Public Reserve. Objective 1b) is not applicable.
6.3 Site Specific Provisions	Consistent	No unnecessary restrictive site specific planning controls apply to this proposal which is in accordance with Clauses 6.3 (1) and (4). The drawing in Annexure C is presented to enable comparison with the SGHP Strategy provisions.

Section C Environmental, Social & Economic Impact

8. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

No, the subject land is cleared grassland with some scattered trees. The retention of the wide gullies as private drainage easements or Public Reserve will mitigate the effects of future residential development. Council officers have previously advised that a detailed Fauna & Flora Assessment of the site is not required due to the extensive cleared area and its long history of cattle grazing.

9. **Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?**

Site

Any effects caused by disturbances of the soil during construction of roads, drainage, sewerage, water and other services would be minimised by the adoption of appropriate erosion and sediment control measures in accordance with Clarence Valley Council's "Development in Residential Zones" DCP 2011. The actual procedures to be implemented would be dealt with at the Development Application/Construction Certificate stage by the preparation of detailed Erosion & Sediment Controls plan/s. The careful implementation of such plans would ensure no deterioration of downstream water quality or increased sedimentation.

Traffic

The site presently has access to Grafton by way of:-

- a) Fairway Drive and Bent Street to the south; and
- b) Tallowood Street and Rushforth Road to the north.

It is proposed to extend Fairway Drive to Rushforth Road and construct a new intersection with Rushforth Road. As part of our client's previous successful rezoning application to Grafton City Council the matter of the proposed new intersection was referred to Councils Traffic Advisory Committee in April, 1995. The Committee commented as follows:-

"There is no objection in principle to the rezoning but the developer should be made aware that the subdivision should make provision for the following:-

- 1. *Provision for bus stopping points within the development; and*
- 2. *Provision for turning movements at any intersection with Rushforth Road.*

In respect of these 2 points we comments as follows:-

- i) our client has provided a bus stopping point in Fairway Drive between Daniels Close and Tallowood Street although, to date, no bus shelter has been constructed. A further bus stopping point could be made by widening Bent Street within proposed Lot 72. All proposed lots would then be within 400 metres of a bus stop ; and
- ii) this point is acknowledged and detailed design of the intersection would be provided at DA or CC stage.

10. **How has the planning proposal adequately addressed any social and economic effects?**

As outlined previously the existing adjacent residentially zoned land is almost fully developed. This planning proposal will allow for the logical and timely extension of the South Grafton Heights precinct, providing employment opportunities for local builders and suppliers during the period of future residential construction.

In addition:-

- a) about 12% (13 lots at 450m²) of the proposed residential zoned land constitutes affordable housing land; and
- b) the subject land has all services readily available and has constructed road access along its eastern (Fairway Drive and Tallowood Street) and western boundaries (Rushforth Road); and
- c) it will add to the rateable land base in Grafton and increase retail demand in local shops and businesses; and
- d) there will be no negative effects on adjacent large lot residential development due to the proposed buffers/roads.

For an assessment of social impacts, see Section 5(c) above.

Hence, it is expected this proposal will have a number of positive social and economic outcomes.

Section D State & Commonwealth Interests

11. Is there adequate public infrastructure for the planning proposal?

The subject land would be fully serviced with reticulated sewerage and water, underground power and telecommunications.

The land already has well-constructed road frontages and easy access to South Grafton and Grafton. It is not considered that it will be necessary to upgrade the surrounding local road network as a result of this proposal.

Other existing infrastructure in the South Grafton/Grafton area (e.g. Grafton Hospital, a large number of schools, emergency services, waste management/recycling) is considered more than adequate to service this approximate 112 lot proposal.

12 What are the views of State & Commonwealth public authorities consulted in accordance with the gateway determination?

This section of the planning proposal will be completed following consultation with the State and Commonwealth Public Authorities identified in the Gateway Determination.

However, it is noted that the preparation of the Clarence Valley Settlement Strategy and South Grafton Heights Precinct Strategy involved widespread consultation with a number of NSW government departments, the public and the Department of Planning.

Part 4 Community Consultation

This planning proposal has outlined the proposed amendments to the Clarence Valley Local Environmental Plan 2011 to allow for the logical expansion of the South Grafton Heights Precinct.

This proposal is considered to be a relatively minor amendment which is in accordance with the Mid North Coast Regional Strategy, the Clarence Valley Settlement Strategy, the South Grafton Heights Precinct Strategy and Clarence Valley Social Plan 2010-2014. Minimal impacts are foreseen as a

result of this amendment, however, it is certain that this planning proposal will require public exhibition.

The Gateway Determination will specify the community consultation that must be undertaken on this Planning Proposal. The consultation will be tailored to specific proposals generally on the basis of a 14 day exhibition period for low impact Planning Proposals and a 28 day exhibition for all other planning proposals.

Low Impact Planning Proposal means a Planning Proposal that, in the opinion of the person making the Gateway Determination: is consistent with the pattern of surrounding land use zones and/or land uses; is consistent with the strategic planning framework; presents no issues with regard to infrastructure servicing; is not a principal Local Environmental Plan; and does not reclassify public land.

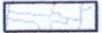
Having regard to the definition of Low Impact Planning Proposals and the scale, nature and issues relating to this Planning Proposal, it is submitted that it would be defined as a Low Impact Planning Proposal. Community consultation will be commenced by the placing of a public notice in the local newspapers and on the website of the Clarence Valley Council and/or Department of Planning. In addition, adjoining landowners will be notified in writing.

Normal exhibition material will be made available by the relevant planning authority during the exhibition period. The community consultation process will be completed when the relevant planning authority has considered any submissions received concerning the proposed Local Environmental Plan and has forwarded those reports to the Department of Planning for final consideration by the Minister.

ANNEXURE A

Existing & Proposed Zoning Plan

Legend

Layer Name			
SOUTH ARM	Suburb Text	☐	☐
SMITH ST	Road Text Urban	☒	☐
SMITH ST	Road Text Rural	☐	☐
DP 809743	Lot Dp Text Urban	☒	☐
DP 809743	Lot Dp Text Rural	☐	☐
	Riverbank Erosion	☐	☐
	Heritage Conservation	☐	☐
	Probable Max Flood	☐	☐
	Drinking Water Catchment	☐	☐
	Coastal Risk	☐	☐
	Land Parcel	☒	☒
	Earthworks Exclusion	☐	☐
	Urban Release Area	☐	☐

Order Label Layer Apply Reset



EXISTING ZONING PLAN (LOT 37 DP 1104240)
- CLARENCE VALLEY LEP 2011

Legend

- ☐ SOUTH ARM Suburb Text
- ☒ SMITH ST Road Text Urban
- ☐ SMITH ST Road Text Rural
- ☒ DP 809743 Lot Dp Text Urban
- ☐ DP 809743 Lot Dp Text Rural
- ☐ Riverbank Erosion
- ☐ Heritage Conservatio
- ☐ Probable Max Flood
- ☐ Drinking Water Catch
- ☐ Coastal Risk
- ☒ Land Parcel
- ☐ Earthworks Exclusion
- ☐ Urban Release Area

Order Label Layer Apply Reset



PROPOSED ZONING PLAN (LOT 37 DP 1104240)
- CLARENCE VALLEY LEP 2011

ANNEXURE B

Existing & Proposed Lot Size Map

Legend

Layer Name	Legend	Visible	Print	Query
SOUTH ARM	Suburb Text	☐	☐	☐
SMITH ST	Road Text Urban	☒	☐	☐
SMITH ST	Road Text Rural	☐	☐	☐
DP 809743	Lot Dp Text Urban	☒	☐	☐
DP 809743	Lot Dp Text Rural	☐	☐	☐
	Riverbank Erosion	☐	☐	☐
	Heritage Conservation	☐	☐	☐
	Probable Max Flood LI	☐	☐	☐
	Drinking Water Catch	☐	☐	☐
	Coastal Risk	☐	☐	☐
	Land Parcel	☒	☒	☐
	Earthworks Exclusion	☐	☐	☐
	Urban Release Area	☐	☐	☐

Order Label Layer Apply Reset



EXISTING LOT SIZE MAP (PART SHT. LSZ -008) - LOT 37 DP 1104240
CLARENCE VALLEY LEP 2011

Legend

☐ SOUTH ARM	Suburb Text	☐	☐
☒ SMITH ST	Road Text Urban	☒	☐
☒ SMITH ST	Road Text Rural	☐	☐
☒ DP 809743	Lot Dp Text Urban	☒	☐
☒ DP 809743	Lot Dp Text Rural	☐	☐
	Riverbank Erosion	☐	☐
	Heritage Conservation	☐	☐
	Probable Max Flood Li	☐	☐
	Drinking Water Catch	☐	☐
	Coastal Risk	☐	☐
	Land Parcel	☒	☒
	Earthworks Exclusion	☐	☐
	Urban Release Area	☐	☐

