Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Prepared for:

ProTen Tamworth Pty Limited

Prepared by:

August 2021

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

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ABBREVIATIONS

Abbreviation	Definition
ACHMP	Aboriginal Cultural Heritage Management Plan
Blue Book	*Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom 2004)
CCP	Community Consultation Plan
CEMP	Construction Environment Managemental Plan
Council	Tamworth Regional Council
CSS	Construction Site Supervisor
CTMP	Construction Traffic Management Plan
DP	Deposited Plan
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EME	EME Advisory
ENM	excavated natural material
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ESCP	erosion and sediment control plan
NCM	National Construction Manager
OEH	(former) Office of Environment and Heritage
POEO Act	*Protection of the Environment Operations Act 1997*
PPU	poultry production unit
RAP	(Revised) Remedial Action Plan
ROM	Regional Operations Manager
RTS	Response to Submissions
SHEQ	Safety, Health, Environment and Quality
SLR	SLR Consulting Australia
SSD	State significant development
VENM	virgin excavated natural material
WAMC	Water Administration Ministerial Corporation

1 INTRODUCTION

1.1 Development Consent

ProTen Tamworth Pty Limited (ProTen) obtained Development Consent SSD 7704 from the Department of Planning, Industry and Environment (DPIE) (as delegate for the Minister for Planning and Public Spaces) on 16 April 2020 under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate an intensive poultry broiler production farm within a rural area known as Rushes Creek in the Tamworth Regional local government area. In summary, the approved Rushes Creek Poultry Production Farm development (the "Development") comprises a total of 54 poultry sheds housing a combined population of 3,051,000 broiler birds, along with various items of ancillary infrastructure.

A modification to the development consent was approved by DPIE on 15 June 2021 allowing:

(a) An alternative remediation strategy for an area within the Development Site containing arsenic impacted soils (see **Section 5.2**); and

(b) Removal of condition B33(e) requiring the excavation of an Aboriginal hearth.

The following should be referred to for a detailed description of the approved Development:

- *Environmental Impact Statement, Intensive Livestock Agriculture, Rushes Creek Poultry Production Farm, SSD 7704* (SLR Consulting Australia [SLR] 2018) (EIS), including appendices;
- *Rushes Creek Poultry Production Farm, SSD 7704, Response to Submissions* (EME Advisory [EME] 2019a) (RTS), including appendices;
- *Rushes Creek Poultry Production Farm, SSD 7704, Supplementary Response to Submissions* (EME 2019b) (Supplementary RTS), including appendices; and
- *Rushes Creek Poultry Production Farm, SSD 7704, Section 4.55(1A) Modification Report* (EME 2021a), including appendices.

In accordance with condition A2 of Development Consent SSD 7704, the Development may only be carried out:

(a) in compliance with the conditions of consent;

(b) in accordance with all written directions of the Planning Secretary;

(c) in accordance with the EIS, RTS and Supplementary RTS;

(d) in accordance with the Modification Assessments;

(e) in accordance with the Development Layout plan appended to the consent (see **Figure 4**); and

(f) in accordance with the management and mitigation measures appended to the consent.

The consent conditions and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c) and A2(f). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c), A2(d) and A2(f), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

1.2 CEMP Purpose and Scope

This Construction Environmental Management Plan (CEMP) details the measures that ProTen will implement to avoid, minimise and/or manage the potential environmental and social impacts during Stage 1 of the construction phase of the Development. It does not cover:

- Stage 2 of the construction phase, which will be covered by a separate CEMP at a later date; nor
- Installation of the new electricity supply infrastructure from Manilla to the Development Site, which is the subject of a separate approval application under Part 5 of the EP&A Act from Essential Energy.

This CEMP has been prepared in accordance with the requirements of consent conditions C1 to C3, as listed in **Table 1**, for Stage 1 of the construction phase.

Table 1 Development Consent Conditions C1 to C3

Consent Condition		CEMP Section
Management Plan Requirements		
C1	Management plans … must be prepared in accordance with relevant guidelines, and include[1]:	
(a)	detailed baseline data	Not applicable
(b)	details of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures	(i) Sections 1.1, 1.2 and 5 (ii) Section 5 (iii) Sections 1.3 and 9
(c)	a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	Sections 2.5 and 5
(d)	a program to monitor and report on the: (i) impacts and environmental performance of the development; and (ii) effectiveness of the management measures set out pursuant to paragraph (c) above;	Section 6
(e)	a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 9
(f)	a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 9
(g)	a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and	(i) Sections 6.2.2, 6.2.3 and 8 (ii) Section 7 (iii) Section 6.2.3
(h)	a protocol for periodic review of the plan.	Section 9
Construction Environmental Management Plan		
C2	The Applicant must prepare a Construction Environmental Management Plan (CEMP) in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	This document
C3	As part of the CEMP … the Applicant must include the following: (a) Erosion and Sediment Control Plan; (b) Construction Traffic Management Plan (see condition B10); and (c) Community Consultation and Complaints Handling.	(a) Appendix B (b) Appendix A (c) Section 7 and Appendix C

1 - the Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular plans.

The following issue-specific management plans/strategies support this CEMP and are appended:

- *Construction Traffic Management Plan* (SLR 2021a) (CTMP) - see **Appendix A**;
- Erosion and Sediment Control Plans (ESCPs) – see **Appendix B**;
- *Community Consultation Plan* (EME 2021b) (CCP) - see **Appendix C**;
- *Revised Remediation Action Plan* (SLR 2021b) (RAP) – see **Appendix D**; and
- *Aboriginal Cultural Heritage Management Plan* (OzArk Environment & Heritage [OzArk] 2021) (ACHMP) – see **Appendix F**.

1.3 CEMP Objectives

This CEMP aims to assist ProTen in meeting condition A1 of Development Consent SSD 7704, which states:

> *In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.*

The specific objectives of the CEMP are:

- Facilitating compliance with the relevant conditions imposed by Development Consent SSD 7704 for Stage 1;
- Implementing the environmental protection and management commitments in the EIS and RTS relevant to Stage 1;
- Ensuring the responsibilities for environmental protection and management are nominated;
- Minimising complaints through effective environmental protection and management practices; and
- Ensuring any complaints and environmental incidents are promptly and effectively managed.

2 THE DEVELOPMENT

2.1 Development Site

The Development Site is located within the rural area known as Rushes Creek approximately 43 kilometres (km) northwest of Tamworth and 33 km northeast of Gunnedah in the Tamworth local government area. It comprises approximately 1,016 hectares (ha) and encompasses the land titles listed in **Table 2** and shown on **Figure 1**. N.B. a boundary adjustment and/or lot consolidation will be completed to ensure each of the four poultry farms are not constructed over lot boundaries and are contained wholly within their own lot.

Table 2 Schedule of Land Titles

Lot	Deposited Plan (DP)	Tenure
Lot 1	DP 44215	Freehold - owned by ProTen Tamworth Pty Limited
Part Lot 1	DP 1108119	
Lot 1	DP 1132298	
Lots 26, 85, 86, 101, 118, 165, 166 and 171	DP 752169	
Part Lot 143	DP 752189	
Lot 1	DP 1132078	
Lot 1	DP 1141148	
Untitled parcel of land traversing through Lot 171 DP 752169		Council public road (unformed)

Rushes Creek Road, which is a sealed two-lane rural road, forms the Development Site's eastern boundary and connects the Development Site to the Oxley Highway (NSW State Route B56). The Oxley Highway provides a connection to Tamworth, being the area's major centre. Ski Gardens Road, which is a good quality gravel road, forms part of the Development Site's northern boundary and a short section traverses through the Development Site.

The Namoi River is located to the north of the Development Site and Lake Keepit is located to the west and southwest of the Site. The topography of the Development Site ranges between around 325 and 410 metres Australian height datum (m AHD). While there is a natural southeast-northwest trending ridgeline running through the centre of the Development Site, it is relatively flat, with typical grades of 2%.

2.2 Land Ownership

ProTen is the registered owner of all freehold land within the Development Site. As shown on **Figure 2**, it is important to note the following:

- There is a narrow parcel of unformed Council public road within the Development Site traversing through Lot 171 DP 752169 under the care and management of Council; and
- There are two land parcels between the Development Site and the Namoi River not owned by ProTen:
  - Narrow parcel of unformed Crown public road under the care and management of DPIE Crown Lands; and
  - Lot 1 DP 504111 owned by the Water Administration Ministerial Corporation (WAMC) (as successor in title from the former Water Conservation and Irrigation Commission).

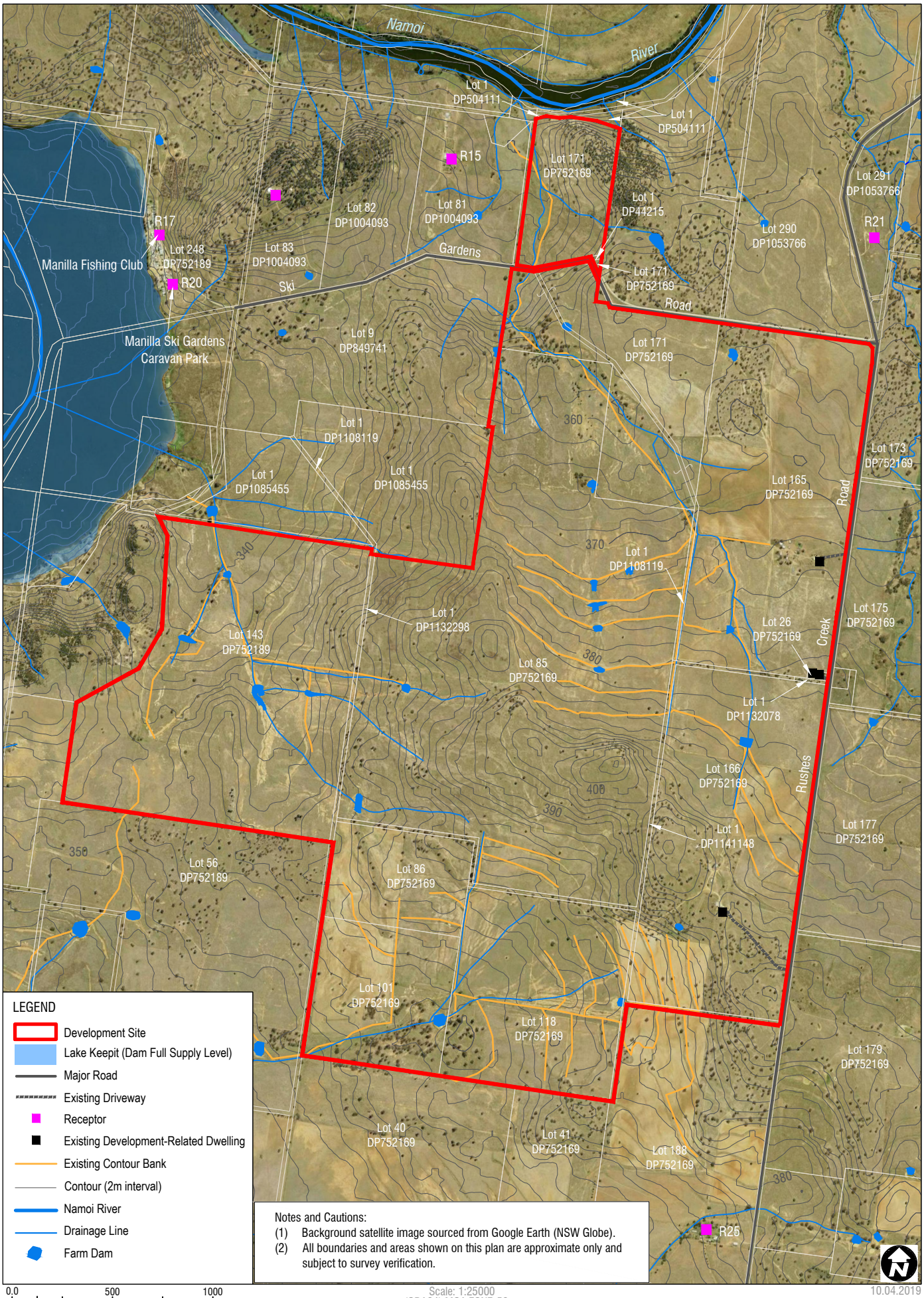
Engagement is underway with Council, DPIE Crown Lands and WAMC in relation to formalising the necessary leases/licences over the parcels of public/Crown land for water and electricity supply infrastructure.

2.3 Surrounding Receptors

As listed in **Table 3** and identified on **Figure 3**, the surrounding receptors comprise a low density of privately-owned residences associated with farming enterprises and recreational facilities.

Table 3 Surrounding Receptors

Receptor	Location
Existing Surrounding Residences	
R1	Residence, Rushes Creek Road
R2	Residence, Rushes Creek Road
R3	Residence, Rushes Creek Road
R4	Residence, Rushes Creek Road
R5	Residence, Rushes Creek Road
R6	Residence, Rushes Creek Road
R7	Residence, Moys Lane
R8	Residence, Moys Lane
R9	Residence, Corella Road
R10	Residence, Corella Road
R11	Residence, Rushes Creek Road
R12	Residence, Rushes Creek Road
R13	Residence and small piggery, Rushes Creek Road
R14	Residence, Rushes Creek Road
R15	Residence, Ski Gardens Road
R18	Residence, Ski Gardens Road
R19	Residence, Moys Lane
R21	Residence, Rushes Creek Road
R22	Residence, Moys Lane
R23	Residence, Moys Lane
R24	Residence, Rushes Creek Road
R25	Residence, Rushes Creek Road
R26	Residence, Perrings Road
R27	Residence, Perrings Road
R28	Residence, Rushes Creek Road
R29	Residence, Boundary Road
R30	Residence, Boundary Road
R31	Residence, Glenbrook Road
R33	Residence, National Fitness Road
R34	Residence, Rushes Creek Road
R36	Residence, Glenbrook Road
Potential Future Surrounding Residences	
R16	Potential future residence, Rushes Creek Road
R35	Potential future residence, Bidford Access
Existing Surrounding Recreational Facilities	
R17	Manilla Fishing Club, Ski Gardens Road
R20	Manilla Ski Gardens Caravan Park, Ski Gardens Road
R32	Lake Keepit Sport and Recreation Centre, National Fitness Road
R37	Lake Keepit Soaring Club, Keepit Dam Road
R38	Reflections Lake Keepit Holiday Park, Keepit Dam Road



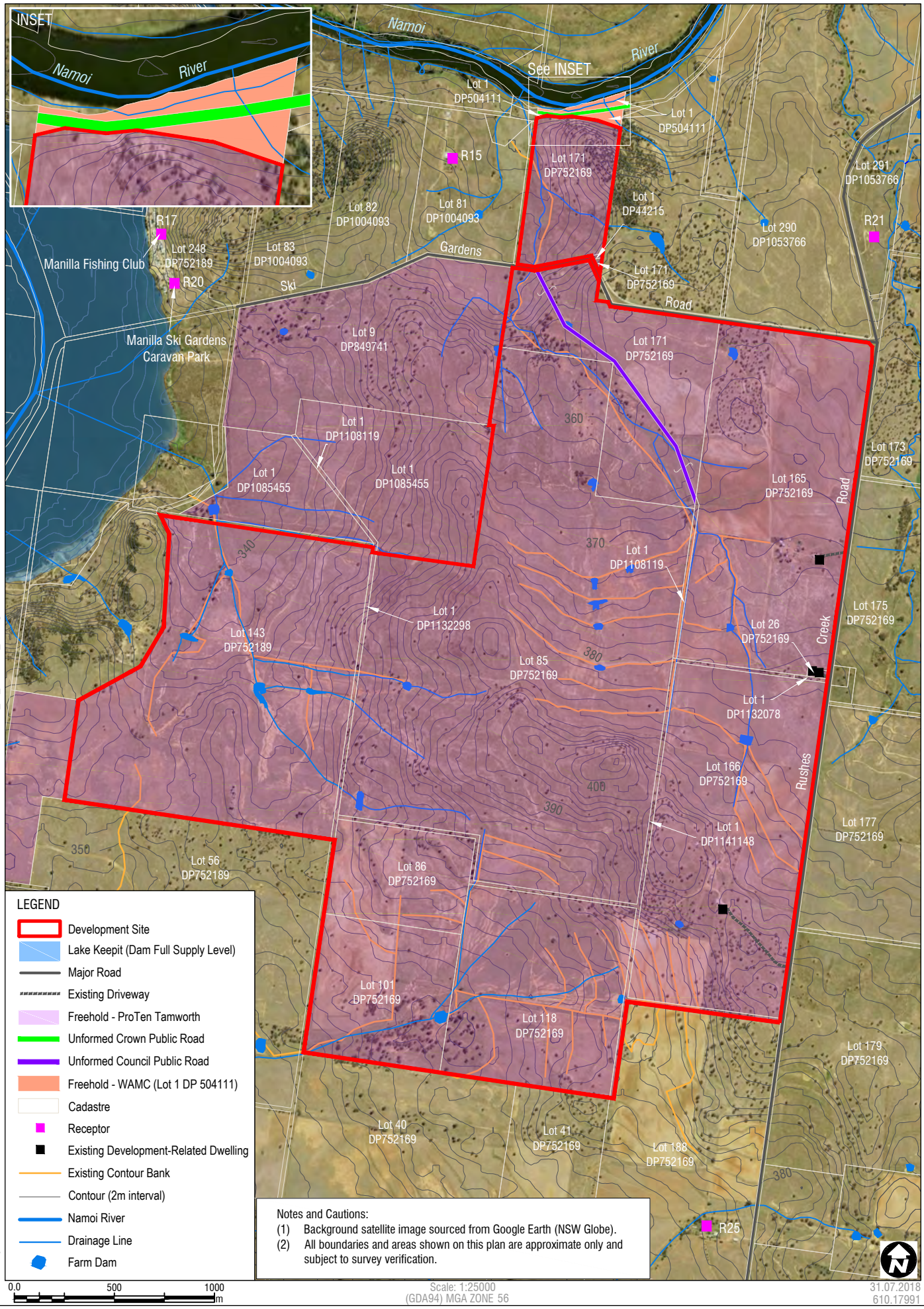
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Development Site

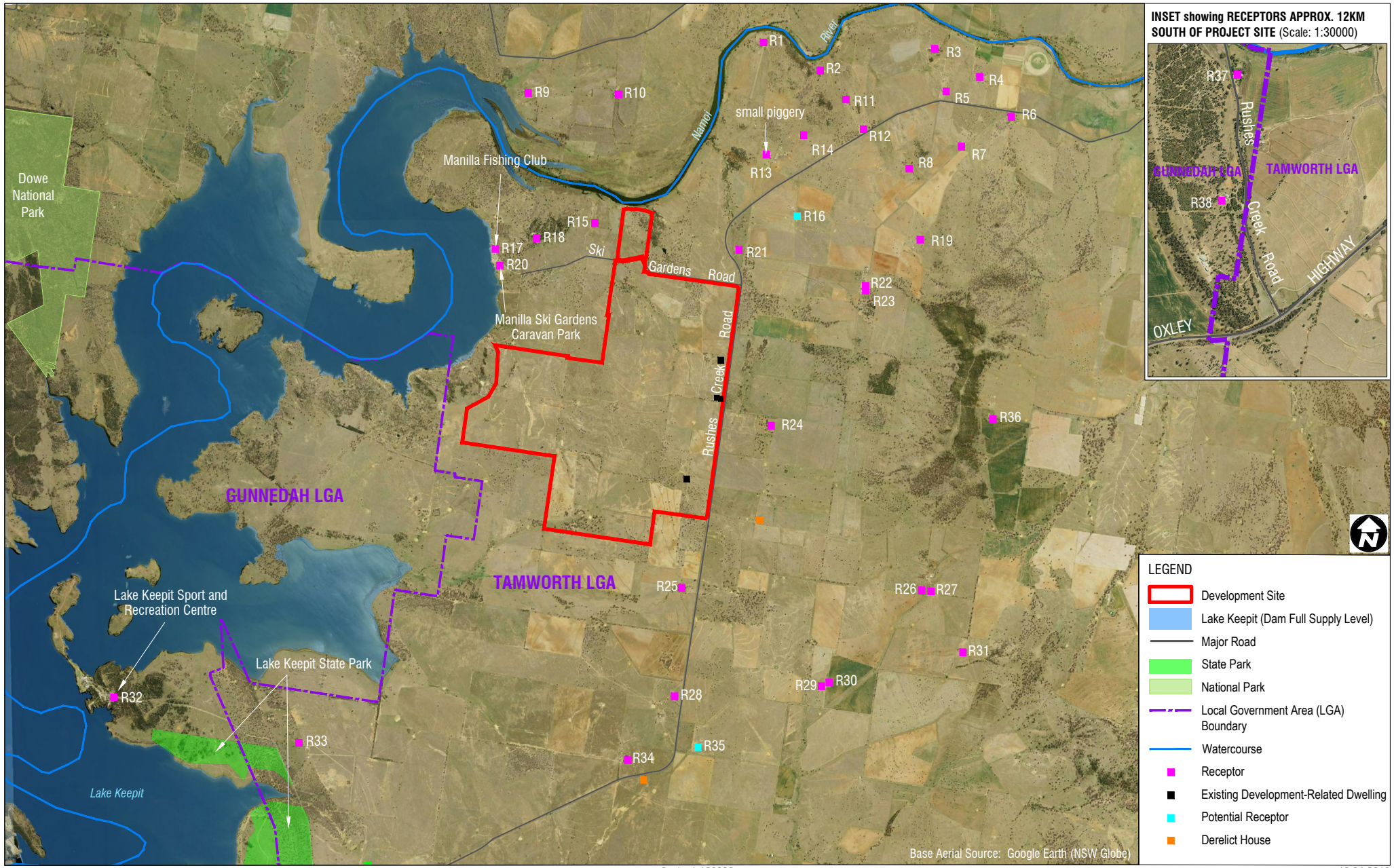
FIGURE 1



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Land Ownership

FIGURE 2



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Surrounding Receptors

FIGURE 3

2.4 Overall Development Summary

The approved Development comprises four individual poultry production units (PPUs), which are identified as Farms 1 to 4, where broiler birds will be grown for the purpose of producing poultry meat (for human consumption). Each farm will contain between 10 and 18 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, which will each have the capacity to house 56,500 birds, along with associated support and servicing infrastructure. The Development will comprise a total of 54 poultry sheds and house a combined site population of 3,051,000 birds.