Order

Label Layer

Apply

Reset



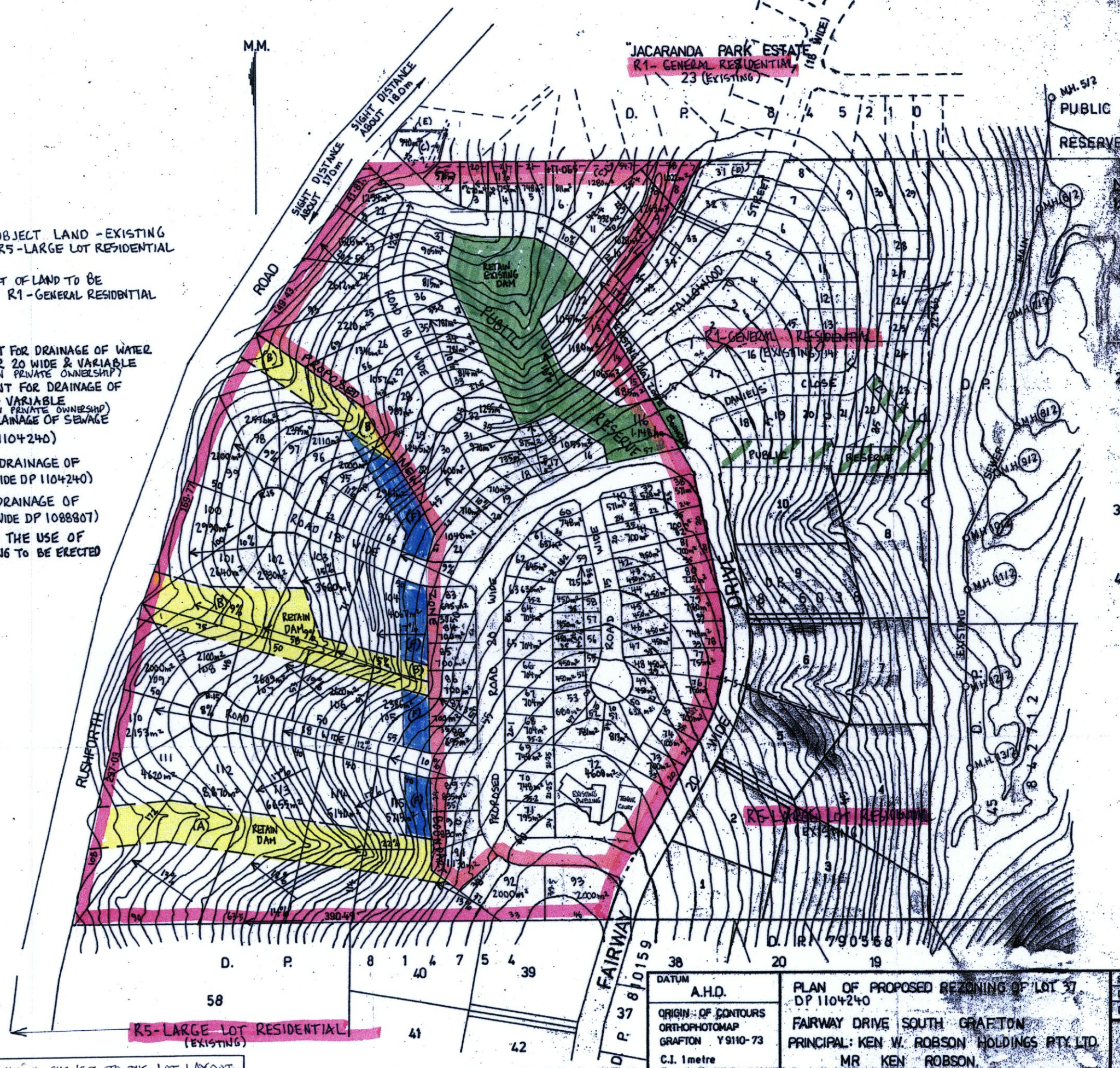
PROPOSED LOT SIZE MAP - LOT 37 DP 1104240

ANNEXURE C

Site Plan of Lot 37 DP 1104240 – Dwg. No. 8432REZ (A)

-  - DENOTES SUBJECT LAND - EXISTING ZONING IS R5-LARGE LOT RESIDENTIAL
-  - DENOTES PART OF LAND TO BE REZONED TO R1-GENERAL RESIDENTIAL

- (A) - PROPOSED EASEMENT FOR DRAINAGE OF WATER & FAUNA CORRIDOR 20 WIDE & VARIABLE (TO BE RETAINED IN PRIVATE OWNERSHIP)
- (B) - PROPOSED EASEMENT FOR DRAINAGE OF WATER 20 WIDE & VARIABLE (TO BE RETAINED IN PRIVATE OWNERSHIP)
- (C) - EASEMENT FOR DRAINAGE OF SEWAGE 3 WIDE (VIDE DP 1104240)
- (D) - EASEMENT FOR DRAINAGE OF WATER 3 WIDE (VIDE DP 1104240)
- (E) - EASEMENT FOR DRAINAGE OF WATER 1 WIDE (VIDE DP 1088807)
- (F) - RESTRICTION ON THE USE OF LAND (NO DWELLING TO BE ERRECTED IN THIS AREA)



NOTES

- THIS PLAN WAS PREPARED FOR THE PURPOSE AND EXCLUSIVE USE OF KEN W. ROBSON HOLDINGS PTY LTD TO ACCOMPANY AN APPLICATION TO CLARKE VALLEY COUNCIL FOR APPROVAL TO REZONE THE LAND DESCRIBED IN THE PLAN AND IS NOT TO BE USED FOR ANY OTHER PURPOSE OR BY ANY OTHER PERSON OR CORPORATION. A FLETCHER & ASSOCIATES ACCEPT NO RESPONSIBILITY FOR ANY LOSS OR DAMAGE SUFFERED HOWEVER ARISING TO ANY PERSON OR CORPORATION WHO MAY USE OR RELY ON THIS PLAN IN CONTRAVENTION OF THE TERMS OF THIS CLAUSE OR CLAUSES 2, 3 OR 4 HEREOF.
- THE CONTOURS SHOWN ON THIS PLAN ARE TAKEN FROM ORTHOPHOTO MAP NO. Y9110-73 AND ARE SUITABLE ONLY FOR THE PURPOSES OF THIS APPLICATION. THE ACCURACY OF THE CONTOURS HAS NOT BEEN VERIFIED AND NO RELIANCE SHOULD BE PLACED UPON SUCH CONTOURS FOR ANY PURPOSE OTHER THAN FOR THE PURPOSE OF THIS APPLICATION FOR SUBDIVISION.
- THE DIMENSIONS, AREA SIZE AND LOCATION OF IMPROVEMENTS AND NUMBER OF LOTS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY AND MAY VARY.
- THIS PLAN MAY NOT BE PHOTOCOPIED UNLESS THIS NOTE IS INCLUDED.

REV. A 20/11/2014 - VARIOUS CHANGES TO THE LOT LAYOUT

DATUM
A.H.D.
ORIGIN OF CONTOURS
ORTHOPHOTOMAP
GRAFTON Y9110-73
C.I. 1metre

PLAN OF PROPOSED REZONING OF LOT 37
DP 1104240
FAIRWAY DRIVE SOUTH GRAFTON
PRINCIPAL: KEN W. ROBSON HOLDINGS PTY LTD
MR KEN ROBSON.

SURVEY	SCALE	DATE	DRAWN BY
DESIGN: B.H.	1:2000	24/6/10	8432REZ

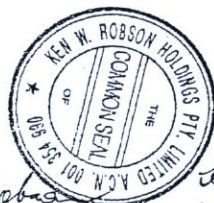
A FLETCHER AND ASSOCIATES PTY LTD
CONSULTING SURVEYORS
88 VICTORIA STREET GRAFTON 2460

ANNEXURE D

Sheet 1 of DP 1104240 showing subject Lot 37

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

THE COMMON SEAL OF KEN W. ROBSON
HONORARY PTY. LIMITED was hereunto
affixed in the presence of:



K. W. Robson
Secretary

Ken W. Robson
Director

THE COMMON SEAL OF LEARON PTY.
LIMITED was hereunto affixed in the
presence of:



Learon Pty. Ltd.
A.C.N. 080 271 730

Australia and New Zealand Banking Group Limited
A.C.N. 005 357 572
By its Attorney
and I, the said
Attorney state that I have not received
any notice of the revocation of the Power of Attorney
registered in the Office of the Registrar General of New Zealand
as Book Entry No. 246 under which this document is
executed.

GARY DIXON
SIGNED AND SEALED by the said Bank
who is personally known to me,
LINDA CHAN
161 MARKET STREET
SYDNEY
BANK OFFICER

Perpetual Trustee Company Limited
Registered under power of attorney dated 12/03/02
Registered number 6042/0033
Assistant Manager
Yvonne Santelakis
Attorney

Department of Lands Approval

I, *David Huxton*, in approving this plan certify
that all necessary approvals in regard to the allocation of the land shown
hereon have been given.

Signature: *David Huxton*
Date: *22 August 2006*
File Number: *2006/0032*
Office: *Di 6025*

Subdivision Certificate

I certify that the provisions of s. 109(1) of the Environmental Planning and
Assessment Act 1979 have been satisfied in relation to the proposed

SUBDIVISION
Insert Subdivision or New Road

Consent Authority: *Clarence Valley Land*
Date of endorsement: *22 August 2006*
Accreditation No.: *2006/0032*
Provision Certificate No.: *2006/0032*
No.: *Di 6025*

When the plan is to be lodged electronically in the Land Titles Office, it
should include a signature in an electronic or digital format approved by
the Registrar-General.

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should include a signature in an electronic or digital format approved by
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the Registrar-General.

When the plan is to be lodged electronically in the Land Titles Office, it
should include a signature in an electronic or digital format approved by
the Registrar-General.

REFERENCE MARKS

No.	BEARING	DISTANCE	DESCR.	SOURCE
a	189°14'05"	1	GIPFD	DP 251512
c	86°21'30"	1	GIPFD	DP 840056
u	36°27'05"	1.025	GIPFD	DP 1088807
v	99°12'05"	1	GIPFD	DP 251512

SURVEYING REGULATION 2001: CLAUSE 32(2)				
MARK	M.G.A. COORDINATES		ZONE	CL. ORD.
	EASTING	NORTHING		
PM 78353	492039.048	6711396.836	56	C U
PM 78354	492091.803	6711463.801	56	C U
PM 72812	492014.384	6712010.745	56	B 2
PM 72813	491754.652	6711730.876	56	B 2

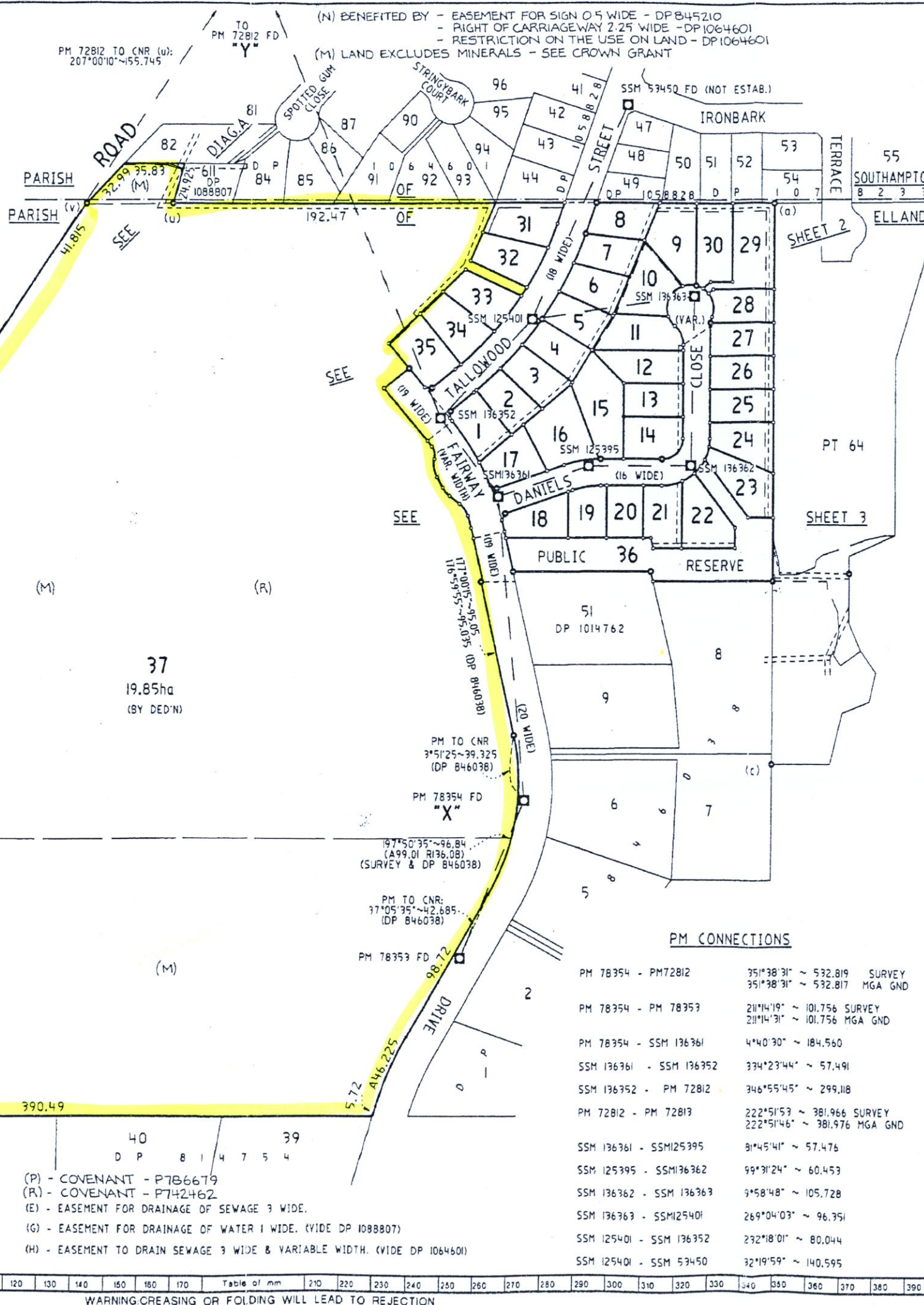
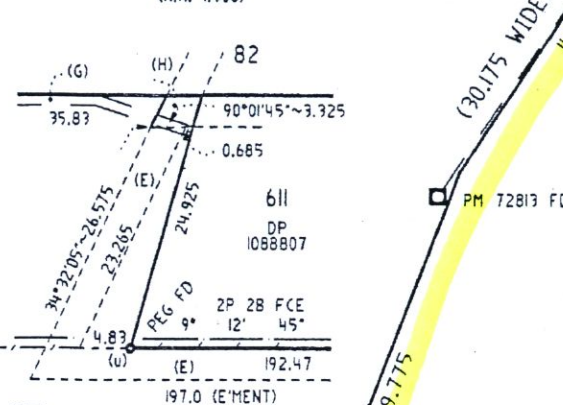
COMBINED SEA LEVEL AND SCALE FACTOR 0.99959

SOURCE: M.G.A. COORDINATES ADOPTED FROM
LIC ON 18 APRIL 2006

NOTE: ALL DISTANCES SHOWN ARE GROUND DISTANCES

DIAGRAM A

(R.R. 1:500)



Registered: *8-11-2006*

C.A. SEE CERTIFICATE

Title System: TORRENS

Purpose: SUBDIVISION

Rel. Map: *943815 99110-7*

Last Plan: DP 1071631

PLAN OF SUBDIVISION OF
LOT 60 DP 1071631 AND
LOT 610 DP 1088807 AND
CREATION OF EASEMENTS
OVER PT LOT 64 DP 1078233

Lengths are in metres. Reduction Ratio 1:2000

LGA: CLARENCE RIVER VALLEY

Locality: GRAFTON RUSHFORTH

Parish: ELLAND, SOUTHAMPTON

County: CLARENCE

This is sheet 1 of my plan in 3 sheets.
(Delete if inapplicable)

Survey Certificate
Surveying Regulation, 2002
BRIAN WILLIAM SAYE
of *A. FLETCHER & ASSOCIATES*
85 VICTORIA STREET, GRAFTON 2460
a surveyor registered under the Surveying Act, 2002, hereby
certify that the survey represented in this plan is accurate and
has been made in accordance with the Surveying
Regulation, 2001 and was completed on *10 MAY 2006*
The survey relates to *LOTS 1 TO 36*
LOT 37 PARTLY COMPILED

Signature: *Brian Saye* Date: *24/5/2006*
Surveyor registered under the Surveying Act, 2002.
Datum Line of Azimuth 'X' - 'Y' Type: URBAN
Insert date of survey.

Plans used in preparation of survey / compilation:
DP 251512
DP 840056
DP 1071631
DP 1058828
DP 1088807
DP 1064601
DP 1078233

PANEL FOR USE ONLY for statements of
intention to dedicate public roads or to create
public reserves, drainage reserves, easements,
restrictions on the use of land or positive
covenants.

Pursuant to S.88B of the Conveyancing
Act, 1919, as amended, it is intended
to create:-

- EASEMENT FOR DRAINAGE OF WATER 5 WIDE
& VARIABLE.
- EASEMENT FOR DRAINAGE OF SEWAGE 3 WIDE.
- EASEMENT FOR DRAINAGE OF WATER 1 WIDE
& VARIABLE.
- EASEMENT FOR DRAINAGE OF WATER 3 WIDE.
- EASEMENT FOR DRAINAGE OF WATER
VARIABLE WIDTH.
- RESTRICTIONS ON THE USE OF LAND.
- RESTRICTIONS ON THE USE OF LAND.

IT IS INTENDED TO DEDICATE:
a) EXTENSION OF TALLOWOOD STREET 18 WIDE,
b) EXTENSION OF FAIRWAY DRIVE 19 WIDE AND
VARIABLE WIDTH, AND
c) DANIELS CLOSE 16 WIDE AND VARIABLE WIDTH
TO THE PUBLIC AS PUBLIC RESERVE.

IT IS INTENDED TO DEDICATE LOT 36 TO THE
PUBLIC AS PUBLIC RESERVE.