The various components of the Development permitted to be constructed under Development Consent SSD 7704 are listed in **Table 4**. The approved conceptual layout of the overall Development is shown on **Figure 4**.

Table 4 Development Description Summary

Aspect	Details
Number of PPUs	Four - Farms 1, 2, 3 and 4
Total disturbance footprint	Approximately 92.81 ha
Number of poultry sheds	Farm 1 – 10 sheds Farm 2 – 18 sheds Farm 3 – 10 sheds Farm 4 – 16 sheds Total – 54 sheds
Type of poultry sheds	Tunnel-ventilated, fully-enclosed, climate-controlled
Poultry shed dimensions	160 metres (m) long by 18 m wide by 4.7 m high (to roof ridge)
Poultry shed areas	Each shed – 2,880 square metres (m^2) Total – 155,520 m^2
Support/servicing infrastructure	• Eight houses to accommodate farm managers; • Two access driveways from Rushes Creek Road and internal access roads; • Water supply infrastructure to extract, transfer, treat and store water from the Namoi River; • Reticulated electrical supply infrastructure; • Bedding material storage shed; • Two dead bird freezers; and • At each PPU: – Staff amenities and workshop (office, change rooms, toilets, workshop, chemical store, pump room); – Feed silos; – Water storage tanks; – Solar panels; – Fuel and gas storage facilities; – Generators; – Vehicle wheel wash; – Ring roads; – Surface water management system, including upstream diversions; and – Aerated wastewater treatment system (AWTS).
Vehicle access	Two access driveways from Rushes Creek Road constructed to accommodate a basic left turn (BAL) treatment. Internal access roads and ring roads around each PPU constructed as all-weather rural-type roads.

Aspect	Details
Servicing	Electricity – solar panels and connection to Essential Energy's reticulated supply infrastructure. Generators for emergency use only. Gas – bulk liquid petroleum gas (LPG) storage tanks. Water – licensed surface water allocation from the Namoi River.
Surface Water Management	An engineered surface water management system at each PPU comprising upstream diversions, grassed swale drains, table drains and a detention dam.
External lighting	One light fixture over the front and rear loading-unloading areas of each poultry shed.
Landscaping	Landscape plantings to improve the visual and environmental amenity of the Development Site, including vegetation screens around the perimeter of each PPU.

2.5 Construction Stage 1

2.5.1 Staging

Construction of the Development is proposed to occur over two separate stages as summarised in **Table 5** and shown on **Figure 5**.

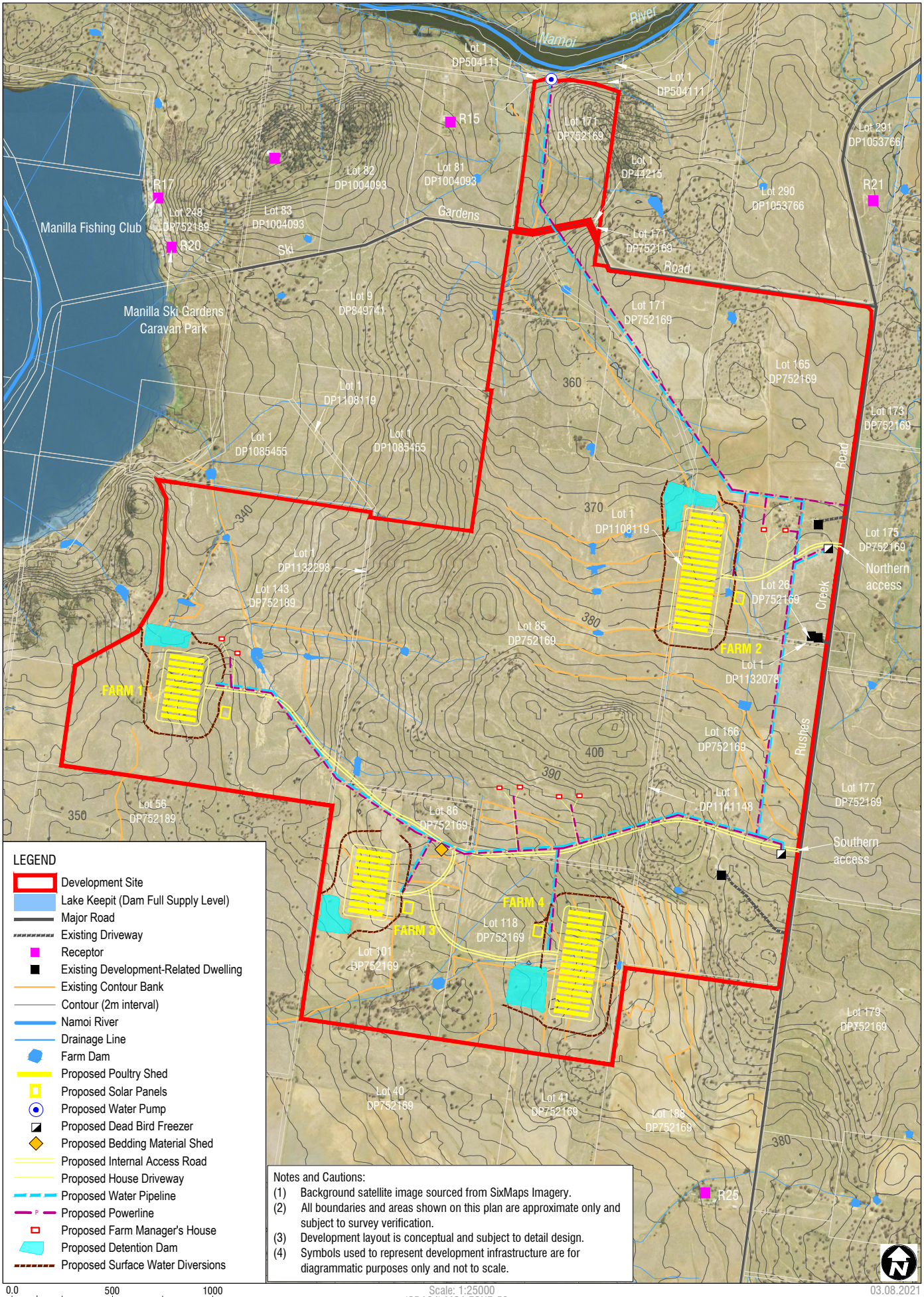
Table 5 Construction Stages and Durations

Stage	Key Activities	Approximate Duration
1	1A - Construction of the northern site access from Rushes Creek Road	15 months
	1B - Construction of Farm 2 (18 sheds, associated ancillaries and servicing, 2 houses)	
2	2A - Construction of the southern site access from Rushes Creek Road	15 months
	2B - Construction of Farm 4 (16 sheds, associated ancillaries and servicing, 2 houses)	
	2C - Construction of Farm 3 (10 sheds, associated ancillaries and servicing, 2 houses)	10 months
	2D - Construction of Farm 1 (10 sheds, associated ancillaries and servicing, 2 houses)	10 months
	Total	**50 months**

This CEMP applies to Stage 1 of the construction phase of the Development.

Stage 1 is scheduled to commence in mid-2021, with completion in late 2022. The timeframes for Stage 2 are unknown at this point.

The approved layout of Farm 2 (being the only PPU to be constructed in Stage 1) is shown on **Figure 6**.



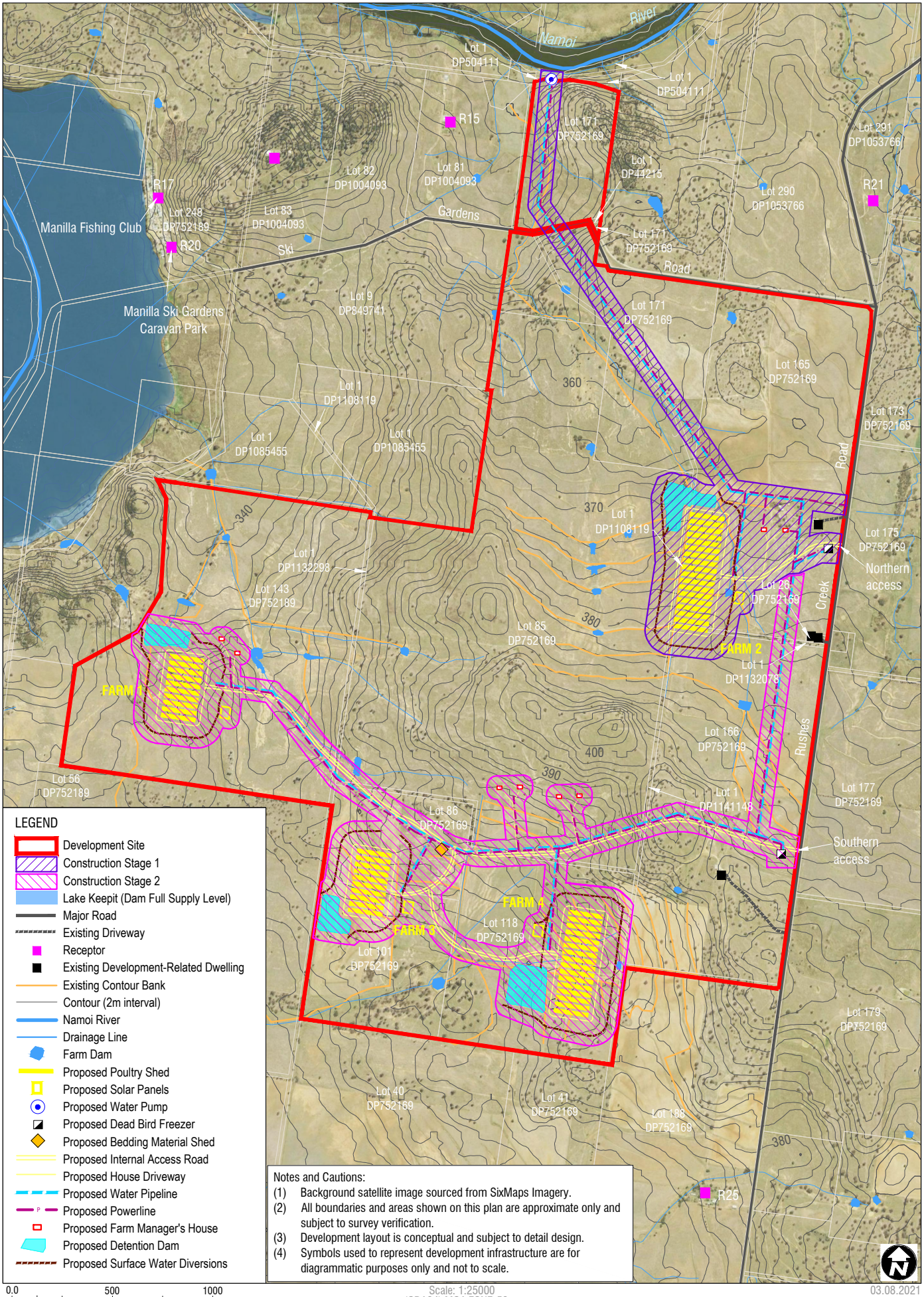
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Overall Development Layout

FIGURE 4



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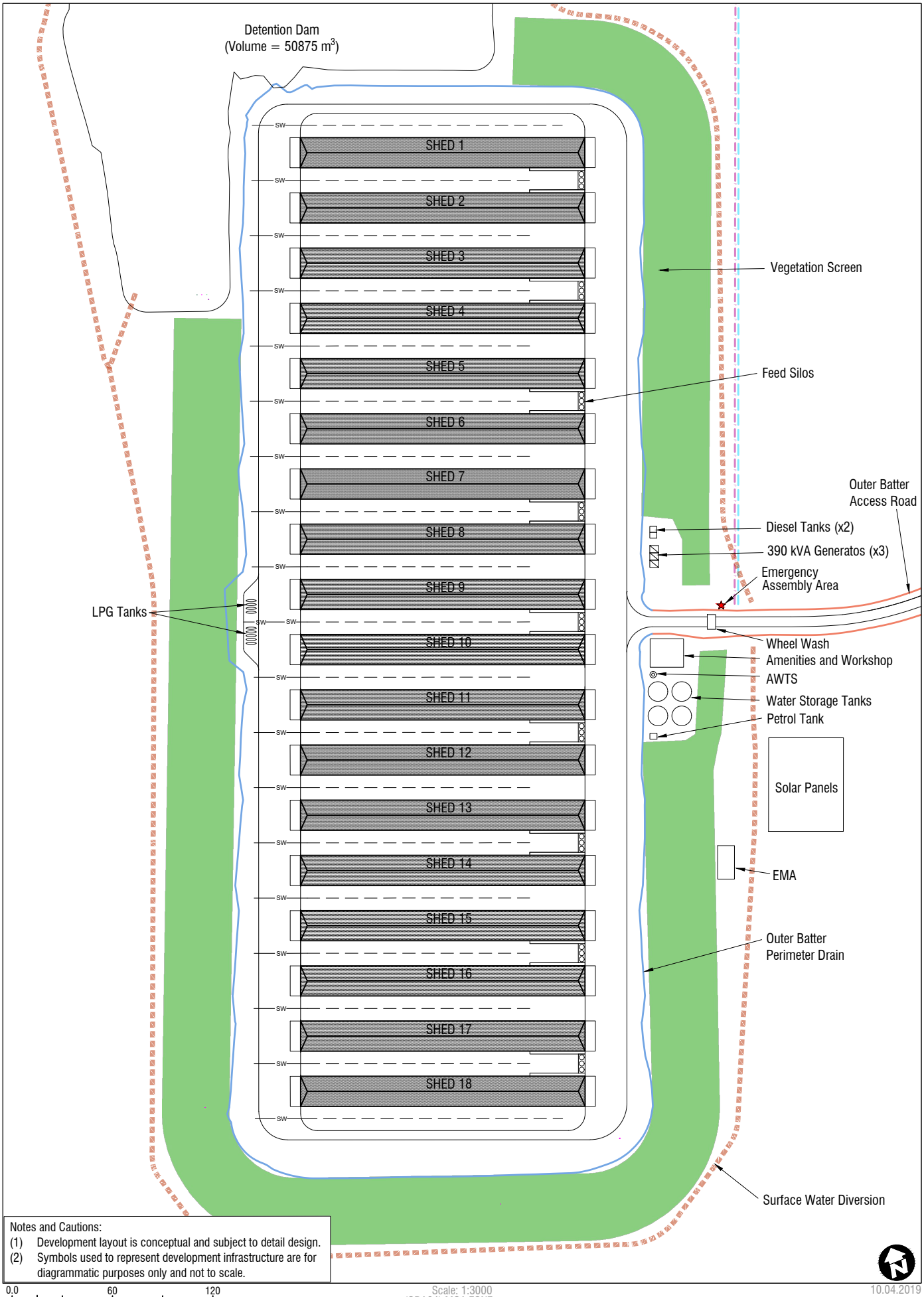
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Construction Staging

FIGURE 5



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Stage 1 - Farm 2 Layout

FIGURE 6

2.5.2 Activities

A construction program will be developed to cover the required civil, structural, electrical and building works. Construction will involve the erection of temporary buildings and facilities, including light and heavy vehicle access and parking areas, equipment storage compounds, diesel generators, diesel compressors, services and amenities. In summary, the construction activities within Stage 1 will include:

- Site preparation, including erosion and sediment control and earthworks;
- Construction of the new northern site access from Rushes Creek Road and internal access roads to service Farm 2;
- Foundation and slab construction at Farm 2;
- Superstructure construction, including portal frames, roofing and cladding, at Farm 2;
- Installation of associated plant and equipment at Farm 2;
- Installation of the amenities facilities, workshops and other ancillary infrastructure at Farm 2;
- Construction of two houses to accommodate the Farm 2 managers;
- Installation of servicing infrastructure for Farm 2, including the water pump adjacent to the Namoi River and associated water pipeline and electricity line running between the pump and Farm 2;
- Installation of the surface water management system at Farm 2; and
- Site landscaping at Farm 2 and adjacent to the new northern site access at Rushes creek Road.

The final engineering design drawings referenced on the construction certificate(s) should be referred to for specific detail.

2.5.3 Hours

Condition B25 of Development Consent SSD 7704 permits earthworks and construction to be carried out during the following hours:

- Monday to Friday - 7:00 am to 6:00 pm; and
- Saturday - 8:00 am to 1:00 pm.

Condition B26 permits works outside of these hours under the following circumstances:

(a) Works that are inaudible at the nearest sensitive receivers;

(b) For the delivery of materials by the NSW Police Force or other authorities for safety reasons; and/or

(c) Where required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

N.B. The NSW Government's *Environmental Planning and Assessment (COVID-19 Development-Construction Work Days) Order 2020* allows weekday construction hours (i.e. 7:00 am to 6:00 pm) to be extended to weekends and public holidays. This Order was gazetted on 31 March 2020 and is effective until 31 March 2022 (unless an extension to the Order is made in the meantime). As such, construction can occur between 7:00 am and 6:00 pm Monday to Sunday (including public holidays) until 31 March 2022. There are some requirements:

- No rock breaking, rock hammering, sheet piling, pile driving or similar during the hours outside those permitted by the development consent (see above); and
- All feasible and reasonable measures must be taken to minimise noise.

2.5.4 Site Signage

A clearly visible sign will be erected adjacent to the proposed new northern site access from Rushes Creek Road prior to commencing Stage 1 construction. The sign will advise:

- Relevant site information;
- Contact details for the Principal Certifying Authority; and
- Contact details for ProTen for feedback, enquiries and complaints.