ANNEXURE E

Copy of "South Grafton Heights Precinct – A Strategy for the Future"

ANNEXURE F

Clarence Valley Settlement Strategy – March, 1999

ANNEXURE G

Status Report on "Elland" Dip Site from NSW Department of Primary Industries



Home » Animals » Health, disease and pests » Cattle health and disease » Cattle tick » Cattle dipsite locator »

Cattle dip site locator

Dip site location

Dipname	ELLAND	<i>Note: Map references are for 25,000 series topographic ordinates are in AGD66 AMG zone 56.</i>	
Road	RUSHFORTH ROAD		
Town/Locality	SOUTH GRAFTON	Mapsheet	9438-I-S
Shire Council	CLARENCE VALLEY	Easting	49149
Parish	ELLAND	Northing	71115
		County	CLARENCE

Dip site status

IMPORTANT NOTE: Cattle dip site information provided by NSW DPI is based on our own hard copy files representing known data. NSW DPI is not a public consent authority for the development of land containing cattle dip sites. It is the physical conditions of a cattle dip site - including soil, structures, access and usage - may have been changed by extreme natural events or landowner and developer actions that NSW DPI cannot be aware of. For more specific status information a physical inspection should be made and enquiries should always be directed to the appropriate Council.

Dip Status	DECOMMISSION	Licence/Lease Status	LAPSED
Land type	LEASE	Licence/Lease Expiry Date	05/09/1985

Explanation of status terms

Chemical Details

IMPORTANT NOTE: Chemical history has been retrieved from a copied laboratory log. In some cases it may be entries in the hard copy lease folder but generally the chemical record is based on this single lab document. It is there are inaccuracies as well as errors made.

Chemicals used in dip bath	Date first used
ARSENIC	8/59
DDT	11/60
DIOXATHION	10/62
ETHION	8/65

Current Details

Current Chemical	NONE
Dip bath status/contents	CAPPED

Ne

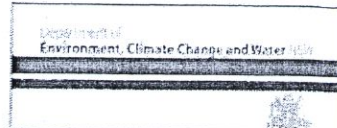
The information contained in this web page is based on knowledge and understanding at the time of writing. However, because knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check the information with the appropriate officer of Industry & Investment NSW or the user's independent adviser.

ANNEXURE H

- AHIMS Search Report
- Grafton Ngerrie Local Aboriginal Land Council Assessment



Aboriginal Heritage Information Unit
43 Bridge Street Hurstville NSW
PO Box 1967, Hurstville NSW 2220
Tel: (02) 95856345 Fax: (02) 95856094
ABN 30 841 387 271
www.environment.nsw.gov.au



Your reference : 8432
Our reference : AHIMS #28317

A. Fletcher & Associates
P.O. Box 1213
Grafton NSW 2460

RECEIVED
08 DEC 2009

BY:

Tuesday, 01 December 2009

Attention: A. Fletcher & Associates

Dear Sir or Madam:

Re: AHIMS Search for the following area at 40 Fairway Drive, South Grafton; Lot 37 in DP 1104240

I am writing in response to your recent inquiry in respect to Aboriginal objects and Aboriginal places registered with the NSW Department of Environment, Climate Change and Water (DECCW) at the above location.

A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) has shown that 0 Aboriginal objects and Aboriginal places are recorded in or near the above location. Please refer to the attached report for details.

The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.

The following qualifications apply to an AHIMS search:

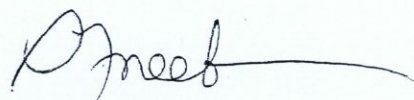
- AHIMS only includes information on Aboriginal objects and Aboriginal places that have been provided to DECCW;
- Large areas of New South Wales have not been the subject of systematic survey or recording of Aboriginal history. These areas may contain Aboriginal objects and other heritage values which are not recorded on AHIMS;
- Recordings are provided from a variety of sources and may be variable in their accuracy. When an AHIMS search identifies Aboriginal objects in or near the area it is recommended that the exact location of the Aboriginal object be determined by re-location on the ground; and
- The criteria used to search AHIMS are derived from the information provided by the client and DECCW assumes that this information is accurate.

All Aboriginal places and Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* (NPW Act) and it is an offence to destroy, damage or deface them without the prior consent of the DECCW Director-General. An Aboriginal object is considered to be known if:

- It is registered on AHIMS;
- It is known to the Aboriginal community; or
- It is located during an investigation of the area conducted for a development application.

If you considering undertaking a development activity in the area subject to the AHIMS search, DECCW would recommend that an Aboriginal Heritage Assessment be undertaken. You should consult with the relevant consent authority to determine the necessary assessment to accompany your development application.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Freeburn', with a long horizontal line extending to the right.

Freeburn, Sharlene
Administrator
Aboriginal Heritage Information Unit
Information Systems and Assessment Section
Aboriginal Heritage Operation Branch
Culture and Heritage Division
Department and Environment, Climate Change and Water (DECCW)
Phone: (02) 9585 6471
Fax: (02) 9585 6094

List of Sites (List - Short)

Lot 37 in DP 1104240 - 40 Fairway Dr, Sth Grafton

Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 491453, Easting to = 492070, Northing From = 6711080, Northing to = 6711773, Requestor like 4453%, Service ID = 28317, Feature Search Type = AHIMS Features

Site ID	Site Name	Datum	Zone	Easting	Northing	Context	Site Features	Site Types	Recording	Reports	State Arch. Box No
								(recorded prior to June 2001)	(Primary)	(Catalogue Number)	(for office use only)

No Site Recorded

GRAFTON NGERRIE LOCAL



ABORIGINAL LAND COUNCIL

PHONE: 02 6642 6020
FAX: 02 6642 6994
EMAIL: gnlalc@bigpond.com

50 WHARF ST
SOUTH GRAFTON
PO BOX 314
SOUTH GRAFTON,
NSW 2460

A. Fletcher and Associates PTY LTD
Po Box 1213 GRAFTON NSW 2460
On Behalf of your client Mr Ken Robson

Friday, 15 January 2010

ABORIGINAL CULTURAL SIGNIFICANCE ASSESSMENT

**RE: PROPOSED REZONING APPLICATION OVER LOT 37 DP 1104240 40 FAIRWAY
DRIVE, SOUTH GRAFTON NSW 2460.**

To whom it may concern,

I am writing in regards to the Cultural Heritage significance assessment that was completed in December 2009.

PURPOSE OF THIS ASSESMENT:

Is to determine whether any features of Aboriginal Cultural significance occurred in the study area for the project you propose and whether the significance would be affected by the proposed project/development.

PROJECT DETAILS:

The proposed works aim to rezone the above mentioned land.

LOCATION OF STUDY AREA:

Affected properties: Lot 37 DP 1104240 – 40 Fairway Drive South Grafton NSW 2460.

ARE ANY OF THE AFFECTED PROPERTIES UNDER A LAND CLAIM:

No

NAME OF ABORIGINAL SITE OFFICERS COMPLETEING THE ASSESMENT & UNDERTAKING THE SITE SURVEY:

Senior Head Site Officer: Rodney Duroux,

NAME OF ABORIGINAL ORGANISATION REPRESENTED BY THIS STUDY:

GRAFTON NGERRIE LALC

DATE OF SURVEY/INSPECTION:

December 2009

INFORMATION ON THE SITE SURVEY:

SURVEY RESULTS:

Our site Officer has inspected the above mentioned properties and has confirmed through an AHIMS site search that it is unlikely that the developments would affect any significant known Aboriginal Cultural Artefacts or Heritage.

Therefore we have no objections to the proposed development.

****PLEASE REMEMBER IF YOU COME ACROSS ANY THING YOU MAY IDENTIFY AS BEING AN ARTEFACT , PLEASE STOP WORK AND CALL OUR OFFICE IMMEDIATELY.

THIS ASSESMENT HAS BEEN COMPLETED BY:

Rodney Duroux

POSITION: Senior Site Officer

Yours sincerely,

Rodney Duroux

Signed on Behalf,



Wesley Fernando
CHIEF EXECUTIVE OFFICER

ANNEXURE I

Existing and Proposed Height of Buildings Maps



Clarence Valley
Local
Environmental
Plan 2011

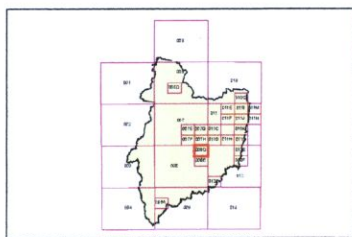
Height of Buildings Map -
Sheet HOB_008D

Maximum Building Height (m)

F	6.5
J	9
K	10
M	12
N	14

Cadastre

Cadastre 27/04/2011 © NSW LPMA



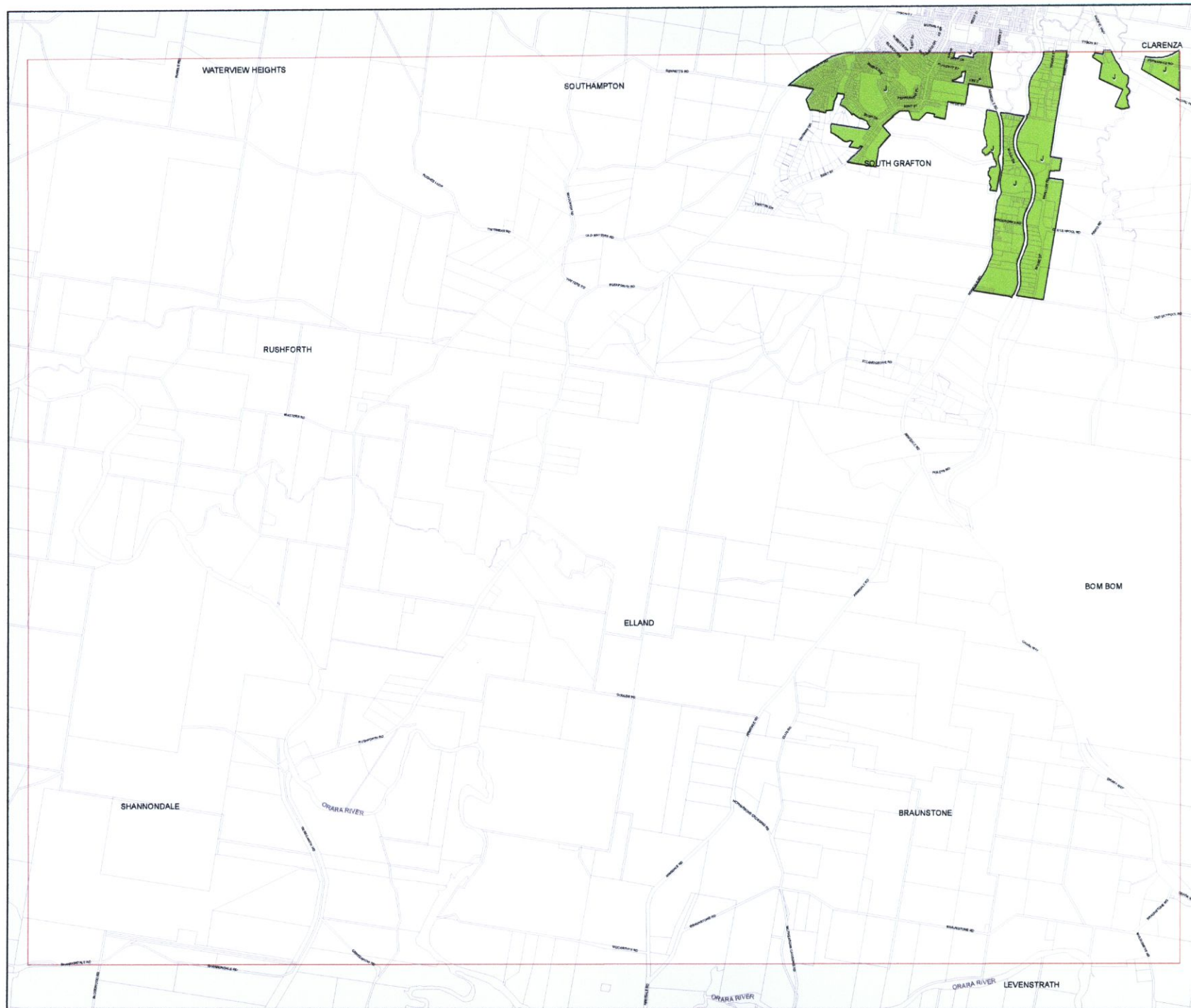
N

0 0.75 1.5
Kilometres

Scale 1:40,000 @ A3

Projection: GDA 1994
MGA Zone 56

Map identification number:
1730_COM_HOB_008D_040_20111110



EXISTING HEIGHT OF BUILDINGS MAP



Clarence Valley Local Environmental Plan 2011

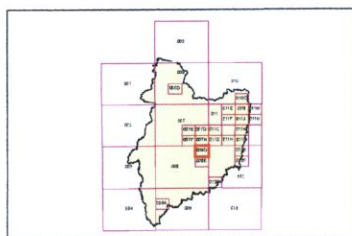
Height of Buildings Map - Sheet HOB_008D

Maximum Building Height (m)

F	6.5
J	9
K	10
M	12
N	14

Cadastre

Cadastre 27/04/2011 © NSW LPMA



N

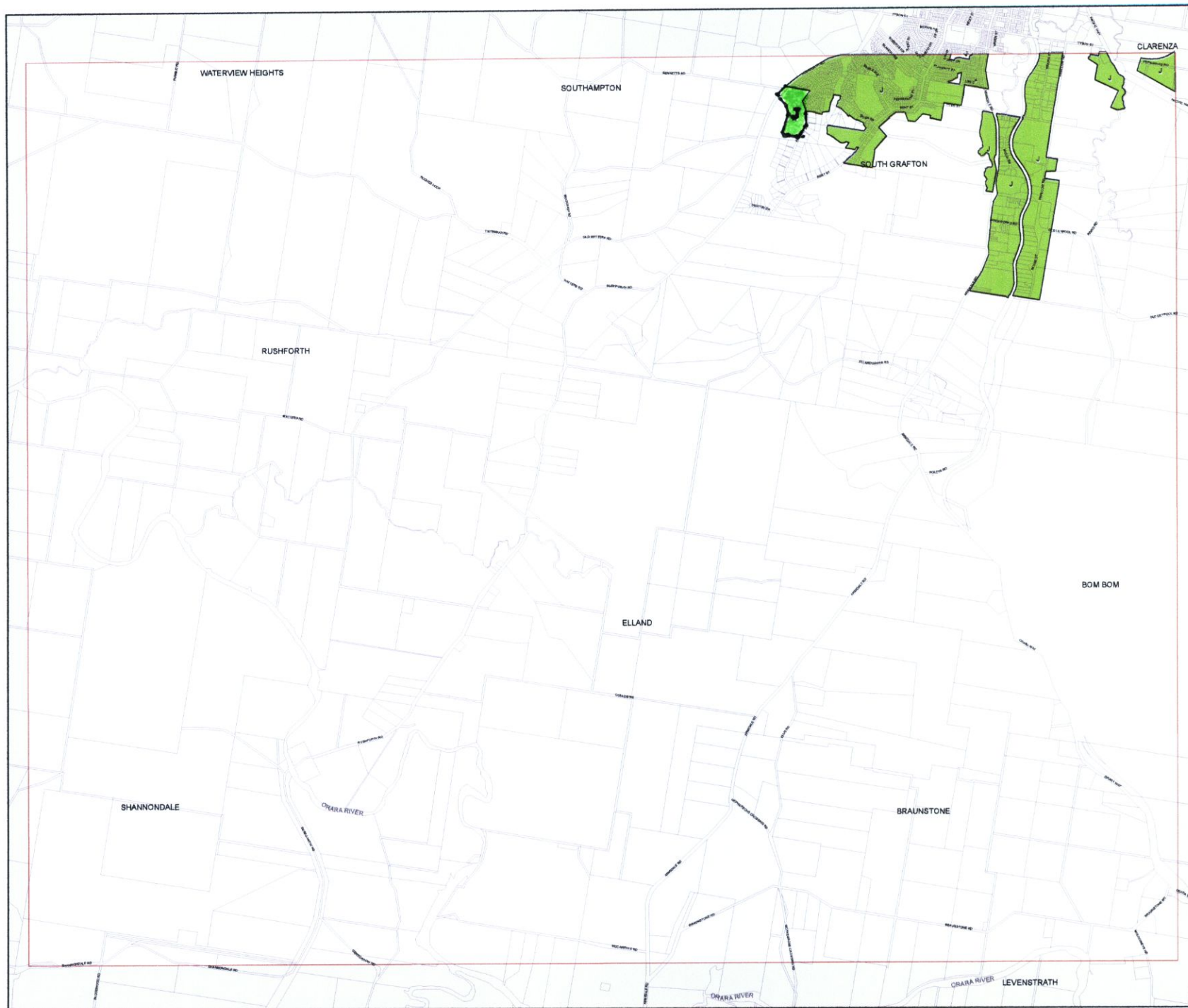
0 0.75 1.5
Kilometres

Scale: 1:40,000 @ A3

Projection: GDA 1994
MGA Zone 56

Map identification number:

1730_COM_HOB_008D_040_20111110



PROPOSED HEIGHT OF BUILDINGS MAP

ANNEXURE J

Phase 1 Site Contamination Assessment Report by
Regional Geotechnical Solutions, dated 9th June, 2016

Ken W. Robson Holdings Pty Ltd

Proposed Residential Subdivision

40 Fairway Drive, South Grafton

Phase 1 Site Contamination Assessment Report

Report No. RGS30861.1-AB

9 June 2016

REGIONAL
GEOTECHNICAL SOLUTIONS





Manning-Great Lakes

Port Macquarie

Coffs Harbour

RGS30861.1-AB

9 June 2016

Ken W. Robson Holdings Pty Ltd
C/o A Fletcher and Associates Pty Ltd
PO Box 1213
GRAFTON NSW 2460

Attention: Andrew Fletcher

Dear Andrew

RE: Proposed Residential Subdivision – 40 Fairway Drive, South Grafton
Phase 1 Site Contamination Assessment Report

Regional Geotechnical Solutions Pty Ltd (RGS) has completed a Phase 1 site contamination assessment at 40 Fairway Drive South Grafton (Lot 37, DP 1104240) where it is proposed to subdivide the lot for residential development. The results of the investigation are presented herein.