This sign will remain throughout Stage 1.

2.5.5 Access

As indicated in **Table 5**, construction of the northern site access (i.e. Stage 1A) from Rushes Creek Road will occur prior to the construction of the poultry sheds at Farm 2. This new site access will consist of the following treatments:

- Sealed driveway crossover between Rushes Creek Road and the site boundary, sufficient to accommodate the swept path of a 25 m B-Double entering and exiting the Site;
- Site access road will be sealed for a minimum of 50 m into the Site from Rushes Creek Road; and
- Pavement widening will be provided on Rushes Creek Road to accommodate Basic Left (BAL) turn treatments.

There are existing site accesses off Rushes Creek Road that are available for vehicles associated with site preparation works. As such, vehicles associated with the construction of the new site access will be able to park, unload and load within the Development Site (i.e. vehicles are not required to stand within the road reserve external to the Site).

The CTMP in **Appendix A** should be referred to for further details in relation to construction traffic access, internal circulation roads, car parking and loading-unloading areas.

2.5.6 Erosion and Sediment Control

In accordance with consent conditions B17 and B18, clean water diversions and erosion and sediment controls will be installed and stabilised prior to commencing surface disturbance activities in accordance with *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom 2004) (the "Blue Book") and *Erosion and Sediment Control on Unsealed Roads* (Office and Environment and Heritage [OEH] 2012) to ensure no off-site impacts.

The ESCPs in **Appendix B** have been developed as part of the civil design drawings and should be referred to for specific detail.

2.5.7 Revegetation

Disturbed areas that will not be sealed or actively utilised for operational activities will be promptly rehabilitated to a stable landform and revegetated in a progressive manner to minimise exposed surfaces. Revegetation will generally be undertaken in accordance with the following steps:

1. Where possible, topsoil will be re-spread to a minimum depth of 100 millimetres (mm) in the reverse sequence to its removal so that the organic layer containing any seed or vegetation is returned to the surface. Re-spreading on the contour will aid runoff control and increase moisture retention for subsequent plant growth. The re-spread topsoil will be levelled to achieve an even surface (avoiding a compacted or an over-smooth finish) and tilled.
2. Revegetation will commence as soon as practicable, with a suitable pasture seed mix (see **Table 6** for suitable options) being spread over the disturbance area using a broadcast seeding method. For critical areas requiring quick revegetation or for areas where poor revegetation is identified, more intensive revegetation methods, such as hydromulching, may be considered.
3. Appropriate fertiliser will be applied during the seeding operation if considered necessary.

Table 6 Suitable Grasses and Legumes for Revegetation

Species	Application Rate (kg/ha)	
	Spring/Summer	Autumn/Winter
Japanese Millet	20	5
Ryecorn/Oats	5	20
Couch Grass	10	8
Wimmera Ryegrass	5	10
White Clover	8	-
Lucerne	5	-
Sub Clover	-	8
Serradella	-	10
Consol	-	2

Rehabilitation areas will be inspected on a monthly basis to:

- Assess the success of revegetation works;
- Identify and undertake any required maintenance/remedial works (e.g. watering, re-seeding, fertiliser application, herbicide application); and
- Remove temporary erosion and sediment controls on completion of the rehabilitation works.

Successful rehabilitation is a stable landform with greater than 70% permanent ground cover (excluding weeds).

3 PROTEN'S PROJECT TEAM

3.1 Site Contact Details

Table 7 lists the key site contacts during Stage 1 of the construction phase of the Development.

Table 7 ProTen Construction Site Contacts

Role	Name	Contact Details
Construction Site Supervisor (CSS)	TBA	TBA
ProTen National Construction Manager (NCM)	Adrian McKinnon	Ph: 0427 208 971 Email: adrianm@proten.com.au
ProTen Safety, Health, Environment & Quality Advisor (SHEQ Advisor)	Kathryn Singh	Ph: 02 6962 1770 / 0434 550789 Email: kates@proten.com.au
ProTen Safety, Health, Environment & Quality Officer – Tamworth (SHEQ Officer)	Nathalia Garcia Castro	Ph: 0450 409395 Email: nathaliac@proten.com.au
ProTen Regional Operations Manager (ROM)	Julian Johnson	Ph: 0406 484 474 Email: julianj@proten.com.au
ProTen's Risk Manager	Jim Rimmer	Ph: 02 6962 1770 / 0438 750974 Email: jrimmer@proten.com.au
ProTen environmental hotline (toll-free)	-	Ph: 1800 776 994
ProTen Development webpage	-	www.proten.com.au

3.2 Roles and Responsibilities

The key personnel responsible for environmental management during the construction phase of the Development are listed in **Table 8** along with their respective key responsibilities.

Table 8 Roles and Responsibilities

Development Role	Key Responsibilities
Construction Site Supervisor (CSS)	• Overall responsibility for environmental management and compliance with the development consent and CEMP. • Ensure appropriate site inductions and training for employees and contractors, including their requirements under the CEMP. • Coordinate site inspections, report any notable findings to the National Construction Manager and initiate required corrective/maintenance works to environmental controls (for example, erosion and sediment controls).
National Construction Manager (NCM)	• Support the Construction Site Supervisor (as required) with environmental management and compliance with the development consent and CEMP • Provide adequate resources to enable effective implementation of the CEMP. • Record, notify, investigate and respond to any environmental incidents and, where necessary, develop and implement corrective actions in consultation with the Construction Site Supervisor. • Approve / reject minor amendments to the CEMP (see **Section 9**).

Development Role	Key Responsibilities
SHEQ Advisor / SHEQ Officer	• Support the Construction Site Supervisor and National Construction Manager (as required) with environmental management and compliance with the development consent and CEMP. • Support the Construction Site Supervisor (as required) with site inductions and training for employees and contractors. • Support the National Construction Manager (as required) with any complaints and/or environmental incidents.
Regional Operations Manager (ROM)	• Support the Construction Site Supervisor and National Construction Manager (as required) with environmental management and compliance with the development consent and CEMP. • Be the "central contact person" to keep the surrounding community regularly informed throughout the construction phase (see the CCP). • Record, notify, investigate and respond to any enquiries and/or complaints and, where necessary, develop and implement corrective actions in consultation with the Construction Site Supervisor and National Construction Manager.
All employees and contractors	• Ensure familiarity, implementation and compliance with the CEMP. • Support ProTen's commitment to environmental management and compliance. • Work in a manner that will not harm the environment or impact on surrounding receptors. • Report any inappropriate construction practices and/or environmental management practices to the Construction Site Supervisor without delay. • Report all feedback, enquiries, complaints and environmental incidents to the Construction Site Supervisor or Regional Operations Manager without delay.

3.3 Inductions and Training

The Construction Site Supervisor will ensure that all employees and contractors involved in the construction phase of the Development are suitable inducted and trained prior to commencing any work on site. Training in relation to environmental responsibilities and implementation of this CEMP will take place initially through the site induction and then on an on-going basis through "toolbox talks" (or similar).

The topics to be covered during the induction and toolbox talks in relation to environmental responsibilities include:

- General site maintenance and management expectations and requirements;
- Familiarisation with site environmental mitigation and management measures in this CEMP;
- Waste avoidance and management strategies;
- Aboriginal heritage artefact identification and unanticipated finds protocol;
- Appropriate response and management of complaints received from the public, regulatory authorities and/or other stakeholders; and
- Appropriate response and management of environmental incidents.

4 REGULATORY AUTHORITIES

The regulatory authorities that may have an interest in the construction phase of the Development are:

- DPIE - Industry Assessment team, Compliance team and Biodiversity Conservation Division;
- Environment Protection Authority (EPA)
- Transport for NSW;
- Heritage NSW;
- Natural Resources Access Regulator;
- WaterNSW;
- Department of Primary Industries;
- NSW Health / Hunter New England Local Health;
- NSW Rural Fire Service;
- Fire and Rescue NSW;
- Tamworth Regional Council (Council);
- Gunnedah Shire Council; and
- SafeWork NSW.

Contact details for each of these authorities are provided in the CCP contained in **Appendix C**.

5 ENVIRONMENTAL MANAGEMENT MEASURES

Key environmental issues associated with the Development are identified and addressed in the EIS and RTS. A suite of development design, best management practices and mitigation measures have been committed to minimise the potential for adverse impact on the local environment and surrounding populace. The environmental mitigation and management measures for Stage 1 of the construction phase of the Development are provided in the following sub-sections.

5.1 General

Table 9 lists the general environmental mitigation and management measures that will be implemented throughout Stage 1 of the construction phase to minimise the potential for adverse impacts on the local environment and surrounding receptors.

Table 9 General Construction Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
All practicable measures will be implemented to prevent or minimise the risk of adverse impact to the local environment and surrounding populace as a result of construction activities.	All employees and contractors	On-going
Stage 1 will generally be constructed as described in the EIS and RTS and in accordance with the detailed designs and associated construction certificate(s).	CSS NCM	On-going
Construction activities will be undertaken within the hours specified in **Section 2.5.3**.	CSS	On-going
Dial Before You Dig searches will be completed to obtain information from electricity and telecommunications asset owners to ensure planned land disturbance activities do not impact/disturb network infrastructure.	CSS	Prior to construction / disturbance
A clearly visible sign will be erected adjacent to the new northern site access from Rushes Creek Road advising: • Relevant site information; • Contact details for the Principal Certifying Authority; and • Contact details for ProTen for feedback, enquiries and complaints. The sign will remain throughout the construction phase.	CSS	Prior to construction and on-going
Construction workers will be suitably inducted and trained prior to commencing work. Training in relation to environmental responsibilities and implementation of the CEMP will take place initially through the site induction and then on an on-going basis through toolbox talks (or similar).	CSS	Induction - prior to commencing work. Toolbox talks - on-going.
The complaints and environmental incident management strategies contained within **Sections 7** and **8**, respectively, will be implemented to ensure that all complaints and incidents relating to construction are promptly and effectively handled.	All employees and contractors	On-going

5.2 Land Contamination

An area associated with a former sheep dip within Lot 165 DP 752169 (adjacent to Farm 2) in the Development Site has been found to have soil arsenic levels above the relevant health investigation level for standard residential land use with garden/accessible soil (HIL-A) guideline value in the *National Environmental Protection (Assessment of Site Contamination) Measure* (National Environmental Protection Council 2013). The approved remediation strategy is capping and containment of the arsenic impacted soils in-situ, as detailed in the RAP (SLR 2021b) contained in **Appendix D**.

The commitments listed in **Table 10** will be implemented to address the arsenic impacted soils within Lot 165 DP 752169 and any unexpected finds during construction.

Table 10 Land Contamination Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
A Site Auditor accredited under the *Contamination Land Management Act 1997 NSW Site Auditor Scheme* will be engaged.	NCM	Prior to construction
Remediation of the arsenic impacted soil adjacent to the former sheep dip in Lot 165 DP 752169 will be undertaken by a suitably qualified and experienced consultant in accordance with the RAP (see **Appendix D**).	NCM	Within 12 months of commencing construction
A *Site Validation Report* prepared in accordance with consent condition B52 and the RAP (see **Appendix D**) will be submitted to DPIE and the EPA.	NCM	Within 1 month of completing remediation
A *Site Audit Statement* and *Site Audit Report* prepared in accordance with consent condition B52A will be obtained from the Site Auditor and submitted to DPIE and the EPA.	NCM	Within 6 months of completing remediation and prior to operation
A Long-Term Environmental Management Plan (LTEMP) will be prepared for approval by the Site Auditor and implemented in accordance with consent condition B52B and the approved RAP (see **Appendix D**). The LTEMP is to be listed on the relevant planning certificate for the land.	NCM	Prior to the finalisation of the *Site Audit Statement* and *Site Audit Report*
The unexpected contamination procedure contained in **Appendix E** will be followed in the event that previously unidentified potentially contaminated soil is encountered during construction.	CSS	As required
Only virgin excavated natural material (VENM), excavated natural material (ENM) or other material approved in writing by the EPA is to be brought on to the Development Site.	CSS	On-going

5.3 Dust Management

ProTen will implement all reasonable and feasible measures to minimise dust generation during construction. The main sources of dust emissions will be wheel-generated dust from internal roads and surface disturbance from earthworks.

The mitigation and management measures listed in **Table 11** will be implemented to minimise the potential for dust emissions and impacts during construction.

Table 11 Dust Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Surface disturbance will be limited to the smallest practicable area possible.	CSS	On-going
Disturbed areas will be promptly rehabilitated and revegetated to a stable landform in a progressive manner to minimise exposed surfaces as outlined in **Section 2.5.7**.	CSS	Post-construction / disturbance
When necessary, dust will be minimised by "wetting" down exposed surfaces and stockpiles during dry conditions.	CSS	On-going
Where possible, vehicles on site will remain on formed roads/accesses.	All employees and contractors	On-going
Internal roads will be appropriately constructed and maintained with a suitably compacted base.	CSS	On-going
Vehicles will not exceed a general speed limit of 60 km/hr along the internal access roads, with a reduced speed limit of 40 km/hr in the vicinity of work sites.	All employees and contractors	On-going
Plant and equipment will be regularly maintained to ensure optimal operating condition.	CSS	On-going
Loaded heavy vehicles entering or exiting the Development Site will have their loads covered.	All employees and contractors	On-going
If necessary, heavy vehicles exiting the Development Site will be cleaned of dirt, sand and other materials to avoid tracking these materials on to the public road network.	All employees and contractors	On-going

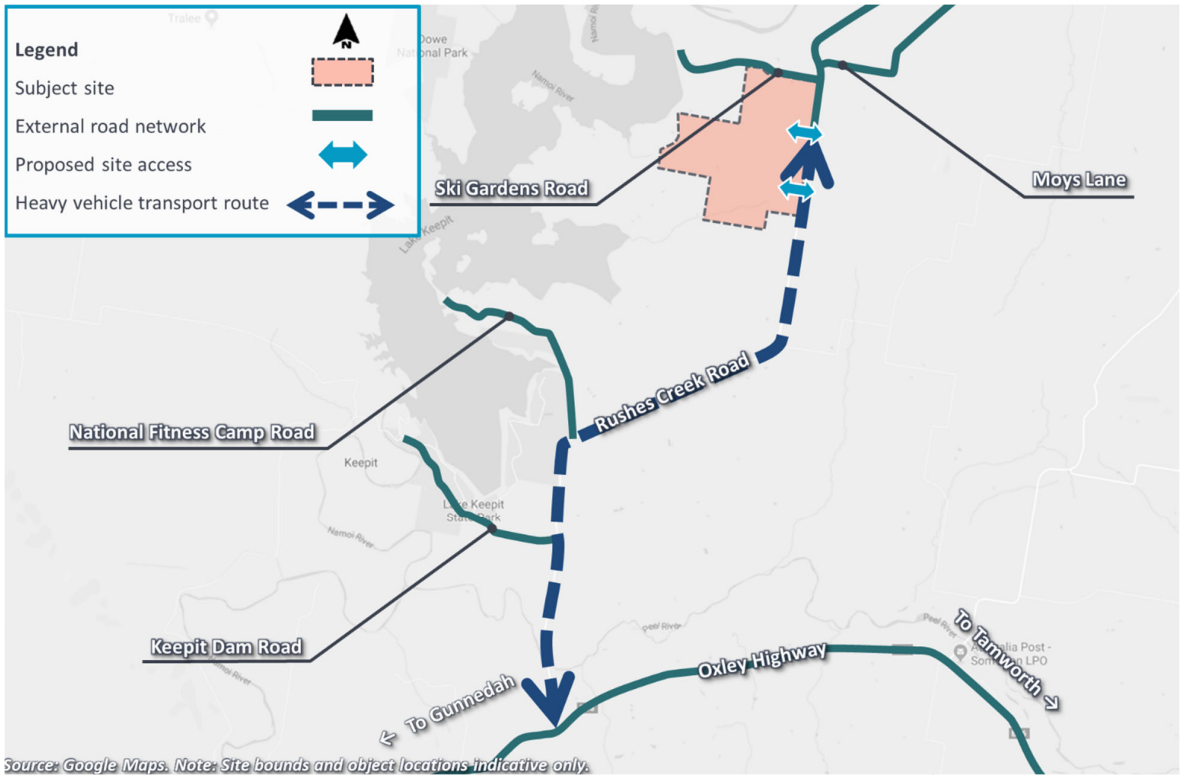
5.4 Traffic Management

5.4.1 Designated Heavy Vehicle Transport Route

The majority of construction traffic will travel between Tamworth and the Development Site via the Oxley Highway and Rushes Creek Road, with the potential for a small volume coming from Gunnedah way to the west via the Oxley Highway and/or from Manilla way to the northeast via Manilla Road.

To minimise the potential for impact on residential areas and school zones, the designated transport route for heavy vehicles for the Development Site is via Rushes Creek Road to the south of the Site towards the Oxley Highway, as shown on **Figure 7**. Heavy vehicles are not to use Rushes Creek Road to the north of the Site (i.e. towards Manilla)

Figure 7 Designated Heavy Vehicle Transport Route



Source: CTMP (SLR 2021a)

5.4.2 Mitigation and Management

Traffic-related impacts arising from construction activities are expected to be low and will be able to be appropriately managed through the implementation of the CTMP contained in **Appendix A**, which was prepared and approved in accordance with condition B10 of Development Consent SSD 7704.

The mitigation and management measures to be implemented to minimise the potential for adverse traffic-related impacts during Stage 1 construction are summarised in **Table 12**. The CTMP should be referred to for further details/requirements.

Table 12 Traffic Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
All heavy vehicle drivers will read and sign the *Drivers Code of Conduct* contained in the CTMP (see **Appendix A**).	CSS	Prior to commencing work
Heavy vehicle drivers will be instructed to use the designated heavy vehicle transport route for the site, being via Rushes Creek Road to the south towards the Oxley Highway - see **Figure 7**. Heavy vehicle drivers will be instructed not use Rushes Creek Road to the north of the site (i.e. towards Manilla).	CSS	Prior to commencing work and on-going
Traffic control plans (TCPs) will be prepared and implemented prior to commencing any works within the road reserve of Rushes Creek Road and Ski Gardens Road – see Section 6.4 of the CTMP (see **Appendix A**).	CSS	Prior to commencing any works within public road reserves
Construction vehicles will enter and exit the Development Site for site preparation works via the existing site access driveways off Rushes Creek Road and subsequently via the new northern access driveway to be constructed off Rushes Creek Road.	All employees and contractors	On-going
Vehicles will not exceed a general speed limit of 60 km/hr along the main site access roads from Rushes Creek Road, with a reduced speed limit of 40 km/hr in the vicinity of all work sites.	All employees and contractors	On-going
All construction-related traffic and plant/equipment will park within the Development Site. There will be no queuing or parking on Rushes Creek Road or Ski Gardens Road.	All employees and contractors	On-going
Where possible, vehicles on site will remain on formed roads/accesses.	All employees and contractors	On-going
Suitable signage will be erected and maintained indicating internal traffic direction and speed limits to ensure the orderly and safe use of the site, as well as to minimise the potential for traffic conflict.	CSS	Prior to construction and on-going
Internal roads will be maintained clear of obstruction and used exclusively for the purposes of transport, loading-unloading and parking.	CSS	On-going
Loaded heavy vehicles entering or exiting the Development Site will have their loads covered.	All employees and contractors	On-going
If necessary, heavy vehicles exiting the Development Site will be cleaned of dirt, sand and other materials to avoid tracking these materials on to the public road network.	All employees and contractors	On-going
The only traffic to enter the Development Site will be construction traffic and, if required, emergency vehicles. There will not be any general public access.	CSS	On-going

5.5 Noise Management

The Development will be constructed with the aim of achieving the conservative construction noise criterion of $L_{Aeq,15min}$ 40 decibels at surrounding receptors (as adopted in the EIS).