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

For and on behalf of

Regional Geotechnical Solutions Pty Ltd

A handwritten signature in blue ink, appearing to read 'S. Keen', is positioned above the printed name of Simon Keen.

Simon Keen
Geotechnical Engineer



Table of Contents

1	INTRODUCTION	1
2	ASSESSMENT METHODOLOGY	1
3	SITE SETTING & SITE HISTORY	2
3.1	Surface Conditions	2
3.2	Site History	4
3.2.1	Local Residents & Knowledge	4
3.2.2	NSW DPI Cattle Dip Site Locator	4
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Figure 1 Site Plan

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Appendix A Laboratory Test Result

Appendix B Results of Site History Search



1 INTRODUCTION

As requested, Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken a Phase 1 Site Contamination Assessment (SCA) at the site of a proposed 115 lot residential and rural residential subdivision that is proposed for 40 Fairway Drive South Grafton (Lot 37 DP 1104240). This report presents the results of the assessment.

The site has previously and is currently primarily used for grazing with the exception of the southwest corner of the site where an existing residence and associated structures. A disused grass airstrip is understood to have been situated on the ridge with an associated disused building present. A capped and decommissioned cattle dip is located on an adjacent property near the southwest corner of the site.

The purpose of the preliminary Phase 1 SCA was to assess the type and extent of potential contamination that may be present and provide guidance on any further investigation work and site remediation that may be required if contamination is identified. The results of the soil analysis have been assessed against the criteria for Residential 'A' land use in accordance with the '*National Environmental Protection Measure (NEPM) 2013 – Volume 2: Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater*'.

2 ASSESSMENT METHODOLOGY

The site contamination assessment was undertaken in accordance with the relevant sections of the NSW EPA, *Guidelines for Consultants Reporting on Contaminated Sites*, and involved the following process:

- A brief study of site history, with the aim of identifying past activities on or near the site that might have the potential to cause contamination;
- Search of Environmental Protection Authority (EPA) website for any contamination notices for the site;
- Site walkover to assess visible surface conditions and identify any evidence of contamination, or past activities that may cause contamination; and
- Excavation of test pits and collection of samples for laboratory analysis.

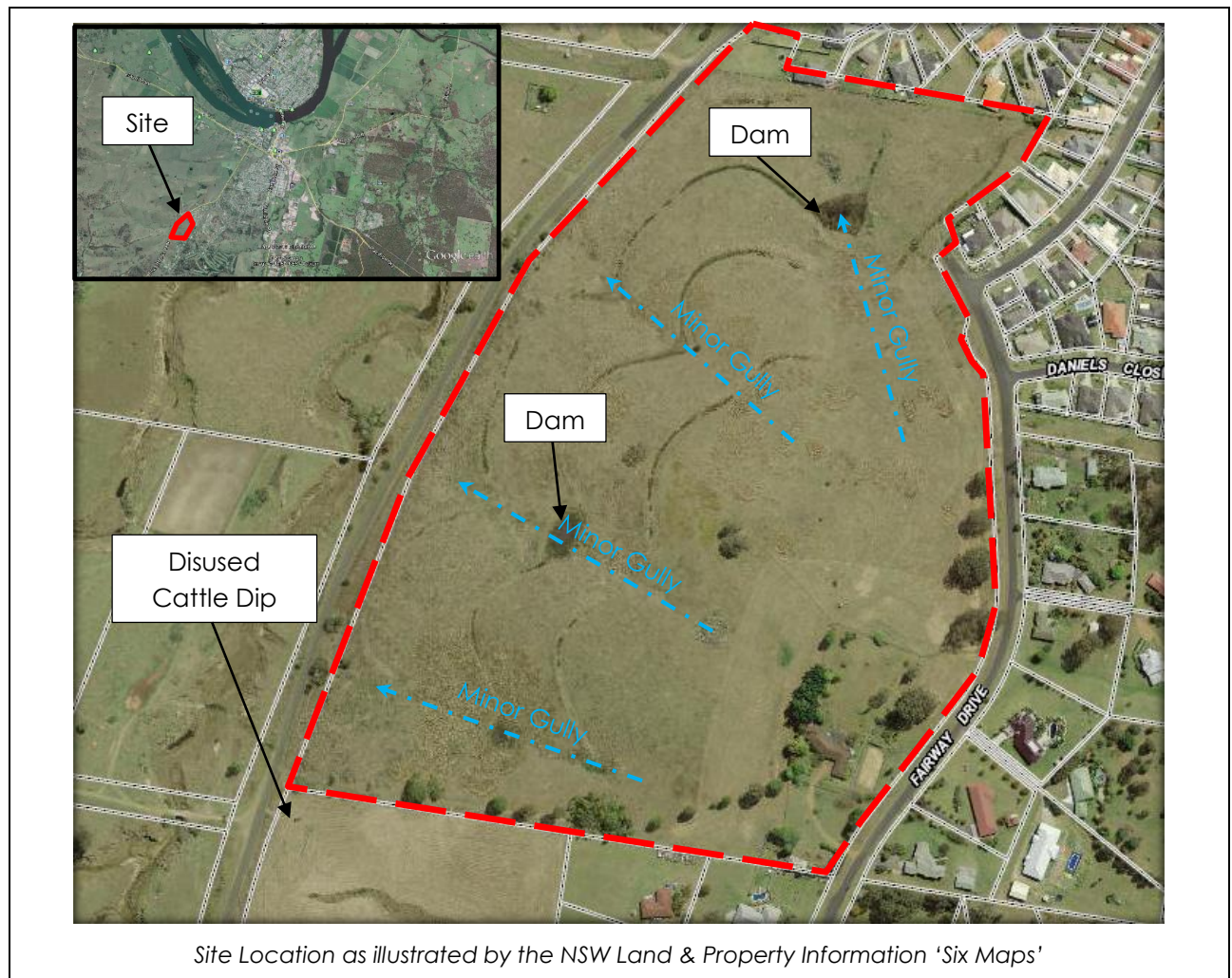
The assessment has been undertaken on the entire 20Ha site. The sampling and laboratory analysis focused on the identified as 'Areas of Concern' as discussed in Section 3.3. These areas included the southwest corner near the disused cattle dip and the area along the ridge in the southeast of the site where the current house and the disused airstrip and associated structures are located.



3 SITE SETTING & SITE HISTORY

3.1 Surface Conditions

The irregular shaped site is bound by Rushforth Road to the west, residential lots to the north, Fairway Drive and residential lots to the east, and rural-residential lots and farmland to the south. An aerial photograph of the site is presented below.



The site (Lot 37, DP104240, 40 Fairway Drive) is located within a region characterised by gently undulating residual slopes with a north-south trending ridgeline running along the east of the site. The remainder of the site grades down to the west and northwest at between about 5 and 15°. Four minor gullies are located on the site as illustrated above with two small farm dams are located on the site. An existing house, tennis court and associated minor structures are located in the southeast of the site. One of the two buildings associated with the disused airstrip in the southeast corner has been demolished while the other remains.

A concrete capped concrete lined cattle dip is located on the neighbouring property near the south-western corner of the lot as illustrated above.



Materials observed over the site include topsoil and the natural residual clay soils. No soil staining or odours that could signify potential soil contamination were observed.

Typical site photographs are presented below.



Looking west from on top of the ridgeline in the central east of the site



Looking east towards the disused shed associated with the former airstrip



Looking south at a former cattle trough on the western side of the existing house



Looking south around the western end of the existing shed in the southeast of the site



Looking south around the eastern end of the existing shed in the southeast of the site



Disused oil drum located near the shed associated with former airstrip

3.2 Site History

3.2.1 Local Residents & Knowledge

Discussions with local residents indicate that the site has been primarily used as grazing land with the current owners having resided at the property since 1976. The previous owner of the land used to operate a small grass airstrip off the ridge where the existing dwelling is located, with superphosphate being loaded into a small plane from one of two sheds on the property. One of the sheds is still located in the southeast corner of the site with the other shed having been demolished during the extension of Fairway Drive. With the exception of the above, it is understood that the site has only ever been used for grazing purposes since the 1930's.

3.2.2 NSW DPI Cattle Dip Site Locator

The disused "Eland" dip site is located near the southwest corner of the site on an adjoining property. RGS has previously undertaken a site contamination assessment of the dip site which encountered contamination in the immediate vicinity of the dip. No contamination was found to radiate away from the dip site including along the northern adjoining property boundary.

The dip site is registered with the NSW Department of Primary Industries with the licence being documented as expiring on 5 September 1985. The document details the chemicals used within the dip and the date of commencement for each chemical. The chemicals included arsenic, DDT, dioxathion and ethion. The dip has been since capped with concrete.

A copy of the dip records as listed on the NSW department of Primary Industries webpage is provided in Appendix B.



3.2.3 NSW EPA Records

A check with the NSW Office of Environment and Heritage website (www.environment.nsw.gov.au) revealed that no notices have been issued on the site under the Contaminated Land Management Act (1997).