Site preparation/earthworks and road construction are considered to represent the most significant noise impact during the construction phase, with these activities using substantial noise generating equipment. However, it is noted that these construction activities will be short-term.

The mitigation and management measures listed in **Table 13** will be implemented to minimise the potential for adverse noise impacts at the nearest receptor locations during construction.

Table 13 Noise Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Construction activities will be undertaken within the construction hours specified in **Section 2.5.3**.	CSS	On-going
Plant and equipment operators will be instructed on how to minimise noise generation at all times. If necessary, this may include avoiding the operation of noisy plant and equipment simultaneously.	CSS	Prior to commencing work - site induction. On-going - toolbox talks.
Plant and equipment will be maintained to meet regulatory and industry standards, as well as ensure optimal operating conditions.	CSS	On-going
Heavy vehicle drivers will be requested to avoid the use of engine or compression braking systems along Rushes Creek Road, except where required for safety.	CSS	Prior to commencing work and on-going.
Vehicles will not exceed a general speed limit of 60 km/hr along the main site access roads from Rushes Creek Road, with a reduced speed limit of 40 km/hr in the vicinity of all work sites.	All employees and contractors	On-going
Vehicles will be turned off when not in use.	All employees and contractors	On-going

5.6 Soil and Water Management

The Namoi River is located to the north of the Development Site and Lake Keepit is located to the west and southwest of the Site (see **Figure 4**). While there are no notable surface water features within the bounds of the Development Site, there are several intermittent drainage lines traversing through the Site and several farm dams. Runoff to the east of the ridgeline trending southeast-northwest through the centre of the Development Site is directed to the Namoi River via contour banks and shallow swales. Runoff to the west of this ridgeline is channelled to Lake Keepit through drainage lines in the south, west and southwest of the Development Site. The contour banks are generally around 500 mm high and the swales a similar depth.

Construction activities have the potential to impact upon surface water resources primarily through the loss of groundcover, soil disturbance, erosion and the creation of sediment-laden runoff. The mitigation and management measures listed in **Table 14** will be implemented to minimise the potential for off-site impacts.

Table 14 Soil and Surface Water Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Only VENM, ENM or other material approved in writing by the EPA is to be brought on to the Development Site.	CSS	On-going
Accurate records will be maintained for the type and volume of any fill material brought on to the Development Site.	CSS	On-going
Surface disturbance will be limited to the smallest practicable area possible at any one time.	CSS	On-going
Where required, clean water diversions comprising a deflection bank and/or swale drain will be installed around the upstream sides of the poultry farm construction sites to convey clean water run-off around the construction areas and safely back in to the downstream flow path. They will be constructed and stabilised prior to earthworks commencing and will be designed to convey the runoff from the upstream catchment for rainfall events up to the 1% AEP event.	CSS	Prior to construction and on-going
Appropriate erosion and sediment controls will be installed in accordance with the Blue Book and *Erosion and Sediment Control on Unsealed Roads* (OEH 2012) to ensure no off-site impacts. The ESCPs in **Appendix B** should be referred to for specific detail.	CSS	Prior to construction and on-going
An on-going inspection and maintenance program will be implemented to ensure the continued integrity of the erosion and sediment control structures throughout the construction period. They will be visually inspected on a monthly basis and following significant rainfall events and any required maintenance work will be promptly undertaken.	CSS	Monthly and following significant rainfall
Stripped topsoil will be appropriately stockpiled and managed for use in future rehabilitation works.	CSS	On-going
Where possible, vehicles on site will remain on formed roads/accesses.	All employees and contractors	On-going
Disturbed areas will be promptly rehabilitated and revegetated to a stable landform in a progressive manner to minimised exposed surfaces as outlined in **Section 2.5.7**.	CSS	Post-construction / disturbance

5.7 Biodiversity Management

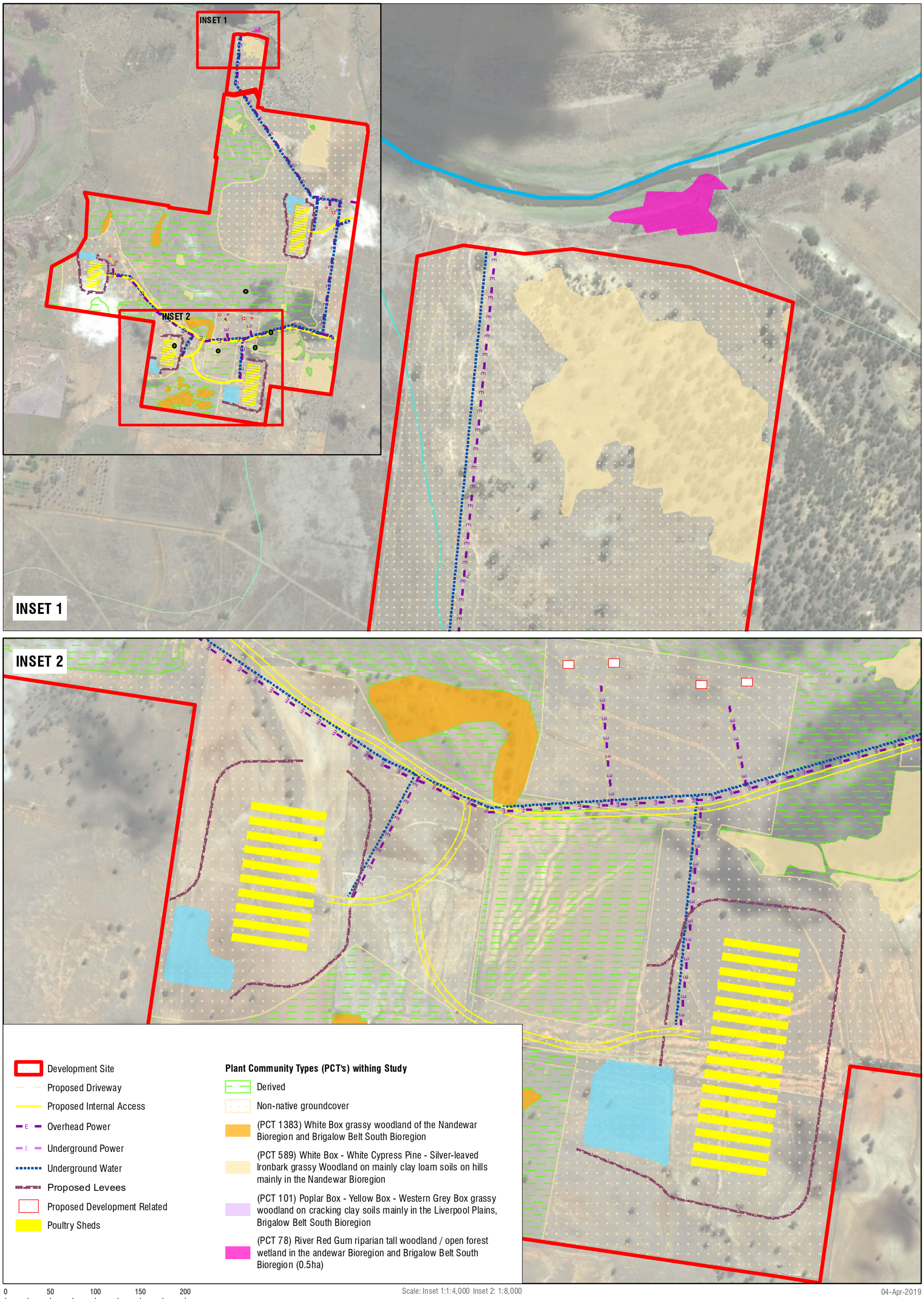
5.7.1 Approved Clearing

The majority of the Development Site supports large expanses of grazed pasture comprising mainly exotic grasses and herbs and native derived grasslands. There are some patches of native woodland remaining associated with topographic depressions and drainage features and within paddocks where historical clearing has been less extensive. As shown on **Figure 8**, the Development Site does comprise some areas of threatened ecological communities (TECs) that are considered endangered under State and/or federal legislation.

The areas of native vegetation to be cleared were carefully considered and all high-conservation habitats avoided where possible. The following direct impacts are approved under Development Consent SSD 7704:

- Removal of approximately 1.17 ha of derived grassland (TEC vegetation) where linear infrastructure traverses through the green hatched areas on **Figure 8**;
- Disturbance of approximately 86.61 ha of exotic pasture (i.e. non-native groundcover) where infrastructure is positioned within the yellow hatch areas on **Figure 8**; and
- Removal of some isolated paddock trees to accommodate infrastructure where required.

There is to be no disturbance outside of the approved development footprint.



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*Note: Proposed residences are an approximate indication of location and do not represent actual scale or final footprint.

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Approved Biodiversity Impacts

FIGURE 8

5.7.2 Mitigation and Management

Table 15 lists the mitigation and management measures that will be implemented to minimise the direct and indirect impacts on biodiversity during construction.

Table 15 Biodiversity Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Surface disturbance will be limited to the smallest practicable area possible and there will not be any disturbance outside of the approved development footprint.	CSS	On-going
Construction areas will be clearly delineated to ensure no vegetation outside of these areas is disturbed.	CSS	Prior to construction and on-going
Appropriate erosion and sediment controls will be installed in accordance with the Blue Book and *Erosion and Sediment Control on Unsealed Roads* (OEH 2012) to ensure no off-site impacts. The ESCPs in **Appendix B** should be referred to for specific detail.	CSS	Prior to construction and on-going
An on-going inspection and maintenance program will be implemented to ensure the continued integrity of the erosion and sediment control structures throughout the construction period. They will be visually inspected on a monthly basis and following significant rainfall events and any required maintenance work will be promptly undertaken.	CSS	Monthly and following significant rainfall
Vehicles will not exceed a general speed limit of 60 km/hr along the main site access roads from Rushes Creek Road, with a reduced speed limit of 40 km/hr in the vicinity of all work sites.	All employees and contractors	On-going
Where possible, vehicles on site will remain on formed roads/accesses.	All employees and contractors	On-going
Vehicles and machinery leaving the Development Site will be inspected and, if necessary, cleaned to avoid the spread of weeds.	All employees and contractors	On-going
WIRES will be contacted prior to planned tree felling to advise of proposed works and arrange a volunteer wildlife handler (if required and available) to rescue any fauna.	CSS	As required
Rubbish, including building material wastes and food scraps, will be properly managed and will not be stockpiled within areas of native vegetation.	All employees and contractors	On-going
Disturbed areas will be promptly rehabilitated and revegetated to a stable landform following completion of disturbance activities as outlined in **Section 2.5.7**.	CSS	Post- construction / disturbance
Revegetation works will be regularly inspected and assessed for maintenance requirements, including weed control.	CSS	Monthly following completion of disturbance until stable landform achieved (>70% permanent ground cover, excluding weeds)

5.8 Aboriginal Heritage Management

Thirty-five (35) Aboriginal sites have been previously identified within the Development Site, including isolated finds, artefact scatters, a hearth and three scarred trees.

5.8.1 Approved Salvage and Fencing

The previously recorded Aboriginal sites that are within the disturbance footprint or within close proximity of the disturbance footprint for Stage 1 of the construction phase can be seen on **Figure 9** and are identified as:

- Bondah-OS2 – artefact scatter adjacent to the Namoi River near the proposed water supply pump;
- Bondah-OS3 – artefact scatter adjacent to the proposed water and electricity supply lines between the Namoi River and Farm 2;
- Bondah-IF1 – isolated find within the disturbance footprint for Farm 2; and
- Bondah-IF2 – isolated find within the disturbance footprint for Farm 2.

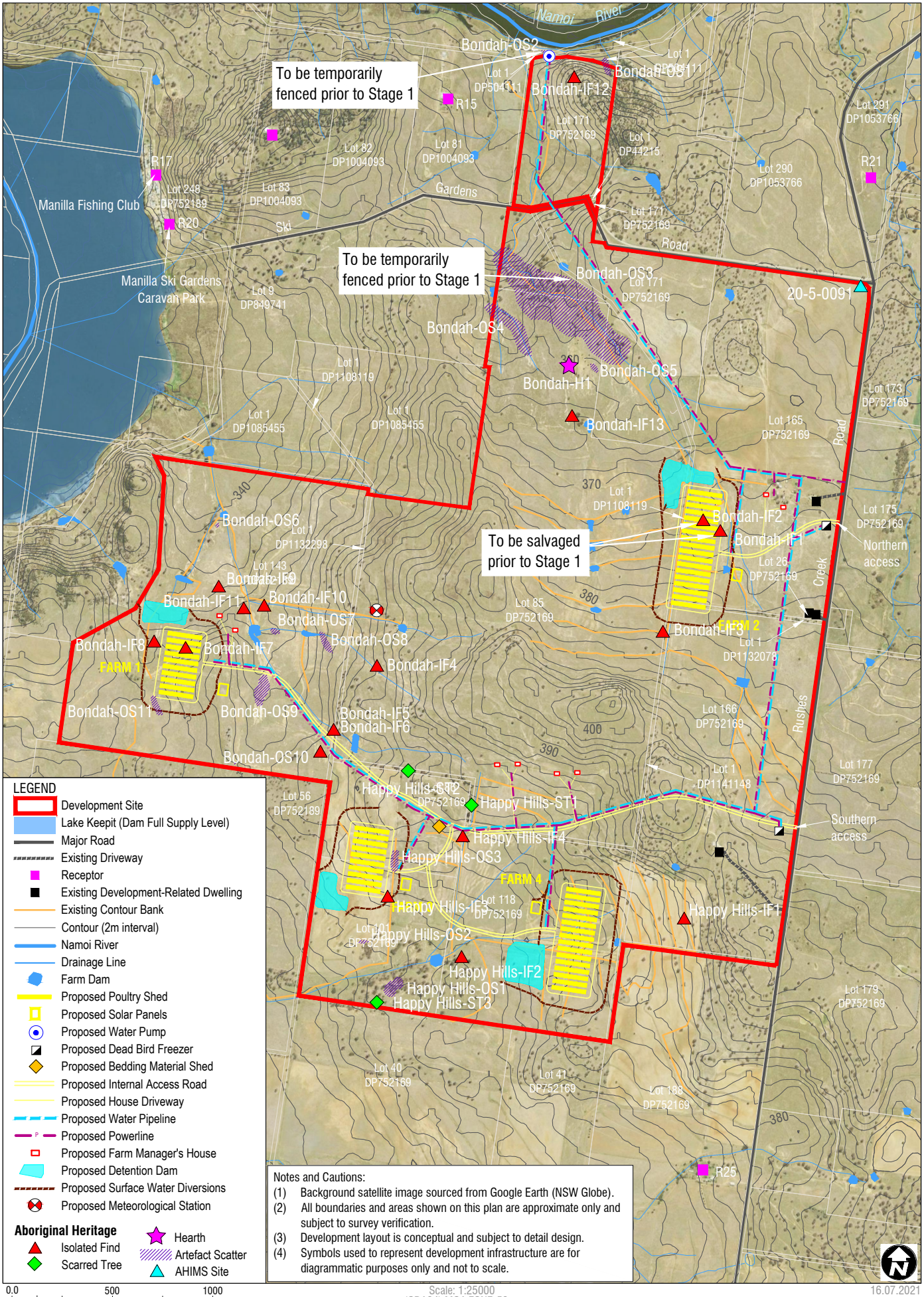
The remaining sites are removed from the impact area for Stage 1 and at no direct risk of harm during Stage 1.

Stage 1 Salvage

The two Aboriginal sites identified on **Figure 9** as Bondah-IF1 and Bondah-IF2 are within the disturbance footprint of Farm 2 (Stage 1) and have been approved for salvage by surface collection prior to disturbance/construction works commencing in this area. The preferred option for the long-term management of the salvaged artefacts is to relocate them within the Development Site near to Aboriginal sites Bondah-OS3 and Bondah-OS4. The salvage and relocation works will be undertaken by specialist archaeologists from OzArk and members of the Registered Aboriginal Parties in accordance with the approved ACHMP (OzArk 2021) contained in **Appendix F**.

Stage 1 Temporary Fencing

The two Aboriginal sites identified on **Figure 9** as Bondah-OS2 and Bondah-OS3 will be temporarily fenced due to their proximity to the Development to avoid unintentional impact during the construction of the nearby water and electricity supply infrastructure. These sites are to be fenced with a 10 m buffer and signed prior to construction commencing in accordance with the approved ACHMP (OzArk 2021) contain in **Appendix F**.



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EME advisory

Aboriginal Sites

FIGURE 9

5.8.2 Mitigation and Management

Table 16 lists the mitigation and management measures that will be implemented to minimise the risk to Aboriginal heritage during Stage 1 of the construction phase.

Table 16 Aboriginal Heritage Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Salvage and Fencing		
The two Aboriginal sites within the Stage 1 disturbance footprint, being Bondah-IF1 and Bondah-IF2, will be salvaged by surface collection and managed in accordance with the approved ACHMP (see **Appendix F**). The salvage and relocation works will be undertaken by specialist archaeologists from OzArk and Registered Aboriginal Parties.	NCM	Prior to construction
The two Aboriginal sites identified as Bondah-OS2 and Bondah-OS3 will be temporarily fenced with a 10 m buffer and signed in accordance with the approved ACHMP (see **Appendix F**) to avoid unintentional impact.	NCM	Prior to construction
General		
Employees and contractors will be made aware of the obligation to avoid harm to Aboriginal heritage during site inductions and training as outlined in the approved ACHMP (see **Appendix F**).	CSS	Induction - prior to commencing work. Toolbox talks – on-going.
No disturbance will occur outside of the approved disturbance footprint. Any alterations to the footprint will be assessed in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (Department of Environment, Climate Change and Water 2010).	CSS	Prior to construction and on-going
In the event that any known/suspected previously unrecorded Aboriginal sites are encountered, all work within the area will cease immediately and the *Discovery of Previously Unrecorded Aboriginal Sites - Unanticipated Finds Protocol* in **Appendix G** will be followed.	All employees and contractors	As required
In the event that any known/suspected Aboriginal skeletal material is encountered, all work within the area will cease and the *Aboriginal Heritage Skeletal Remains Protocol* in **Appendix H** will be followed.	All employees and contractors	As required

5.9 Potentially Dangerous Goods

Table 17 lists the mitigation and management measures that will be implemented to minimise the potential for environmental incidents due to the storage, handling and/or transport of potentially hazardous goods during construction.

Table 17 Dangerous Goods Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Chemicals, fuels and oils will be stored and handled in accordance with: • Relevant Australian Standards; and • The EPA's *Storing and Handling of Liquids: Environmental Protection, Participants Manual* (2007). In the event of an inconsistency between these documents, the most stringent requirement will apply to the extent of the inconsistency.	CSS	On-going
Dangerous goods will be stored and handled in accordance with: • Relevant Australian Standards; and • For liquids - a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund.	CSS	On-going
Diesel will be positioned away from chemical and petrol stores and away from anything else considered flammable.	CSS	On-going
Safety Data Sheets (SDS) for all chemicals, fuels and oils to be stored and/or used on-site will be kept in the Site Office and/or safety system.	CSS	On-going
The actions specified on the respective Safety Data Sheet (SDS) will be promptly implemented in the event of a chemical or fuel spill.	All employees and contractors	As required
A spill kit will be maintained at the Site Office.	CSS	On-going

5.10 Waste Management

5.10.1 Waste Types and Classification

Potential construction waste types along with their waste classification in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (2014) and intended reuse/recycling/disposal methods are listed in **Table 18**.

Table 18 Construction Waste Types, Classifications and Management

Waste Type	NSW Classification	Intended Reuse / Recycling / Disposal
Site Establishment, Excavation and Construction		
Green waste	General solid waste (non-putrescible)	On-site reuse and/or off-site composting and/or off-site disposal at licensed facility
Excavated material – VENM and/or ENM	General solid waste (non-putrescible)	On-site reuse
Concrete (solids and washouts)	General solid waste (non-putrescible)	On-site reuse and/or off-site recycling
Timber formwork	General solid waste (non-putrescible)	Off-site recycling
Plasterboard	General solid waste (non-putrescible)	Off-site recycling and/or disposal at licensed facility
Metal and bulk electrical cabling	General solid waste (non-putrescible)	Off-site recycling
Glass	General solid waste (non-putrescible)	Off-site recycling
Conduits and pipes	General solid waste (non-putrescible)	Off-site recycling
Sediment fencing, geotextile materials	General solid waste (non-putrescible)	Off-site recycling and/or disposal at licensed facility
Packaging		
Packaging materials, including wood, plastic (stretch wrap, LLPE), cardboard, metals, polystyrene	General solid waste (non-putrescible)	Off-site recycling and/or disposal at licensed facility
Wooden crates / pallets	General solid waste (non-putrescible)	Returned to suppliers, off-site reuse and/or off-site recycling
Plant Maintenance		
Tyres	Special waste	Off-site recycling and/or disposal at licensed facility
Empty chemical and fuel containers	Hazardous waste if containers previously used to store dangerous goods (Class 1, 3, 4, 5 or 8) and from which residues have not been removed by washing or vacuuming. General solid waste (non-putrescible) if the containers have been cleaned by washing or vacuuming.	Off-site reuse, recycling and/or disposal at licensed facility
Air and oil filters and rags	General solid waste (non-putrescible)	Off-site recycling and/or disposal at licensed facility
Batteries	Hazardous waste	Off-site recycling

Waste Type	NSW Classification	Intended Reuse / Recycling / Disposal
Site Office		
General daily waste	General solid waste (putrescible and non-putrescible)	Off-site disposal at a licensed facility (landfill)
Light bulbs / fluorescent tubes	Hazardous waste	Off-site recycling
Recyclable drink containers – glass/plastic bottles, tin cans	General solid waste (non-putrescible)	Off-site recycling
Clean paper and cardboard	General solid waste (non-putrescible)	Off-site recycling
Pump-out waste and septage (sewage)	Liquid waste (trade)	Off-site disposal at a licensed facility

5.10.2 Mitigation and Management

The mitigation and management measures listed in **Table 19** will be implemented to minimise waste generation and ensure waste is effectively managed/disposed of off-site during construction.

Table 19 Waste Mitigation and Management Measures

Control	Responsibility	Timing / Frequency
Waste streams will be managed in accordance with the reuse, recycling and/or disposal methods listed in **Table 18**.	All employees and contractors	On-going
Waste materials removed from the Development Site for reuse, recycling or disposal will be directed to a facility lawfully permitted to accept the respective material.	CSS	On-going
No disposal of construction waste materials will occur within the Development Site.	CSS	On-going
Waste materials generated outside the Development Site will not be received on-site for any purpose.	CSS	On-going
Appropriate waste skips/bins will be provided on-site and checked daily. If the skip/bin is reaching capacity, arrangements will be made for its removal and replacement within the next 24-48 hours.	CSS	On-going
All skips/bins leaving the Site will be suitably covered to avoid spillage and/or dust emissions during transit.	CSS	On-going
Packing wastes will be reduced, where possible, by returning packaging to the suppliers (e.g. pallets, reels), purchasing in bulk, requesting cardboard or metal drums (as opposed to plastics).	CSS	On-going
Only wastes that cannot be cost effectively reused or recycled will be sent to for disposal.	CSS	On-going
Any portable self-contained toilets and washroom facilities will be regularly serviced and emptied by a licensed contractor.	CSS	On-going

6 INSPECTIONS AND REPORTING

6.1 Construction Environmental Site Inspections

There are no specific monitoring requirements during the construction phase of the Development. Notwithstanding, various environmental site inspections will be undertaken during the construction phase to ensure on-going implementation and compliance with the CEMP and to identify any adverse impacts and required remedial actions. The environment site inspections to be completed are listed in **Table 20**.

Table 20 Construction Environmental Site Inspections

Inspection Requirement	Responsibility	Timing / Frequency
Pre-Construction		
Site inspection to ensure (a) All pre-construction requirements/commitments have been completed satisfactorily; (b) All necessary environmental mitigation and management measures are in place and effective; and (c) Any specific/required areas are demarcated (e.g. fenced, pegged, flagging tape) prior to commencing construction.	CSS	Prior to construction
During Construction		
Inspection of the construction area to ensure all mitigation and management measures are still in place and have not been removed/impacted by construction activities	CSS	Daily at the completion of construction
Inspection of upstream diversions and erosion and sediment controls to ensure they are operating effectively and at design capacity. Any required maintenance/remedial works will be promptly undertaken.	CSS	Weekly; and After significant rain
Inspection to assess the implementation of the various mitigation and management measures specified in the CEMP. Any required maintenance/remedial works will be promptly undertaken.	CSS	Monthly
Monthly inspection of rehabilitated areas to: • Assess the success of revegetation works; • Identify and undertake any required maintenance/remedial works (e.g. watering, re-seeding, fertiliser application); and • Remove temporary erosion and sediment controls on completion of the rehabilitation works.	CSS	Monthly following completion of disturbance until stable landform achieved (>70% permanent ground cover, excluding weeds)

N.B. Table 20 does not include inspections required for geotechnical and engineering aspects during construction

All environmental mitigation and management measures will be maintained in a functioning condition until individual construction/disturbance areas have been deemed complete and successfully rehabilitated (i.e. greater than 70% permanent ground cover, excluding weeds). Where any of the controls are observed to be not functioning correctly and/or adverse environmental impact is observed, appropriate remedial actions and/or additional mitigation measures will be promptly implemented. Where considered necessary, environmental specialists and/or relevant government agencies will be consulted and any instructions will be adhered to.

6.2 Reporting

6.2.1 Monthly Environmental Reporting

As listed in **Table 20**, monthly environmental site inspections will be undertaken to assess the implementation of the various mitigation and management measures listed in the CEMP. The findings of these monthly inspections will be documented in a Monthly Environmental Inspection Report provided to the National Construction Manager summarising the following:

- Appropriate implementation of the mitigation and management measures (relevant at the time) listed in the CEMP;
- Any identified environmental impacts and associated required remedial actions and/or additional mitigation measures;
- Any complaints received in the previous month and completed Complaint Report Form;
- Any environmental incidents that occurred in the previous month and completed Environmental Incident Report Form; and
- Any other identified issues that require attention.

This report will be in the form of a simple tick-box style form, with any additional detail attached as needed.

6.2.2 Incident Notification and Reporting

Development Consent SSD 7704 provides the following relevant definitions:

Incident *An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.*

Material harm *Is harm that:*

(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or

(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).

In accordance with consent condition C9 and the *Protection of the Environment Operations Act 1997* (POEO Act), there is a duty to notify any incident that causes or threatens to cause material harm to the environment. The notification responsibilities under section 148 of the POEO Act are summarised as:

Duty of an employee or any person undertaking an activity - any person engaged as an employee or undertaking an activity must, immediately after becoming aware of the incident, notify a member of ProTen's site management team (see **Table 7**) of the incident and all relevant information about it. If ProTen's site management team cannot be contacted, the person is required to notify the relevant authorities.

The duty of the employer or occupier of a premises - the member of ProTen's site management team who is notified (or otherwise becomes aware of) of the incident, must immediately notify the relevant authorities about the incident and all relevant information.

Under subsection 148(8) of the POEO Act, "relevant authority" means any of the following:

- The appropriate regulatory authority - in this case, DPIE;
- EPA;

- NSW Health;
- SafeWork NSW; and
- Fire and Rescue NSW.

Contact details for each of these authorities are provided in the CCP contained in **Appendix C**.

The following incident notification and reporting requirements apply under consent condition C9 and the POEO Act:

Immediate Notification

DPIE must be notified in writing to compliance@planning.nsw.gov.au immediately after becoming aware of the incident. The notification must identify the development and consent number, and set out the location and nature of the incident.

Other relevant authorities (see above) must be verbally notified immediately after becoming aware of the incident.

Written Notification

A written incident notification addressing the requirements set out in **Appendix I** must be issued to DPIE and the other relevant authorities within 7 days of becoming aware of the incident.

Written Report

A detailed report addressing the requirements set out in **Appendix I** must be issued to DPIE and the other relevant authorities within 30 days of the date on which the incident occurred (or as otherwise agreed to by DPIE), and such further reports as may be requested.

6.2.3 Non-Compliance Notification

Development Consent SSD 7704 provides the following relevant definition:

Non-compliance *An occurrence, set of circumstances or development that is a breach of this consent*

In accordance with consent condition C10, DPIE must be notified in writing to compliance@planning.nsw.gov.au within 7 days of becoming aware of any non-compliance. The notification must identify the development and consent number, and set out the consent condition that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

A non-compliance which has been notified as an incident (see **Section 6.2.2**) does not need to also be notified as a non-compliance.

6.2.4 EPL Annual Return

An Environment Protection Licence (EPL) Annual Return must be completed and submitted to the EPA via *eConnect EPA* or registered post no later than 60 days after the end of each reporting period (reporting period is defined as 12 months after the issue of the EPL and each subsequent period of 12 months).

At the end of each reporting period, the EPA will notify ProTen when the Annual Return is due. Returns must be submitted to the EPA by the due date and will be uploaded to the EPA's public register.

6.2.5 Summary

The reporting requirements detailed above in **Sections 6.2.1** to **6.2.4** are listed in **Table 21**.

Table 21 Reporting Requirements

Reporting Requirement	Description	Responsibility	Timing / Frequency
Monthly Environmental Reporting	Monthly environmental site inspection and report assessing the implementation of the various mitigation and management measures listed in the CEMP, along with any complaints or incidents. See **Section 6.2.1**.	CSS	Monthly
Incident notifications	Notification and subsequent reporting to DPIE and other relevant authorities of any incident that has caused or threatens to cause material harm to the environment in accordance with consent condition C9 and the POEO Act. See **Section 6.2.2**.	NCM CSS	Immediate notification – immediately after becoming aware of the incident. Written notification – within 7 days of becoming aware of the incident. Written report – within 30 days of the incident occurring or as otherwise agreed to by DPIE.
Non-compliance notifications	Notification to DPIE of any non-compliance with the development consent. See **Section 6.2.3**.	NCM CSS	Within 7 days of becoming aware of the non-compliance
EPL Annual Return	Report on the compliance status of the Development against the EPL conditions and provide a summary of monitoring and complaints data to the EPA. See **Section 6.2.4**.	SHEQ	Annually, within 60 days after the end of the 12 month EPL reporting period

7 COMPLAINTS MANAGEMENT STRATEGY

7.1 Performance Objective

To ensure that all complaints regarding the construction phase of the Development are promptly and effectively received, handled and addressed.

7.2 Responsibility

The Construction Site Supervisor and ProTen's Regional Operations Manager (ROM), who is nominated as a "central contact person" in the CPP, are responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of a complaint.

All employees and contractors who take receipt of a complaint, either verbal or written, are to immediately notify the CSS and/or ROM.

Construction Site Supervisor (CSS)	TBA	TBA
ProTen Regional Operations Manager (ROM)	Julian Johnson	Ph: 0406 484 474 Email: julianj@proten.com.au

7.3 Contact Details for Complaints

Complaints in relation to construction activities may be received via a number of ways, including:

- In writing - via PO Box 1746, North Sydney NSW 2059;
- Phone - via ProTen's toll-free environmental hotline 1800 776 994;
- Email - via headoffice@proten.com.au; or
- Through a regulatory authority (for example - EPA, Council).

The contact details for complaints will be advertised to the general public in the following ways:

Site Signage

A clearly visible sign/s will be erected adjacent to the construction site access off Rushes Creek Road prior to commencing construction. The sign/s will advise relevant site information and contact details for feedback, enquiries and complaints. The sign/s will remain throughout the construction phase.

Local Newspaper

An advert will be published in the local newspaper prior to commencing construction to advise contact details for feedback, enquiries and complaints.

7.4 Handling Procedure

Receive

In the normal course of events, the first contact for complaints will usually be made in person or by telephone. While this should instigate investigative action, a formal written complaint should be requested.

Where the initial contact reaches an employee or contractor who is not a representative of ProTen's site management team, the call should be directed to the CSS or ROM. If unavailable, the complainant's details should be taken with a view to returning the contact once the CSS/ROM is available and in a position to discuss the matter.

The complainant's name, address and contact details, along with the nature of the complaint, must be requested. If the complainant refuses to supply the requested information, a note should be made on the form and complainant advised of same.

Assistance

Where assistance is required handling the situation, ProTen's National Construction Management (NCM) and/or ProTen's Safety, Health, Environment and Quality (SHEQ) Advisor should be contacted.

ProTen National Construction Manager (NCM)	Adrian McKinnon	Ph: 0427 208 971 Email: adrianm@proten.com.au
ProTen Safety, Health, Environment & Quality Advisor (SHEQ Advisor)	Kathryn Singh	Ph: 02 6962 1770 / 0434 550789 Email: kates@proten.com.au

Where the complaint is reported via a regulatory authority (for example - EPA, Council), ProTen's CEO should be notified immediately.

Investigate

A field investigation should be initiated in an attempt to establish the legitimacy of the complaint and the cause of the problem. The CSS should be consulted to identify any abnormality or incident that may have resulted in the complaint. Details may include heavy vehicle traffic, or equipment and machinery activities.

If the complaint is due to an environmental incident, the *Environmental Incident Management Strategy* contained in **Section 8** should be followed. If the incident has caused or threatens to cause material harm to the environment, the DPIE and other relevant regulatory authorities must be immediately notified and reports prepared in accordance with condition C9 of the development consent (see **Section 6.2.2**).

Remedial Action

Once the legitimacy and cause of the complaint has been established, every possible effort must be made to undertake appropriate remedial action(s) to fix the cause of the complaint and mitigate any further impact.

Inform

The investigative work and remedial action should be reported back to the complainant and, if necessary, the relevant regulatory authorities.

Complaints Register

It is imperative that an honest assessment of the situation is carried out and documented. Every complaint received is to be recorded on ProTen's standard *Complaint Report Form* contained in **Appendix J** and a copy of the complete form is to be maintained in the Development's *Complaints Register* for a minimum of 4 years.

7.5 Preventative Action

Once the complaint has been suitably handled, appropriate preventative measures should be identified and implemented to negate the possibility of re-occurrence. This CEMP should be reviewed with the aim of identifying any opportunities to avoid the possibility of re-occurrence and improve the environmental performance of the development.

7.6 Dispute Resolution

If the complaints management strategy has been followed and a particular issue cannot be resolved, the complaint will be referred to ProTen's CEO for further review and DPIE will be notified. The escalated review process will include an assessment of the details of the complaint received, any findings of the investigation undertaken in response to the complaint, and any further matters raised by the complainant. It may also include ProTen's CEO seeking the advice of relevant regulatory authorities and/or specialist consultants.

If required, a third-party independent mediator may be engaged to help resolve the dispute.

8 ENVIRONMENTAL INCIDENT MANAGEMENT STRATEGY

8.1 Definitions

Development Consent SSD 7704 provides the following definitions:

Incident *An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.*

Material harm *Is harm that:*
(a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or
(b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).

8.2 Performance Objective

To ensure that any environmental incident caused by or relating to the construction of the Development is promptly and effectively identified, handled and addressed, and any resulting adverse impact is promptly and effectively prevented, mitigated or managed.

8.3 Responsibility

The Construction Site Supervisor (CSS) and ProTen's National Construction Manager (NCM) are responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an environmental incident.

All employees and contractors are to:

- Notify the CSS and/or NCM about any hazard or potential hazard that may result in an environmental incident, regardless of the nature or scale;
- Take immediate action to notify the CSS and/or NCM of any environmental incident; and
- Take immediate action (where it is safe to do so) to prevent, stop, contain and/or minimise the environmental impact of the incident.

Construction Site Supervisor (CSS)	TBA	TBA
ProTen National Construction Manager (NCM)	Adrian McKinnon	Ph: 0427 208 971 Email: adrianm@proten.com.au

8.4 Notifications and Reporting

In accordance with consent condition C9 and the POEO Act, there is a duty to notify and report any incident that causes or threatens to cause material harm to the environment. The notification and reporting requirements are provided in **Section 6.2.2**.

8.5 Handling Procedure

Preventative Action

Where possible and it is safe to do so, immediate action should be taken to prevent, stop, contain and/or minimise the environmental impact of the incident. The situation should be visually assessed and emergency response undertaken if required.

In the unlikely event that a pollution incident requires site evacuation, actions will be completed in accordance with the Site Evacuation Procedure. All employees and contractors will be informed of the location of emergency assembly areas through site inductions and toolbox talks.

Assistance

Where assistance is required handling the situation, ProTen's Safety, Health, Environment and Quality (SHEQ) Advisor, Regional Operations Manager (ROM) and/or Risk Manager should be contacted.

ProTen Safety, Health, Environment & Quality Advisor (SHEQ Advisor)	Kathryn Singh	Ph: 02 6962 1770 / 0434 550789 Email: kates@proten.com.au
ProTen Regional Operations Manager (ROM)	Julian Johnson	Ph: 0406 484 474 Email: julianj@proten.com.au
ProTen Risk Manager	Jim Rimmer	Ph: 02 6962 1770 / 0438 750974 Email: jrimmer@proten.com.au

Where the incident is reported via a regulatory authority (for example - EPA, Council), ProTen's CEO should be notified immediately.

If adequate resources are not available and the incident threatens public health or property, Fire and Rescue NSW should be contacted by telephoning "000" for emergency assistance.

Investigate

A field investigation should be initiated in an attempt to determine the cause of the incident.

In the event of a serious emergency or pollution incident, it is more than likely that Fire and Rescue NSW and/or the EPA will take control and manage the required investigation and remedial activities. Any instructions issued must be strictly adhered to.

Remedial Action

Once the cause of the incident has been established, every possible effort must be made to undertake appropriate remedial action(s) to fix the cause of the incident and mitigate any further impact. In some instances, outside resources such as specialist contractors/consultants may be required.

Incidents Register

It is imperative that an honest assessment of the situation is carried out and documented. Every environmental incident is to be recorded on ProTen's standard *Environmental Incident Report Form* contained in **Appendix K** and a copy of the complete form is to be maintained in the Development's *Incidents Register* for a minimum of 4 years.

8.6 Preventative Action

Once the incident has been suitably handled, appropriate preventative measures should be identified and implemented to negate the possibility of re-occurrence. This CEMP should be reviewed with the aim of identifying any opportunities to avoid the possibility of re-occurrence and improve the environmental performance of the development.

9 CEMP REVIEW AND UPDATE

ProTen will evaluate the performance and effectiveness of the environmental protection and management measures in this CEMP on a regular basis throughout Stage 1 of the construction phase. Key elements of the evaluation will include reviewing whether the objectives of the CEMP have been achieved as evidenced by the following performance indicators:

- Identified deficiencies and/or non-compliances with the development consent and/or this CEMP;
- The nature and number of complaints relating to construction activities;
- Any environmental incidents caused by construction activities; and
- Any general feedback received in relation to construction activities and associated environmental management from the local community and/or regulatory authorities.

This CEMP will be reviewed and, if necessary, updated to improve the environmental performance of the development within 3 months of any of the following:

- If an evaluation of the above performance indicators demonstrates that the objectives of the CEMP are not being adequately met;
- Submission of an incident report;
- Submission of a non-compliance report;
- Approval of any modification of the consent conditions; and/or
- A request by DPIE.

Where revisions are required, the updated CEMP will be submitted to DPIE for approval within 6 weeks of the review.

As advised in **Table 8**, ProTen's National Construction Manager has the authority to approve minor amendments to the CEMP. For the purpose of this CEMP a "minor" amendment is defined as:

- An amendment involving a minor error or misdescription;
- An amendment that maintains compliance with the EIS, RTS, Supplementary RTS and Development Consent SSD 7704;
- An amendment that is necessary to maintain consistency and/or compliance with changing legislative requirements (for example, an amendment to an Act);
- An amendment to the ProTen contact details listed in **Table 7** when roles change; and
- An amendment to the ProTen roles and responsibilities listed in **Table 8** that does not involve deleting any responsibilities.