3.3 Areas of Environmental Concern

Based on the site observations and knowledge obtained about site activities as outlined above, potential Areas of Concern and Chemicals of Concern were identified for the assessment as outlined in Table 1.

Table 1: Areas of Concern & Chemicals of Concern

Area of Concern	Mode of Potential Contamination	Chemicals of Concern
Soil around the old shed associated with the former airstrip	Spillage of superphosphate, leakage of fuels, potential storage of contaminants	OP/OC Pesticides, heavy metals, TRH
Eastern ridgeline where former airstrip was located and the majority of potential site contaminating activities are likely to have occurred	Spillage of superphosphate, leakage of fuels, potential storage of contaminants	OP/OC Pesticides, heavy metals, TRH
Soil in the southwest corner of the site close to the dip site on the neighbouring property	Spillage of contaminants	OP/OC Pesticides, heavy metals

3.4 Subsurface Conditions

The 1:250,000 Grafton Geological Map indicates the site is underlain by the Grafton formation which comprises sandstone, siltstone, claystone and minor coal.

The test pits generally encountered about 0.1m of clayey silt topsoil overlying medium plasticity stiff to very stiff residual silty clay.

Groundwater inflows were not encountered at any of the sample locations. A groundwater bore search on the NSW Water Information website, (<http://allwaterdata.water.nsw.gov.au/water.stm>), indicates that the closest groundwater bore to the site is located about 1.2km to the northeast.

4 LABORATORY ANALYSIS

Ten soil samples (plus one duplicate) were transported under chain-of-custody to ALS, a NATA accredited specialist chemical testing laboratory. The samples were analysed for the following suite of contaminants:

- Heavy Metals - Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc;
- Polychlorinated Biphenyls (PCB);
- Polycyclic Aromatic Hydrocarbons (PAH);



- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethyl-Benzene and Xylene (BTEX); and
- Organochlorine (OC) and Organophosphorous (OP) pesticides.

The results are presented in Appendix A.

5 QUALITY CONTROL

Samples were obtained using industry accepted protocols for sample treatment, preservation, and equipment decontamination. One duplicate sample was submitted to the laboratory for analysis. Comparison of the test results on the primary and duplicate sample generally show good correlation. The primary and corresponding duplicate sample are identified below.

- Primary S10 (0.1 – 0.2m), duplicate D1.

In addition to the field QC procedures, the laboratory conducted internal quality control testing including surrogates, blanks, and laboratory duplicate samples. The results are presented with the laboratory test results in Appendix A.

All laboratory quality control data is within acceptable limits for the tests carried out. Therefore on the basis of the results of the field and laboratory quality control procedures and testing the data is considered to reasonably represent the concentrations of contaminants in the soils at the sample locations at the time of sampling and the results can be adopted for this assessment.

6 SITE CONTAMINATION ASSESSMENT

6.1 Guidelines and Assessment Criteria - Soils

The assessment was carried out in general accordance with the '*National Environment Protection (Assessment of Site Contamination) Measure 2013*' (NEPM). The NEPM document provides a range of guidelines for assessment of contaminants for various land use scenarios. In accordance with the NEPM guideline the following criteria for a residential site were adopted for this assessment:

- Health Investigation Levels (HILs) for Residential A land use were used to assess the potential human health impact of heavy metals and PAH;
- Health Screening Levels (HSLs) for coarse textured (sand or gravel) or fine textured (silt or clay) soils on a Residential A site were adopted as appropriate for the soils encountered to assess the potential human health impact of petroleum hydrocarbons and BTEX compounds;
- Ecological Investigation Levels (EILs) for residential land use were used for evaluation of the potential ecological / environmental impact of heavy metals and PAH; and
- Ecological Screening Levels (ESLs) for coarse textured (sand) or fine textured (silt or clay) soils on a residential site were adopted as appropriate for the soils encountered, to assess the



potential ecological / environmental impact of petroleum hydrocarbons and BTEX compounds.

In accordance with NEPM 2013, exceedance of the criteria does not necessarily deem that remediation or clean-up is required, but is a trigger for further assessment of the extent of contamination and associated risks.

The adopted criteria are presented on the results summary (Table A1) presented in Appendix A.

6.2 Test Results

An evaluation of the laboratory test results against the adopted soil assessment criteria is provided below:

- Results of heavy metal analysis revealed some slightly elevated levels, however, the concentrations were well below the adopted assessment criteria;
- Results of BTEX analysis revealed concentrations below the level of reporting in all samples tested and therefore below the adopted assessment criteria;
- Results of TRH C6-C10 (F1) analysis revealed concentrations below the level of reporting in all samples tested and therefore below the adopted assessment criteria;
- Results of TRH C10-C16 (F2) analysis revealed concentrations below the level of reporting in all samples tested and therefore below the adopted assessment criteria;
- Results of TRH C16-C34 (F3) analysis revealed some slightly elevated levels, however, the concentrations were well below the adopted assessment criteria for a fine grained soil;
- Results of TRH C34-C40 (F4) analysis revealed some slightly elevated levels, however, the concentrations were well below the adopted assessment criteria for a fine grained soil;
- Results of PAH analysis revealed concentrations below the level of reporting in all samples tested and therefore below the adopted assessment criteria; and
- Results of organochlorine and organophosphorus pesticide analysis recorded values below the level of recording for all samples tested.

7 CONCLUSIONS

Samples were collected from twenty locations across the site and ten samples were selected on the basis of materials and sample location and analysed for a broad suite of commonly encountered contaminants. The soil analysis indicates that in all samples tested no analytes exceeded the adopted assessment criteria for 'Residential A' land use.

On the basis of the assessment undertaken the material meets the requirements for a 'Residential A' site as detailed in the NEPM 2013 guidelines. Further assessment regarding site contamination is not required.



8 LIMITATIONS

The sampling and testing regime has broadly covered the site, however, the potential for isolated areas of contamination remains.

The findings of this assessment are the result of sampling and analysis at specific locations using methodologies adopted in accordance with accepted industry practices and standards. It is considered that the results represent a reasonable interpretation of the conditions at the site in relation to contamination resulting from past site activities. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

Should conditions that differ from those described in this report be encountered during construction such as areas exhibiting signs of possible contamination, odours or foreign material then RGS should be contacted immediately.

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

For and on behalf of

Regional Geotechnical Solutions Pty Ltd

Simon Keen

Geotechnical Engineer



Figures



	Client:	Ken W. Robson Holdings Pty Ltd	Job No.	RGS30861.1
	Project:	Site Contamination Assessment	Drawn By:	SK
		40 Fairway Drive, South Grafton	Scale:	As Shown
	Title:	Sample Location Plan	Date:	1-Jun-16
			Drawing No.	Figure 1



Appendix A

Laboratory Test Results

TABLE A1 - RESULTS OF CHEMICAL ANALYSES (concentrations in mg/kg) 'Residential A' Site.

National Environmental Protection Measure (NEPM) 2013 – Volume 2: Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater

Report No. RGS30861.1

Site Location: 40 Fairway Drive, South Grafton

Location	Depth (m)	Material	Grain Size	TOTAL RECOVERABLE HYDROCARBONS					PAH		OC-OP PESTICIDE	BTEX	PCB	HEAVY METALS							
				C6-C10	C10-C16	C16-C34	C34-C40	TOTAL 10-40	Total	b-a-p				As	Cd	Cr*	Cu	Pb	Hg	Ni	Zn
Health Based Soil investigation Level									300	3	6	NL	1	100	20	100	6000	300	40	400	7400
Ecological Investigation Level (EIL):																					
Ecological Screening Level (ESL):				180	120	300	2800			0.7		50		Coarse grained soil in mg/kg							
				180	120	1300	5600			0.7		65		Fine grained soil in mg/kg							

S1	0.0 - 0.1	Topsoil	Fine	<10	<50	<100	<100	<50	<0.5	<0.5	<0.2	<1	<0.1	6	<1	4	17	11	<0.1	2	34
S4	0.0 - 0.1	Topsoil	Fine	<10	<50	170	<100	170	<0.5	<0.5	<0.2	<1	<0.1	6	<1	4	23	16	<0.1	3	30
S10	0.1 - 0.2	Clay	Fine	<10	<50	<100	<100	<50	<0.5	<0.5	<0.2	<1	<0.1	6	<1	5	26	11	<0.1	2	15
D1	0.1 - 0.2	Clay	Fine	<10	<50	<100	<100	<50	<0.5	<0.5	<0.2	<1	<0.1	9	<1	7	30	13	<0.1	2	16
S11	0.1 - 0.2	Clay	Fine	<10	<50	140	<100	140	<0.5	<0.5	<0.2	<1	<0.1	7	<1	5	33	9	<0.1	<2	16
S13	0.2 - 0.25	Clay	Fine	<10	<50	<100	<100	<50	<0.5	<0.5	<0.2	<1	<0.1	8	<1	5	28	12	<0.1	3	24
S15	0.2 - 0.3	Clay	Fine	<10	<50	940	380	1320	<0.5	<0.5	<0.2	<1	<0.1	6	<1	6	16	29	<0.1	3	64
S16	0.0 - 0.1	Topsoil	Fine	<10	<50	<100	<100	<50	<0.5	<0.5	<0.2	<1	<0.1	6	<1	6	12	12	<0.1	3	42
S18	0.0 – 0.1	Topsoil	Fine	<10	<50	140	<100	140	<0.5	<0.5	<0.2	<1	<0.1	8	<1	7	34	12	<0.1	3	25
S19	0.1 – 0.2	Clay	Fine	----	----	----	----	----	<0.5	<0.5	<0.2	<1	----	6	<1	11	15	14	----	3	34
S20	0.1 – 0.2	Clay	Fine	<10	<50	<100	<100	<50	<0.5	<0.5	<0.2	<1	<0.1	7	<1	4	22	17	<0.1	3	36