All employees and contractors will be informed of any updates to the CEMP during toolbox talks.

10 REFERENCES

Department of Environment and Climate Change (2007) *Storing and Handling Liquids: Environmental Protection - Participants Handbook*

Department of Environment, Climate Change and Water (2010) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*

EME Advisory (2019a) *Rushes Creek Poultry Production Farm, SSD 7704, Response to Submissions*

EME Advisory (2019b) *Rushes Creek Poultry Production Farm, SSD 7704, Supplementary Response to Submissions*

EME Advisory (2021a) *Rushes Creek Poultry Production Farm, SSD 7704, Section 4.55(1A) Modification Report*

EME Advisory (2021b) *Rushes Creek Poultry Production Farm, Development Consent SSD 7704, Community Consultation Plan*

Environment Protection Authority (2014) *Waste Classification Guidelines Waste Classification Guidelines Part 1: Classifying Waste*

Landcom (2004) *Managing Urban Stormwater: Soils and Construction Volume 1*

Office of Environment and Heritage (2012) *Erosion and Sediment Control on Unsealed Roads*

OzArk Environmental and Heritage Management (2021) *Aboriginal Cultural Heritage Management Plan, Rushes creek Poultry Farm*

SLR Consulting Australia (2018) *Environmental Impact Statement, Intensive Livestock Agriculture, Rushes Creek Poultry Production Farm, SSD 7704*

SLR Consulting Australia (2021a) *Revised Remedial Action Plan, Proposed Poultry Production Farm*

SLR Consulting Australia (2021b) *Construction Traffic Management Plan, Rushes Creek Poultry Production Farm*

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix A

Construction Traffic Management Plan

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Rushes Creek Poultry Production Farm

Prepared for:

ProTen Tamworth Pty Ltd
PO Box 1746
North Sydney NSW 2060



SLR Ref: 620.30288-R01
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PREPARED BY

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Tamworth Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
620.30288-R01-v0.3	Draft for Road Authority Review	7 April 2021	Chris Lawlor	Jeff Baczynski	Chris Lawlor
620.30288-R01-v1.0	Final – Post Road Auth. Review	11 June 2021	Chris Lawlor	Jeff Baczynski	Jeff Baczynski

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1 Introduction

1.1 Context

SLR Consulting Australia Pty Ltd (SLR) has been engaged by ProTen Tamworth Pty Ltd (ProTen) to prepare a Construction Traffic Management Plan (CTMP) for the Rushes Creek Poultry Production Farm (Rushes Creek PPF or the Development) located at Rushes Creek Road, Rushes Creek NSW.

The CTMP is required to satisfy Schedule 2, Part B (*Environmental Conditions*), Conditions B10 and B11 (*Construction Traffic Management Plan*) of the Development Consent issued by the NSW Government Department of Planning, Industry and Environment (DPIE) on 16 April 2020 (Development Consent).

This CTMP has been prepared by Chris Lawlor, whom DPIE has approved as 'a suitably qualified and experienced person'. A copy of this approval is included at Appendix A.

1.2 CTMP Requirements

This CTMP has been prepared to satisfy the requirements of Schedule 2, Part B, Conditions B10 and B11 of the Development Consent, and to manage the potential impacts of the traffic demands associated with the construction phase of the Development on the surrounding road network. The specific requirements of the conditions to prepare a CTMP are reproduced in Table 1 along with a response as to how each requirement has been addressed herein.

This CTMP is intended to be a living document that will be implemented effectively over the life of the project to manage safety for all road users. Details of the CTMP monitoring, review and an improvement process that is triggered by any incidents that may occur is identified in Section 7.0.

Table 1 CTMP Requirements: Schedule 2, Part B, Conditions B10 and B11

Item	Condition Requirement	CTMP Section
B10.	*Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:*	-
(a)	*be prepared by a suitably qualified and experienced person(s);*	Section 1.1 & Appendix A
(b)	*be prepared in consultation with Council and Transport for NSW;*	Section 1.3, Appendix B & Appendix C
(c)	*detail the measures that are to be implemented to ensure road safety and network efficiency during construction;*	Section 6
(d)	*detail heavy vehicle routes, access and parking arrangements;*	Sections 3.3, 3.4, 6.2 & 6.3.2
(e)	*include a Driver Code of Conduct to:* *(i) minimise the impacts of earthworks and construction on the local and regional road network;* *(ii) minimise conflicts with other road users;* *(iii) minimise road traffic noise; and* *(iv) ensure truck drivers use specified routes;*	Section 6.1 & Appendix I
(f)	*include a program to monitor the effectiveness of these measures; and*	Section 7.3
(g)	*if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.*	Section 6.5
B11.	*The Applicant must:*	-
(a)	*not commence construction until the Construction Traffic Management Plan required by condition B10 is approved by the Planning Secretary; and*	Section 7.1
(b)	*implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction.*	Section 7.1

1.3 Road Authority Consultation

Schedule 2, Part A (*Administrative Conditions*), Condition A11 (*Evidence of Consultation*) of the Development Consent states the following with regard to consultation for management plans:

"Where conditions of this consent require consultation with an identified party, the Applicant must:

(a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and

(b) provide details of the consultation undertaken including:

(i) the outcome of that consultation, matters resolved and unresolved; and

(ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved."

Schedule 2, Part B, Condition B10(b) requires that the CTMP "*be prepared in consultation with Council and Transport for NSW*". Reflective of the above, Transport for NSW (TfNSW) and Tamworth Regional Council (TRC) have been contacted by SLR. A summary of the road authority consultation is provided at Appendix B and evidence of the consultation is included at Appendix C.

Importantly it is noted that this final version of the CTMP incorporates updates based on stakeholder input received on the draft version of the CTMP. In particular, this finalised version of the CTMP identifies monitoring, review and improvement processes that will be implemented to address any issues identified throughout the project lifecycle.

1.4 Previous Traffic Assessments

Reference is made to the following traffic assessments which have previously been prepared in relation to the operational phase of the Development:

- *Traffic Impact Assessment* report dated 25 June 2018 prepared by RoadNet (RoadNet TIA);
- *Supplementary Traffic Assessment* dated 20 December 2018 prepared by SLR (SLR STA).

The above traffic assessments are referred to herein where necessary.

2 Development Overview

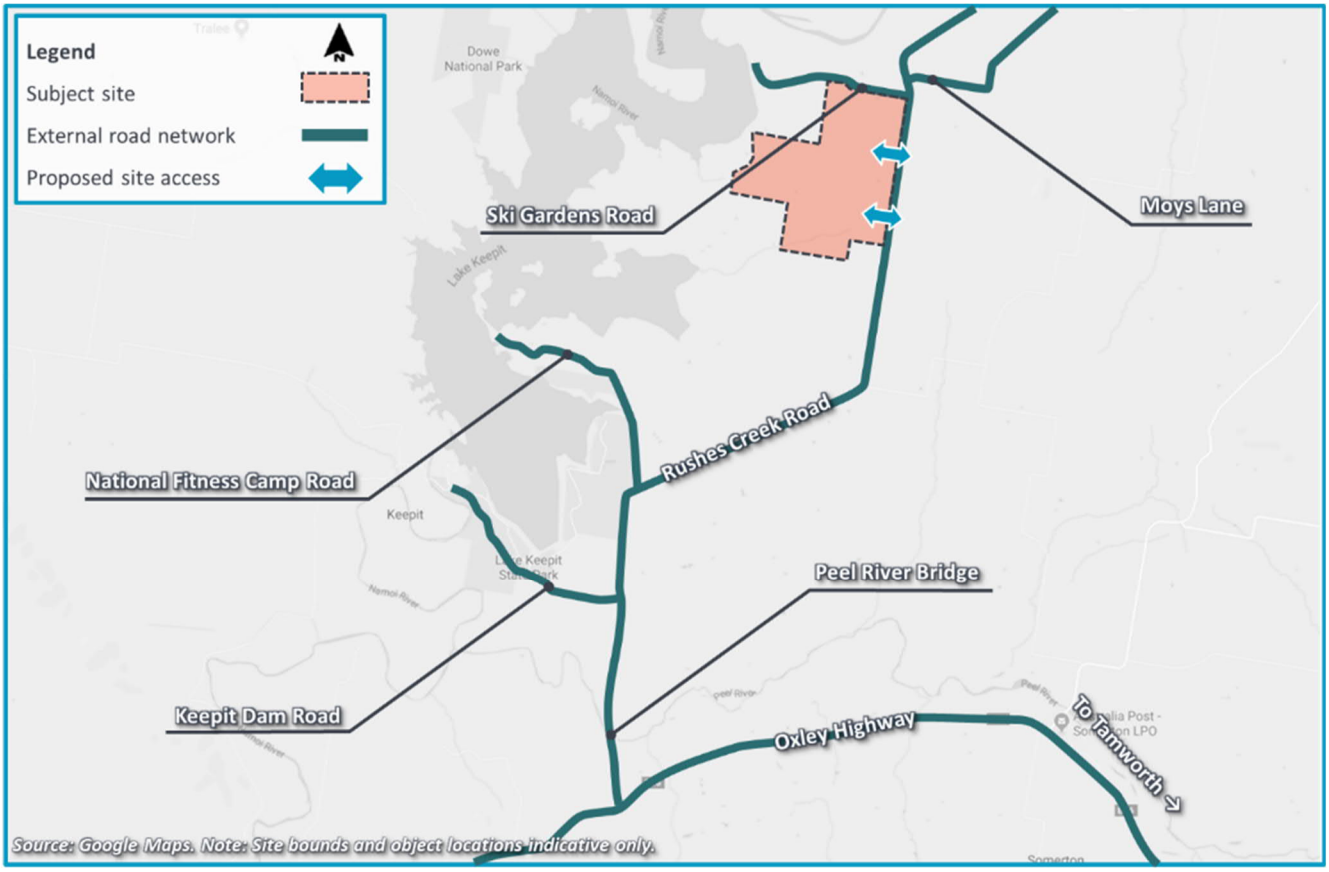
2.1 Site Location

The subject site comprises approximately 1,016 hectares (ha) of rural land in an area known as Rushes Creek situated approximately 43 kilometres (km) northwest of Tamworth and 33km northeast of Gunnedah within the Tamworth Regional Local Government Area (LGA) in the New England North West Region of NSW.

The site is zoned as 'RU1 Primary Production' under the provisions of the Tamworth Regional Local Environmental Plan (Tamworth LEP) and is bound by Rushes Creek Road to the east and rural uses in all other directions. Rushes Creek Road is a sealed two-lane rural road and connects the subject site to the Oxley Highway (NSW State Route B56) to the south. The Namoi River is located to the north of the site and Lake Keepit is located to the west and southwest.

The site is shown in the context of the surrounding area on Figure 1.

Figure 1 Site Location



2.2 Surrounding Road Network

Details of the key roads surrounding the subject site are detailed in Table 2.

Table 2 Key Roads

Road Name	Classification	Authority	Existing form	Posted Speed
Oxley Highway	State Road	TfNSW	Two lane, undivided single carriageway (~7.0m + shoulders), rural cross-section (swales)	100km/h
Rushes Creek Road	Unclassified	TRC	Two lane, undivided single carriageway (6.5 – 7.0m seal width), rural cross-section (swales)	100km/h

Of note, the previous traffic assessments (i.e. RoadNet TIA and SLR STA) conducted for the operational phase of the Development identified the following of relevance in relation to the Oxley Highway/Rushes Creek Road intersection and Rushes Creek Road:

- No patterns of crashes or existing safety deficiencies were identified;
- The existing linemarking and signage provided in the vicinity of the Oxley Highway/Rushes Creek Road intersection is generally compliant with current design standards;
- Appropriate allowances are available at the existing Oxley Highway/Rushes Creek Road intersection in order to accommodate 25m B-Double movements (note, both the Oxley Highway and Rushes Creek Road are approved 25/26m B-Double routes);
- That Rushes Creek Road is of a suitable existing form to accommodate 25m B-Double movements.

2.3 Approved Development

Schedule 1 of the Development Consent permits the following development on the subject site:

"Construction and operation of the Rushes Creek Poultry Production Farm, including:

- *Four poultry farms consisting of a total of 54 fully enclosed, tunnel ventilated poultry sheds;*
- *A maximum operational capacity of 3,051,000 birds at any one time;*

Additional works, as described in the application include:

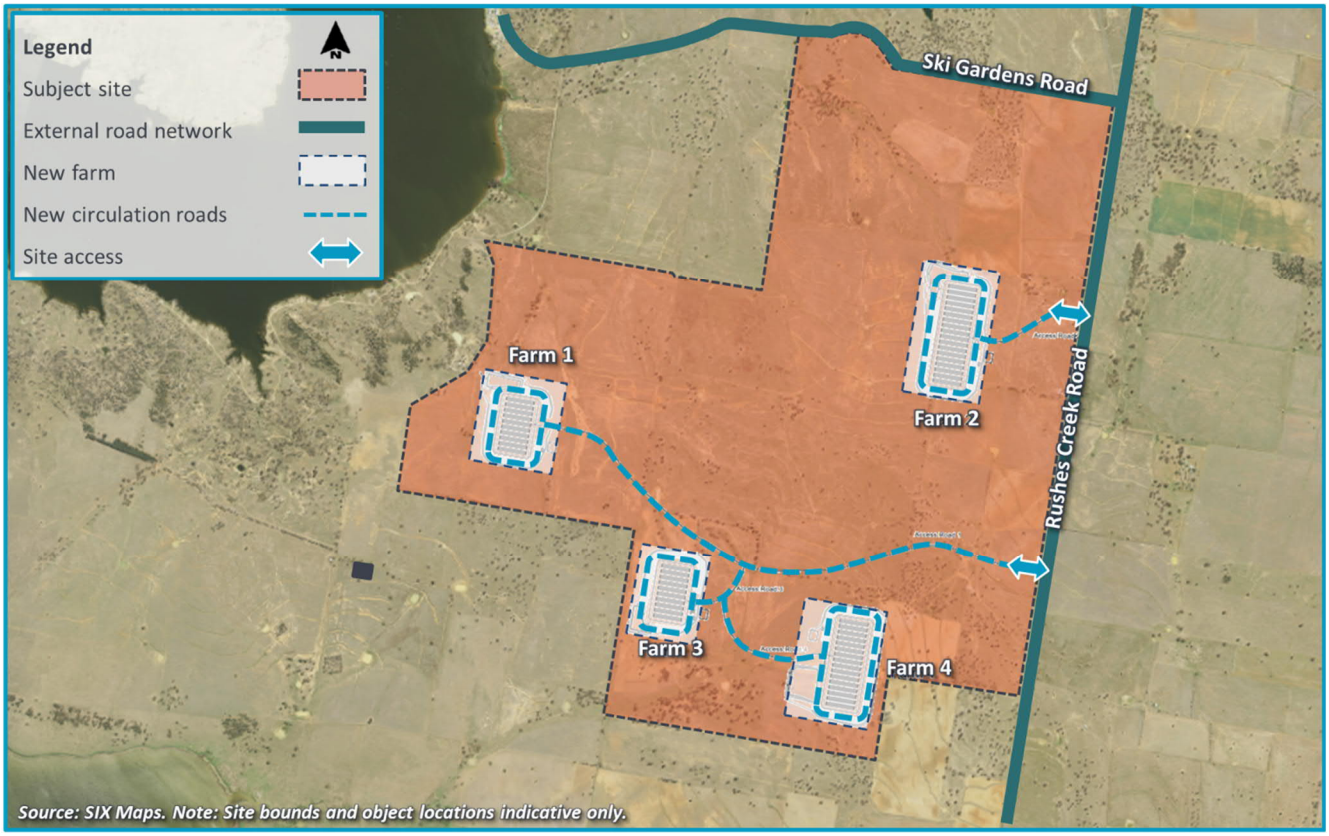
- *Eight manufactured homes to accommodate farm managers;*
- *Two access driveways from Rushes Creek Road and internal access roads;*
- *Water supply infrastructure to extract, transfer, treat and store water from the Namoi River;*
- *Reticulated electrical supply infrastructure;*
- *Bedding material storage shed;*
- *Two dead bird freezers; and*
- *Boundary adjustments."*

A summary of aspects of relevant aspects of the Development is provided in Table 3 and the approved site layout and external access arrangements are indicatively illustrated on Figure 2.

Table 3 Summary of Approved Development

Farm	Number of Sheds	External Site Access
1	10 sheds	Via southern driveway crossover
2	18 sheds	Via northern driveway crossover
3	10 sheds	Via southern driveway crossover
4	16 sheds	Via southern driveway crossover

Figure 2 Approved Site Layout and External Access Arrangements



2.4 Development Traffic Generation – Operational Phase

The RoadNet TIA indicated that the Development is anticipated to generate the following peak traffic demands during the operational phase:

- Up to 72 vehicles per day (vpd) consisting of 26 light vehicle movements and 46 heavy vehicle movements;
- AM peak hour:
  - Light vehicles: 12 vehicles per hour (vph) (9vph inbound, 3vph outbound);
  - Heavy vehicles: 5vph (3vph inbound, 2vph outbound);
  - Total: 17vph (12vph inbound, 5vph outbound).
- PM peak hour:
  - Light vehicles: 12 vehicles per hour (vph) (3vph inbound, 9vph outbound);
  - Heavy vehicles: 5vph (2vph inbound, 3vph outbound);
  - Total: 17vph (5vph inbound, 2vph outbound).

The traffic distribution adopted by the RoadNet TIA for Development traffic was as follows:

- Light vehicles:
  - 80% to east via Oxley Highway;
  - 15% to west via Oxley Highway;
  - 5% to north via Rushes Creek Road.
- Heavy vehicles: 100% to east via Oxley Highway.

3 Construction Phase Overview

3.1 Construction Activities and Staging

Construction of the Development is proposed to occur over two separate stages as summarised in Table 4, along with the key activities proposed and anticipated duration of each stage. Indicative staging plans for the construction phase of the Development have been prepared by Agribiz and are included at Appendix D. A detailed breakdown of construction activities and associated traffic volumes has been provided by Agribiz and is included at Appendix E.

Table 4 Construction Stages and Duration

Stage	Key Activities	Duration
1	A. Construction of the northern site access to Rushes Creek Road.	15 months
	B. Construction of the Farm 2 (18 sheds)	
2	A. Construction of the northern site access to Rushes Creek Road.	15 months
	B. Construction of the Farm 4 (16 sheds)	
	C. Construction of the Farm 3 (10 sheds)	10 months
	D. Construction of the Farm 1 (16 sheds)	10 months
Total		50 months

At this stage, it is anticipated that construction of Stage 1 of the Development will commence in mid-2021, with completion in 2022. Construction of Stage 2 is expected to commence in 2022, with completion anticipated in 2025. It is understood that each individual farm will begin operating immediately following the completion of construction.

The majority of construction activities will occur wholly within the subject site, with the exception of construction of the northern and southern site access to Rushes Creek Road, and also for the installation of water and electrical supply infrastructure under Ski Gardens Road. It is understood that no import/export of fill/cut external to the site is required as part of the construction phase of the Development.

3.2 Hours of Operation

As per Schedule 2, Part B, Condition B25 of the Development Consent, earthworks and construction activities are restricted to the following hours of work:

- Monday to Friday: 7AM to 6PM;
- Saturday: 8AM to 1PM.

Schedule 2, Part B, Condition B26 of the Development Consent permits works that are inaudible at the nearest sensitive receivers can be undertaken outside of the above hours.

3.3 Site Access

The construction of the proposed site accesses to Rushes Creek Road will be staged as follows:

- The northern site access construction (i.e. Stage 1A) will occur prior to the construction of Farm 2;
- The southern site access construction (i.e. Stage 2A) will occur prior to the construction of Farms 4, 3 and 1.

Each of the new site accesses will consist of the following treatments:

- Sealed driveway crossovers between Rushes Creek Road and the site boundary, sufficient to accommodate the swept paths of 25m B-Doubles entering and exiting the site;
- Site access roads will be sealed for a minimum of 50m into the site from Rushes Creek Road;
- Pavement widening will be provided on Rushes Creek Road to accommodate Basic Left (BAL) turn treatments.

There are existing site accesses off Rushes Creek Road that are available for vehicles associated with the site preparation works, and therefore vehicles associated with the construction of the site accesses are able to park, unload and load within the subject site (i.e. vehicles are not required to stand within the road reserve external to the site).

3.4 Internal Circulation Roads, Car Parking and Loading Unloading Areas

Indicative construction staging plans have been prepared by Agribiz are included at Appendix D. The plans indicate the following proposed provisions for the construction phase of the Development:

- Internal circulation roads will be consistent with that proposed for the operational phase of the Development as indicated on Figure 2 (i.e. all-weather type unsealed roads);
- Unsealed car parking areas will be provided for contractors. It is anticipated that a maximum of 27 contractors will be present on-site at any one time during the construction of each farm, and hence car parking should be provided to accommodate up to 27 vehicles. The spatial provisions indicated on the plans provided at Appendix D are broadly consistent with this requirement;
- A number of laydown areas are proposed within each farm construction site for the loading/unloading of heavy vehicles.

Car parking and laydown areas should be signed accordingly to assist in identification of these areas for contractors and delivery drivers.

3.5 Construction Phase Traffic Demands

A detailed breakdown of construction activities and associated traffic volumes has been provided by Agribiz and is included at Appendix E. The breakdown of traffic volumes for each month throughout the construction phase of the Development indicates the following peak monthly traffic demands for each stage of the construction:

- Stage 1 (month 5 of construction):
  - Light vehicles: 1,358 trips (97% of total);
  - Heavy vehicles: 54 trips (3% of total);
  - All vehicles: 1,412 trips.
- Stage 2 (month 5 of construction):
  - Light vehicles: 1,358 trips (97% of total);
  - Heavy vehicles: 54 trips (3% of total);
  - All vehicles: 1,412 trips.

The peak monthly construction phase traffic volumes were broken down into peak daily volumes using the following conservative assumptions:

- Average month of 30 days;
- Consistent with the hours of operation as per Section 3.2, 5.5 work days per week;
- Reflective of the above assumptions, adopting an average of 23.6 working days per month (i.e. 30/7 X 5.5 = 23.6).

Reflective of the above assumptions, the peak daily traffic volumes anticipated during the construction phase of the Development are presented in Table 5.

Table 5 Construction Phase - Peak Daily Traffic Volumes

Stage/Access	Light Vehicles	Heavy Vehicles	All Vehicles
Stage 1 – Northern site access	58vpd	2vpd	60vpd
Stage 1 – Southern site access	58vpd	2vpd	60vpd

vpd = vehicles per day

Table 5 indicates that the construction phase of the Development is forecast to generate up to 60vpd during peak months, consisting of 58 light vehicle trips and two heavy vehicle trips per day. As indicated by the information provided at Appendix E, the largest anticipated design vehicle is a 20m Articulated Vehicle (AV) (i.e. 'semi trailer').

The peak daily traffic volumes in Table 5 have been converted into peak hour traffic in Table 6 using the following conservative assumptions:

- All light vehicles (i.e. primarily associated with site personnel and contractors) would enter or exit the site during peak hour periods (i.e. 50% of daily trips during the AM peak hour, 50% of daily trips during the PM peak hour);
- Heavy vehicle trips (i.e. primarily associated with deliveries of equipment or machinery) would be distributed across the day, with 10% of trips occurring during the AM and PM network peak hours.

Table 6 Construction Phase - Peak Hour Traffic Volumes

Stage/Access	Light Vehicles	Heavy Vehicles	All Vehicles
Stage 1 – Northern site access	29vph	0vph	29vph
Stage 2 – Southern site access	29vph	0vph	29vph

vph = vehicles per hour

The following distribution of light and heavy vehicle trips has been adopted for the construction phase of the Development generally consistent with the RoadNet TIA:

- Light vehicle trips:
  - East via Oxley Highway: 85%;
  - West via Oxley Highway: 15%.
- Heavy vehicle trips:
  - East via Oxley Highway: 100%.

Conservatively, all trips during the AM peak hour have been assumed to be inbound trips, and all trips during the PM peak hour have been assumed to be outbound trips.

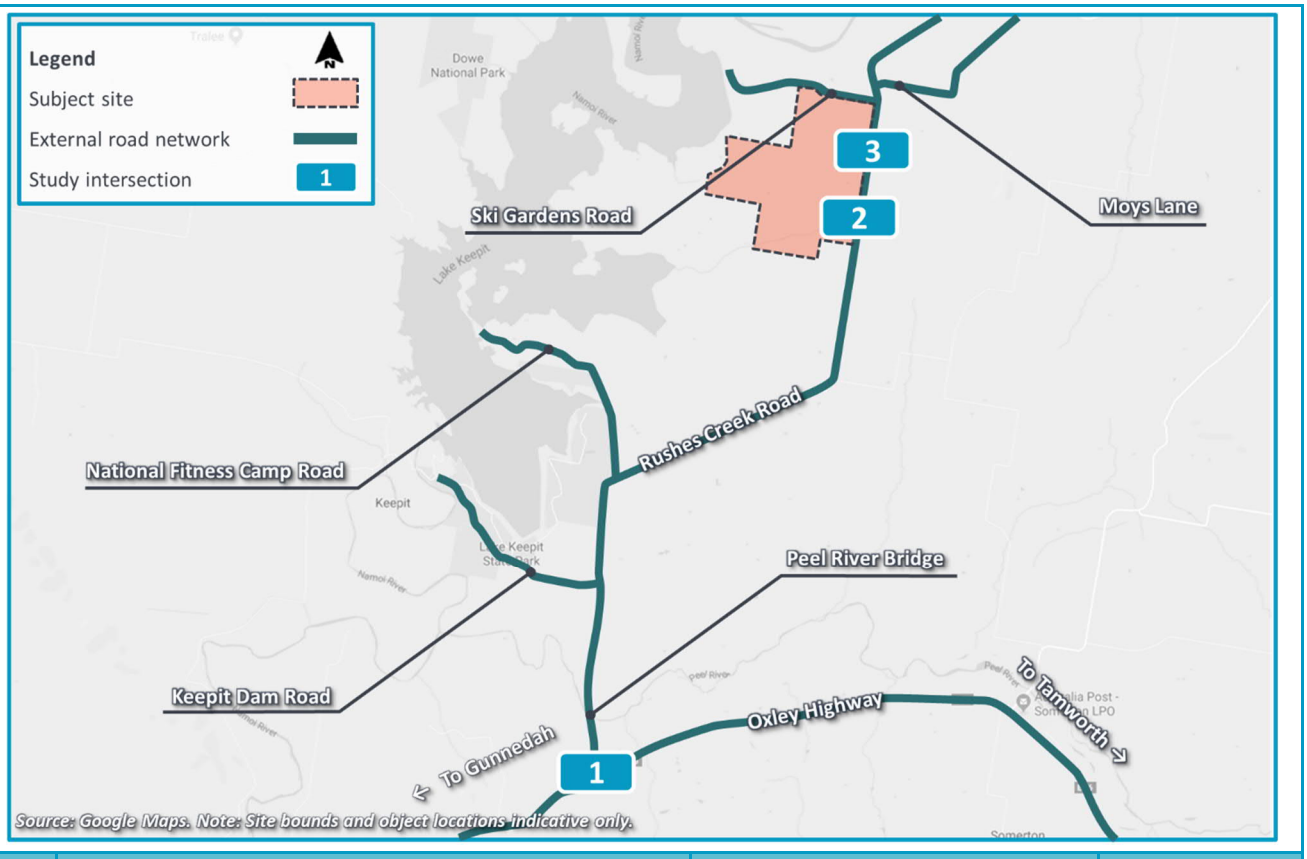
Reflective of all assumptions documented above, the traffic volumes utilised for the operational assessment are included at Appendix F.

4 Operational Assessment

4.1 Study Intersections

A detailed analysis of the potential impacts of the combination of construction and operational phase traffic demands associated with the Development on the operation of the external road network has been undertaken at the locations indicated on Figure 3.

Figure 3 Study Intersections



ID	Intersection	Intersection Form	Authority
1	Oxley Highway/Rushes Creek Road		TfNSW
2	Rushes Creek Road/Southern Site Access		GCC
3	Rushes Creek Road/Northern Site Access		GCC

4.2 Assessment Scenario

An operational assessment of study intersections has been undertaken for a conservative assessment scenario consisting of the following traffic demands:

- 2025 background traffic demands (i.e. based on surveyed traffic volumes and 2% per annum growth on all roads as per the RoadNet TIA); *plus*
- Development operational phase traffic demands (i.e. as per the RoadNet TIA); *plus*
- Development construction phase traffic demands (i.e. as per Section 3.5 herein).

The operation of the road network has been assessed for the above scenario during both the weekday AM and PM peak hour periods in SIDRA Intersection. Assessment traffic volumes are included at Appendix F.

4.3 Performance Criteria

Study intersections have been assessed in SIDRA Intersection; an industry recognised analysis tool used to estimate the capacity and performance of intersections based on input parameters, including geometry and traffic volumes. SIDRA Intersection provides an estimate of an intersection's Degree of Saturation (DOS), queues and delays. The performance thresholds adopted for the operational assessment reported herein are detailed below.

4.3.1 Degree of Saturation

The maximum DOS thresholds identified by the Austroads *Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments* (AGTM12-20) for each intersection type are reproduced in Table 7.

Table 7 Degree of Saturation Thresholds

Intersection Type	DOS Threshold
Signalised intersections	Less than or equal to 0.90
Roundabouts	Less than or equal to 0.85
Priority controlled intersections	Less than or equal to 0.80

DOS values exceeding those presented in Table 7 indicate that an intersection is nearing its practical capacity and upgrade works may be required. Above these threshold values, users of the intersection are likely to experience rapidly increasing delays and queuing.

4.3.2 Critical Delay

The RMS (now TfNSW) *Guide to Traffic Generating Developments* (2002) recommends that the average delay statistic for the critical movement provides a better indication of intersection performance and safety for roundabouts and priority-controlled intersections than DOS. A summary of the delay thresholds recommended by TfNSW is provided in Table 8.

Table 8 Critical Delay Thresholds

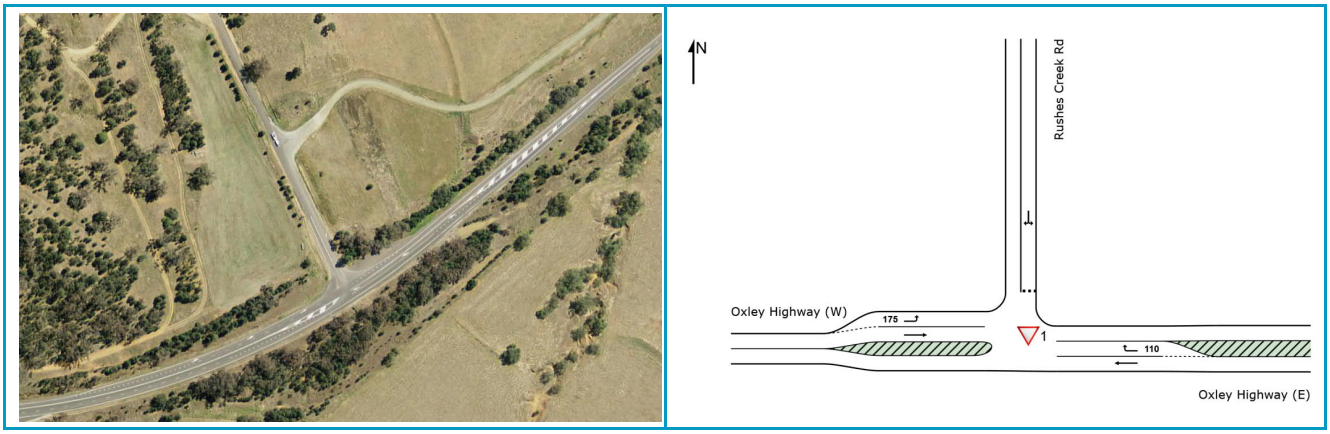
LOS	Description	Critical Delay (sec/vehicle)
A	Good operation	< 14 sec
B	Acceptable delays and spare capacity	15 - 28 sec
C	Satisfactory	29 - 42 sec
D	Near capacity	43 - 56 sec
E	At capacity, requires other control mode	57 - 70 sec

4.4 Intersection Assessment

4.4.1 Oxley Highway/Rushes Creek Road Intersection

The Oxley Highway/Rushes Creek Road intersection is currently a priority controlled T-intersection. The existing configuration and assessed SIDRA layout of the intersection are shown on Figure 4. The results of the SIDRA assessment are presented in Table 9. Detailed SIDRA outputs are provided at Appendix G.

Figure 4 Oxley Highway/Rushes Creek Road Intersection – Existing Intersection Form



Source: SIX Maps

Table 9 SIDRA Outputs: Oxley Highway/Rushes Creek Road Intersection

Scenario	AM Peak Hour			PM Peak Hour		
	DOS	Critical Delay	95th %ile Queue	DOS	Critical Delay	95th %ile Queue
Existing priority controlled intersection						
2025 Background With Development & Construction	0.10	11 sec	2m (E)	0.10	11 sec	3m (N)

The SIDRA analysis summarised in Table 9 identifies that the existing intersection layout performs well within typically adopted performance (i.e. DOS of 0.80 for a priority-controlled intersection) and safety (i.e. critical delay of 57 seconds or less) thresholds for all assessed scenarios.

4.4.2 Rushes Creek Road/Southern Site Access

The Rushes Creek Road/Southern Site Access proposed as a priority controlled driveway crossover. The assessed SIDRA layout of the proposed access is shown on Figure 5. The results of the SIDRA assessment are presented in Table 10. Detailed SIDRA outputs are provided at Appendix G.

Figure 5 Rushes Creek Road/Southern Site Access – Proposed Access Form

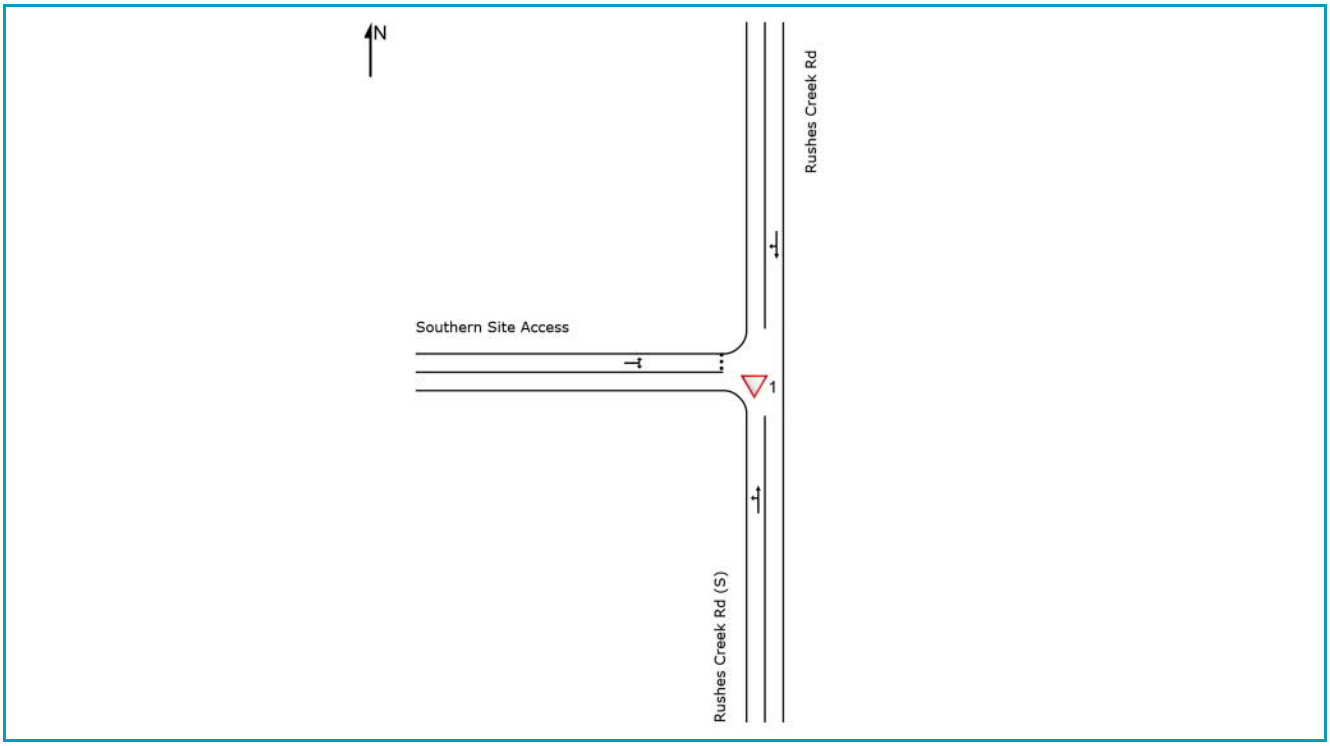


Table 10 SIDRA Outputs: Rushes Creek Road/Southern Site Access

Scenario	AM Peak Hour			PM Peak Hour		
	DOS	Critical Delay	95th %ile Queue	DOS	Critical Delay	95th %ile Queue
Proposed priority controlled access						
2025 Background With Development & Construction	0.04	8 sec	1m (W)	0.04	9 sec	1m (W)

The SIDRA analysis summarised in Table 10 identifies that the proposed access layout performs well within typically adopted performance (i.e. DOS of 0.80 for a priority-controlled intersection) and safety (i.e. critical delay of 57 seconds or less) thresholds for all assessed scenarios.

4.4.3 Rushes Creek Road/Northern Site Access

The Rushes Creek Road/Northern Site Access proposed as a priority controlled driveway crossover. The assessed SIDRA layout of the proposed access is shown on Figure 6. The results of the SIDRA assessment are presented in Table 11. Detailed SIDRA outputs are provided at Appendix G.