BLUE - Denotes concentration exceeds health based guideline for Residential A

GREEN - Denotes concentration exceeds ecological guideline for Residential A

ORANGE - Denotes concentration exceeds health and ecological based guideline

CERTIFICATE OF ANALYSIS

Work Order : **ES1608055**
Client : **REGIONAL GEOTECHNICAL SOLUTION**
Contact : MR ADAM HOLZHAUSER
Address : 44 BENT STREET
 WINGHAM NSW, AUSTRALIA 2429
Telephone : +61 02 6553 5641
Project : RGS3861.1 PROPOSED RESIDENTIAL SUBDIVISION
Order number : ----
C-O-C number : ----
Sampler : ----
Site : SOUTH GRAFTON
Quote number : ----
No. of samples received : 11
No. of samples analysed : 11

Page : 1 of 15
Laboratory : Environmental Division Sydney
Contact :
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 14-Apr-2016 09:25
Date Analysis Commenced : 15-Apr-2016
Issue Date : 21-Apr-2016 14:53

NATA Accredited Laboratory 825
 Accredited for compliance with
 ISO/IEC 17025.



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
RICHARD TEA	Lab technician	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.

Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S1 0	S4 0.1	S10 0.2	S11 0.1	S13 0.2
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-001	ES1608055-002	ES1608055-003	ES1608055-004	ES1608055-005
				Result	Result	Result	Result	Result
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	19.6	12.8	15.4	17.9	19.6
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	6	6	7	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	4	4	5	5	5
Copper	7440-50-8	5	mg/kg	17	23	26	33	28
Lead	7439-92-1	5	mg/kg	11	16	11	9	12
Nickel	7440-02-0	2	mg/kg	2	3	2	<2	3
Zinc	7440-66-6	5	mg/kg	34	30	15	16	24
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S1 0	S4 0.1	S10 0.2	S11 0.1	S13 0.2
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-001	ES1608055-002	ES1608055-003	ES1608055-004	ES1608055-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S1 0	S4 0.1	S10 0.2	S11 0.1	S13 0.2
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-001	ES1608055-002	ES1608055-003	ES1608055-004	ES1608055-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	120	<100	100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	120	<50	100	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	170	<100	140	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	170	<50	140	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S1 0	S4 0.1	S10 0.2	S11 0.1	S13 0.2
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-001	ES1608055-002	ES1608055-003	ES1608055-004	ES1608055-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	97.0	91.1	96.9	86.8	86.8
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	94.1	86.6	89.7	81.6	85.9
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	123	110	107	96.0	95.9
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	77.6	84.8	92.4	82.6	84.4
2-Chlorophenol-D4	93951-73-6	0.5	%	81.2	84.2	90.9	86.4	85.8
2,4,6-Tribromophenol	118-79-6	0.5	%	56.2	68.4	69.2	76.0	63.5
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	84.1	83.1	92.2	87.2	88.9
Anthracene-d10	1719-06-8	0.5	%	85.2	84.7	93.5	90.8	93.0
4-Terphenyl-d14	1718-51-0	0.5	%	95.9	94.2	104	99.8	102
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	94.1	99.9	96.6	106	98.1
Toluene-D8	2037-26-5	0.2	%	123	123	117	128	116
4-Bromofluorobenzene	460-00-4	0.2	%	123	123	118	124	116



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S15 0.2	S16 0.1	S18 0	S20 0.2	D1
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-006	ES1608055-007	ES1608055-008	ES1608055-009	ES1608055-010
				Result	Result	Result	Result	Result
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	14.8	12.0	15.4	15.8	15.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	6	8	7	9
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	6	7	4	7
Copper	7440-50-8	5	mg/kg	16	12	34	22	30
Lead	7439-92-1	5	mg/kg	29	12	12	17	13
Nickel	7440-02-0	2	mg/kg	3	3	3	3	2
Zinc	7440-66-6	5	mg/kg	64	42	25	36	16
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S15 0.2	S16 0.1	S18 0	S20 0.2	D1
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-006	ES1608055-007	ES1608055-008	ES1608055-009	ES1608055-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S15 0.2	S16 0.1	S18 0	S20 0.2	D1
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-006	ES1608055-007	ES1608055-008	ES1608055-009	ES1608055-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	480	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	650	<100	110	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	1130	<50	110	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	940	<100	140	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	380	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	1320	<50	140	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S15 0.2	S16 0.1	S18 0	S20 0.2	D1
Client sampling date / time				[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]	[13-Apr-2016]
Compound	CAS Number	LOR	Unit	ES1608055-006	ES1608055-007	ES1608055-008	ES1608055-009	ES1608055-010
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	71.0	81.0	86.0	79.0	92.0
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	86.9	85.7	87.1	82.3	89.2
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	96.1	100	109	92.7	97.2
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	78.6	93.7	85.5	77.4	79.1
2-Chlorophenol-D4	93951-73-6	0.5	%	80.0	92.6	85.2	77.9	82.5
2,4,6-Tribromophenol	118-79-6	0.5	%	70.7	66.7	73.6	58.4	61.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	80.6	93.5	84.9	79.1	85.5
Anthracene-d10	1719-06-8	0.5	%	78.7	97.9	88.8	82.8	90.4
4-Terphenyl-d14	1718-51-0	0.5	%	87.7	106	99.0	90.2	99.4
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	110	119	116	97.8	111
Toluene-D8	2037-26-5	0.2	%	127	127	127	107	117
4-Bromofluorobenzene	460-00-4	0.2	%	127	126	124	106	116



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S19	----	----	----	----
				0.2	----	----	----	----
Client sampling date / time				[13-Apr-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1608055-011	-----	-----	-----	-----
				Result	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	14.0	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	11	----	----	----	----
Copper	7440-50-8	5	mg/kg	15	----	----	----	----
Lead	7439-92-1	5	mg/kg	14	----	----	----	----
Nickel	7440-02-0	2	mg/kg	3	----	----	----	----
Zinc	7440-66-6	5	mg/kg	34	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S19	----	----	----	----
				0.2				
Client sampling date / time				[13-Apr-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1608055-011	-----	-----	-----	-----
				Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	<0.05	----	----	----	----
	0-2							
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	----	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	----	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S19 0.2	----	----	----	----
Client sampling date / time					[13-Apr-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1608055-011	-----	-----	-----	-----
				Result	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		----	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				S19	----	----	----	----
				0.2				
Client sampling date / time				[13-Apr-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1608055-011	-----	-----	-----	-----
				Result	----	----	----	----
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	----	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	----	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	83.8	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	96.0	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	----	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	----	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130



Appendix B

Results of Site History Search



Home » Animals » Health, disease and pests » Cattle health and disease » Cattle tick » Cattle dipsite locator »

Cattle dip site locator

Dip site location

Dipname	ELLAND	<i>Note: Map references are for 25,000 series topographic coordinates are in AGD66 AMG zone 56.</i>	
Road	RUSHFORTH ROAD		
Town/Locality	SOUTH GRAFTON	Mapsheet	9438-I-S
Shire Council	CLARENCE VALLEY	Easting	49149
Parish	ELLAND	Northing	71115
		County	CLARENCE

Dip site status

IMPORTANT NOTE: Cattle dip site information provided by NSW DPI is based on our own hard copy files representing known data. NSW DPI is not a public consent authority for the development of land containing cattle dip sites. It is the physical conditions of a cattle dip site - including soil, structures, access and usage - may have been changed by extreme natural events or landowner and developer actions that NSW DPI cannot be aware of. For more specific status information a physical inspection should be made and enquiries should always be directed to the appropriate Council.

Dip Status	DECOMMISSION	Licence/Lease Status	LAPSED
Land type	LEASE	Licence/Lease Expiry Date	05/09/1985

Explanation of status terms

Chemical Details

IMPORTANT NOTE: Chemical history has been retrieved from a copied laboratory log. In some cases it may be entries in the hard copy lease folder but generally the chemical record is based on this single lab document. It is there are inaccuracies as well as errors made.

Chemicals used in dip bath	Date first used
ARSENIC	8/59
DDT	11/60
DIOXATHION	10/62
ETHION	8/65

Current Details

Current Chemical	NONE
Dip bath status/contents	CAPPED

Ne

The information contained in this web page is based on knowledge and understanding at the time of writing. However, because knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check current information with the appropriate officer of Industry & Investment NSW or the user's independent adviser.