Figure 6 Rushes Creek Road/Northern Site Access – Proposed Access Form

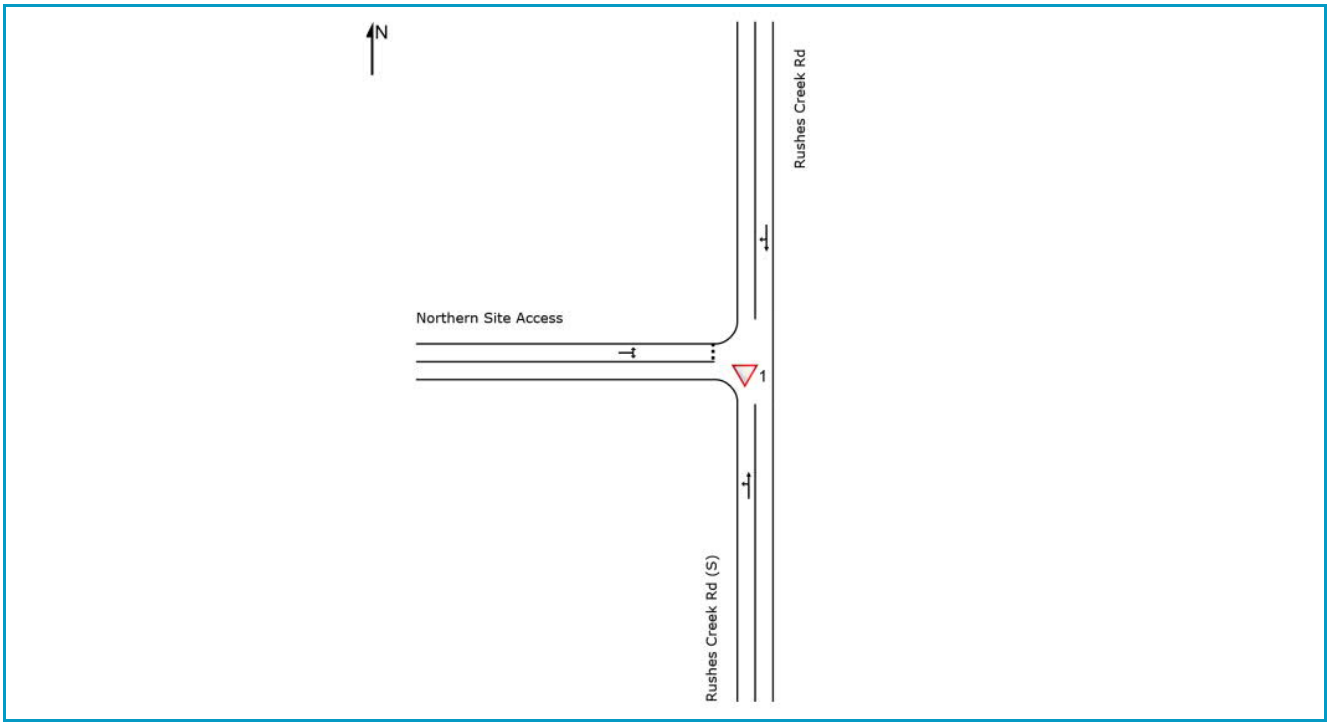


Table 11 SIDRA Outputs: Rushes Creek Road/Northern Site Access

Scenario	AM Peak Hour			PM Peak Hour		
	DOS	Critical Delay	95th %ile Queue	DOS	Critical Delay	95th %ile Queue
Proposed priority controlled access						
2025 Background With Development & Construction	0.04	8 sec	1m (W)	0.04	9 sec	1m (W)

The SIDRA analysis summarised in Table 11 identifies that the proposed access layout performs well within typically adopted performance (i.e. DOS of 0.80 for a priority-controlled intersection) and safety (i.e. critical delay of 57 seconds or less) thresholds for all assessed scenarios.

4.5 Mitigation Measures

Based on the results of the operational assessment presented above, it is evident that the existing road network has sufficient capacity to accommodate the conservative Development traffic scenario (i.e. combination of operational and construction phase traffic demands at the 2025 design year) assessed herein. On this basis, no additional measures are considered necessary to offset the operational impacts of traffic associated with the construction phase of the Development.

5 Safety Assessment

5.1 Site Accesses

The following is noted in relation to the suitability of the proposed northern and southern site accesses to Rushes Creek Road to accommodate traffic associated with the construction phase of the Development:

- The SLR STA indicated that the location of the proposed northern and southern site accesses to Rushes Creek Road catered for appropriate sight distance in accordance with the relevant design standard, being the Australian Standards for *Parking facilities Part 2: Off-street commercial vehicle facilities* (AS2890.2);
- A turn warrant assessment of both site accesses to Rushes Creek Road, a summary of which is included at Appendix H, was conducted using the 2025 design traffic volumes at Appendix F and demonstrates that the proposed BAL site access forms are suitable to accommodate the anticipated peak hour traffic demands generated by the combination of construction and operational phases of the Development;
- The largest anticipated design vehicle for the construction phase of the Development is a 20m AV, which is smaller than the largest design vehicle for which the site accesses have been designed to accommodate (i.e. a 25m B-Double).

5.2 Rushes Creek Road and Oxley Highway Intersection

The following is noted in relation to the suitability Rushes Creek Road (i.e. to the south of the site accesses) and the Oxley Highway/Rushes Creek Road intersection to accommodate traffic associated with the construction phase of the Development:

- As discussed in Section 3.5 herein, the construction phase of the Development will generate an additional two (2) heavy vehicle movements (i.e. on peak days) to Rushes Creek Road and the Oxley Highway/Rushes Creek Road intersection for the duration of construction;
- As per Section 2.2 herein, Rushes Creek Road is an approved route 25/26m B-Double route. Furthermore, Rushes Creek Road and the Oxley Highway/Rushes Creek Road intersection have previously been assessed a suitable to accommodate 25m B-Double movements. Notwithstanding, the construction phase of the Development will utilise design vehicles of up to 20m AV size (i.e. smaller than a 25/26m B-Double);
- A turn warrant assessment of the Oxley Highway/Rushes Creek Road intersection, a summary of which is included at Appendix H, was conducted using the 2025 design traffic volumes at Appendix F. The assessment demonstrates that the existing intersection form is suitable to accommodate the anticipated peak hour traffic demands generated by the combination of construction and operational phases of the Development.

5.3 Mitigation Measures

Based on the above commentary, no specific safety measures are considered to be warranted in order to accommodate the traffic demands associated with the construction phase of the Development. Notwithstanding, it is proposed to implement a suite of construction traffic management measures, which are detailed in Section 6 herein, to ensure that traffic associated with the construction phase of the Development does not impact on the safety of the surrounding road network.

6 Construction Phase Traffic Management Measures

6.1 Drivers Code of Conduct

This CTMP provides additional details to supplement the *Rushes Creek Poultry Production Farm (Construction Phase): Drivers Code of Conduct* document (Drivers Code of Conduct), which is included at Appendix I. As part of the mandatory site induction, all heavy vehicle drivers entering the construction site are required to read the Drivers Code of Conduct, complete and sign the *Confirmation of Understanding* section, and return to authorised site personnel for secure storage onsite.

6.2 Site Management

The following procedures are to be observed by all vehicle drivers accessing the subject site:

- The construction site has a drug and alcohol policy which includes random testing;
- Drivers are to obey all site signage and the directions of site personnel;
- Vehicles are to use designated circulation roads within the site where possible;
- All vehicles are to park and load/unload within the site using designated parking and loading areas where possible. Vehicles are not to park or load/unload within the public road reserve;
- All drivers are required to operate vehicles in a safe and courteous manner, within and external to the subject site.

6.3 Heavy Vehicle Management

6.3.1 General Requirements

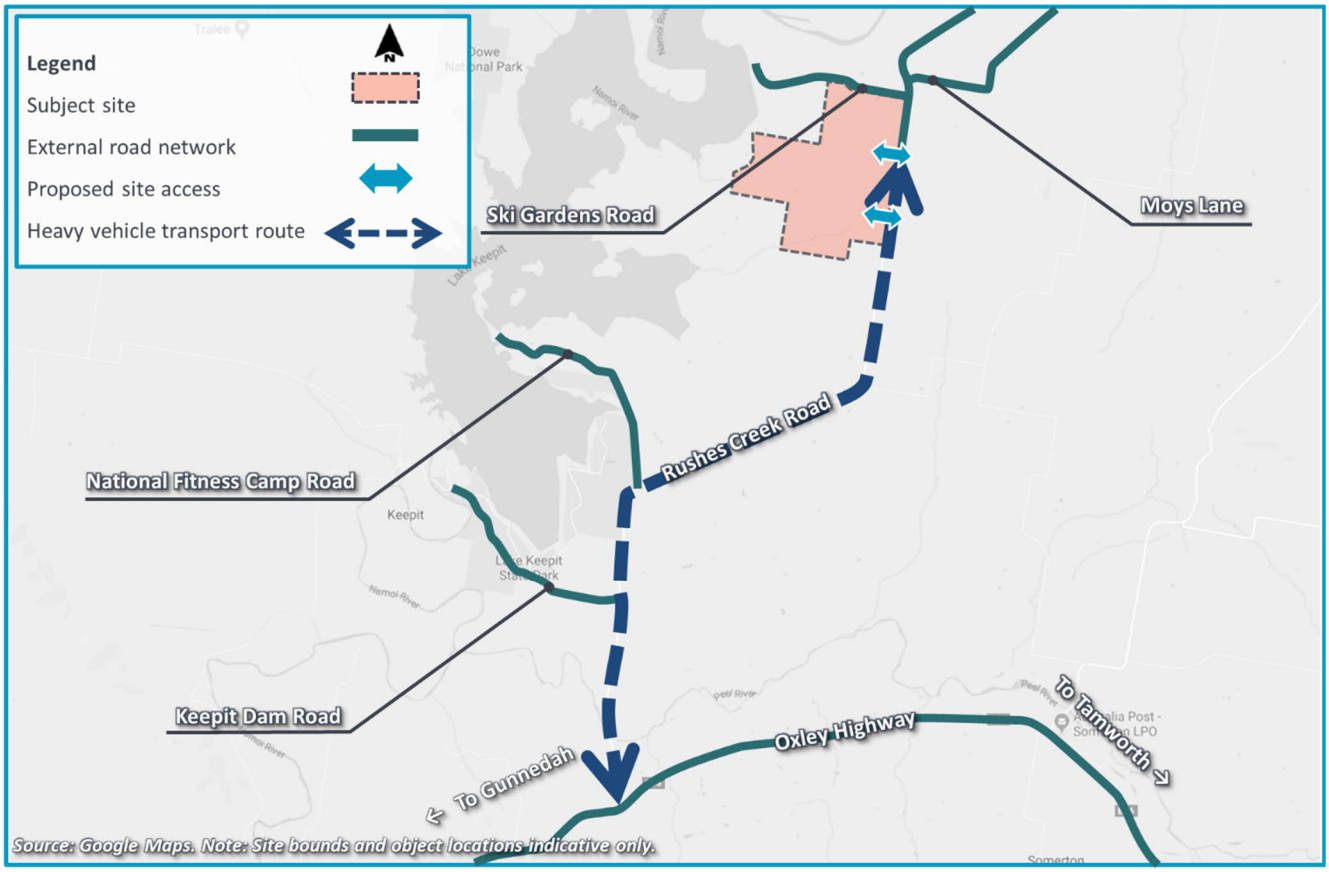
All heavy vehicle drivers accessing the subject site must abide by the following:

- Undertake a site induction carried out by authorised site personnel or suitably qualified person under the direction of the site manager;
- All drivers must hold a valid driver's licence which is appropriate for the class of vehicle under their operation;
- All drivers are to ensure their load is legal, covered and secure before entering or exiting the site;
- All drivers must comply with Chain of Responsibility legislation;
- Vehicles entering the subject site are to be registered, roadworthy, and of sound mechanical condition. Site management may request to inspect any vehicle or request maintenance records for any vehicle and reserves the right to prohibit any vehicle from entering the subject site should there be any indication that the vehicle is not roadworthy or safe to operate;
- Any accidents, incidents, complaints, hazards, spillages or near misses must be reported immediately to the site manager. This includes incidents along the designated heavy vehicle transport route on the external road network.

6.3.2 Designated Heavy Vehicle Transport Route

To minimise the safety impact on residential areas and school zones, the designated transport route for heavy vehicles for the subject site is via Rushes Creek Road to the south of the site towards the Oxley Highway as indicated on Figure 7. Heavy vehicles are not to use Rushes Creek Road to the north of the subject site (i.e. towards Manilla), as the appropriateness of this route for heavy vehicle movements has not been assessed.

Figure 7 Designated Heavy Vehicle Transport Route



It is understood that works will take place on Ski Gardens Road to install water and electrical supply infrastructure underneath the road. Should heavy vehicles access to Ski Gardens Road be required as part of these works, this would need to be considered as part of a relevant Traffic Control Plan (TCP) prepared to accompany the external works within the public road reserve (see Section 6.4).

Through minimising heavy vehicle movements along roads in the vicinity of the site that include either school zones or that facilitate lower speed residential property access, the designated heavy vehicle transport route minimises the safety impacts on residential areas and school zones through limiting the potential for haulage vehicles to interact with the following:

- Students walking or cycling to school, or boarding/alighting buses;
- Pedestrians and children around residential properties;
- Vehicles or cyclists entering or leaving residential property accesses.

The typical framework applied to risk management seeks to (1) Avoid; (2) Manage, and (3) Mitigate risks (in order of preference). By avoiding residential areas and school zones, the proposed heavy vehicle transport route is consistent with this framework.

6.3.3 Speed Management

Posted speed limits along the designated heavy vehicle transport route indicated on Figure 7 are as follows:

- Within the subject site: 60km/h generally, 40km/h within the vicinity of work sites or farms;
- Rushes Creek Road: 100km/h;
- Oxley Highway: 100km/h.

6.3.4 Noise Management

To limit heavy vehicle noise associated with construction activities, drivers are to abide by the following requirements:

- Vehicle access to the subject site is to be via the designated haulage route of Rushes Creek Road to the south of the site towards the Oxley Highway;
- Heavy vehicles using Rushes Creek Road are not to use engine or compression braking systems, except where required for safety reasons;
- Posted speed limits on the external road network are to be observed, and vehicle speeds are to be restricted to 60km/h within the subject site, or 40km/h within the vicinity of work sites or farms;
- Vehicles are to be turned off when not in use.

6.3.5 Dust Management

To minimise the potential for dust production within the subject site, drivers are to abide by the following requirements:

- Vehicle speeds are to be restricted to 60km/h within the subject site, or 40km/h within the vicinity of work sites or farms;
- Vehicles are to use designated circulation roads within the site where possible;
- Drivers are to report excessive dust production from internal circulation roads to the site manager;
- Water trucks will be used to wet down internal circulation roads during dry conditions and when excessive dust production is reported to the site manager.

6.4 Traffic Control Plans

TCPs for the construction of the proposed northern and southern site accesses to Rushes Creek Road, and the installation of water and electrical supply infrastructure under Ski Gardens Road, have not been prepared as part of this CTMP, however, should be prepared prior to the commencement of any works within the road reserve. The TCPs should provide details of the layout and nature of any temporary traffic control devices required to ensure safe movements within a particular area on the public road network and may include:

- Temporary signage/devices to notify road users of potential hazards or changed conditions;
- Temporary speed limits;

- Detours;
- UHF frequencies for communication with site or traffic control personnel; and
- Any other proposed changes to traffic conditions.

TCPs should be prepared by a suitability qualified person and be implemented by a suitability qualified traffic management contractor in accordance with the following relevant guidelines:

- The Australian Standard for Manual of uniform traffic control devices *Part 3: Traffic Control for Works on Roads* (AS1742.3);
- Supplement to AS1742.3 (TfNSW, 2020);
- *Traffic control at work sites* (TCAWS) Technical Manual (TfNSW, 2020);
- *Austroads Guide to Temporary Traffic Management (*AGTTM*).*

All necessary approvals shall be obtained from the relevant road authorities (i.e. TRC) prior to implementation of the TCPs. A copy of relevant TCPs should be provided to all contractors as part of the site induction process to ensure awareness and compliance.

6.5 Community Consultation in Relation to External Works

It is noted that temporary lane closures (i.e. one lane to remain open under traffic control) on Rushes Creek Road are likely to be required in order to facilitate the construction of the northern and southern site accesses, and potentially also for the and the installation of water and electrical supply infrastructure under Ski Gardens Road. Details of any notification/consultation measures (if required) to minimise disruptions to road users will be provided in due course in the respective TCPs for the construction of the northern and southern site accesses.

At a high level, however, given the anticipated peak hour traffic volumes along Rushes Creek Road in the vicinity of the site accesses (i.e. <100vph in both directions as per the 2025 design traffic volumes at Appendix F), delays for vehicles due to traffic control are anticipated to be minor. Likewise for Ski Gardens Road, reflective of the low traffic volumes along this local road, delays for vehicles due to traffic control are also expected to be minor.

7 CTMP Monitoring/Review & Improvement Process

7.1 Implementation

In accordance with Schedule 2, Part B, Condition B10 of the Development Consent:

- Construction on the subject site should not commence until this CTMP has been approved by the Planning Secretary; and
- The most recent version of this CTMP approved by the Planning Secretary should be implemented for the duration of construction.

7.2 Monitoring

7.2.1 Incident Reporting and Non-Compliance Notification

Any incidents of relevance to this CTMP (i.e. those reported either though formal complaints to DPIE or the site manager, and also those observed by site personnel) should be reported to DPIE in accordance with Schedule 2, Part C, Condition C9 and *Appendix 3* (Incident Notification and Reporting Requirements) of the Development Consent. Reference should also be made to the complaints management strategy and environmental incidents management strategy in the approved Construction Environmental Management Plan (CEMP).

Any non-compliance with the Development Consent, this CTMP, or the Drivers Code of Conduct should be reported to DPIE in accordance with Schedule 2, Part C, Condition C10 of the Development Consent.

7.2.2 Non-Compliance Response Procedure

Compliance of this CTMP with the Development Consent conditions will be measured according to the following performance indicators:

- An authorised site staff member or suitably qualified person under the direction of the site manager will undertake formal observations of compliance at six-monthly intervals;
- Contractor and employee awareness of this CTMP and Drivers Code of Conduct; and
- The frequency and nature of complaints reported to the subject site in relation to construction traffic.

Incident reporting is to be undertaken as per the requirements in Section 7.2. In the event of non-compliance, the following actions will be undertaken:

- Establish the details in relation to the incident (date, location, vehicle, driver etc.);
- Confirm that the reported incident involves a vehicle associated with the subject site;
- Conduct an investigation into why the incident occurred and evaluate the effectiveness of the current mitigation strategy;
- Provide details of any corrective actions and/or preventative measures to be implemented in order to address the incident and prevent reoccurrence; and
- Report details of any non-compliance to DPE in accordance with Section 7.2.
- Identify any necessary improvement processes that become apparent as a result of the incident and implement relevant improvements to the CTMP.

Should any driver be found to have acted in breach of the Drivers Code of Conduct, through either a formal complaint, or through observations by authorised site personnel, disciplinary action will be taken, which could include the following:

- Verbal notification (if possible) and written confirmation to the driver of non-compliance with the Drivers Code of Conduct;
- Refusal to load/unload affected vehicles and direction to the driver to leave the site;
- Implementation of a temporary ban of the affected vehicle or driver until such time as sufficient evidence has been provided to authorised site staff that the breach has been rectified and/or will not occur again;
- In the case of a serious breach or repeated non-compliance with the Drivers Code of Conduct, a permanent site ban of the affected vehicle or driver will be considered.

7.3 CTMP Review & Improvement Process

Incident reporting is to be undertaken as per the requirements in Section 7.2. In the event of non-compliance, the following actions in addition to those captured in Section 7.2. will be undertaken:

- Document and implement any necessary improvements to the CTMP that become apparent as a result of the incident;
- Issue an updated version of the CTMP to relevant stakeholders which:
  - Describes the incident which is the catalyst for the update of the CTMP.
  - Describes the CTMP refinement in an improvement register that would likely be an appendix to the CTMP to aid stakeholder review.
  - Captures the improvement as appropriate within the body of the CTMP.

8 Summary

SLR has been engaged by ProTen to prepare a CTMP for the Rushes Creek PPF located at Rushes Creek Road, Rushes Creek.

Based on the analysis and discussion herein, the following is concluded:

- Construction of the Development will occur over two stages, with Stage 1 anticipated to occur begin in mid-2021 and be completed in 2022. Stage 2 is expected to commence in 2022, with completion anticipated in 2025;
- Two new site accesses, a northern and southern access to Rushes Creek Road, will be constructed at the start of each respective stage (i.e. northern access for Stage 1 and southern access for Stage 2) and will provide access for construction traffic to the subject site;
- The construction phase of the Development is anticipated to generate up to 60vpd during the peak months of construction, consisting of up to 58 light vehicle trips and 2 heavy vehicle trips per day;
- The operational assessment documented herein demonstrates that the existing road network has sufficient capacity to accommodate the conservative Development traffic scenario (i.e. combination of operational and construction traffic at the 2025 design year) assessed. On this basis, no additional measures are considered necessary to offset the potential operational impacts of traffic associated with the construction phase of the Development;
- No specific safety measures are considered to be warranted in order to accommodate the traffic demands associated with the construction phase of the Development. Notwithstanding, a variety of management measures, including the following, will be implemented to ensure that traffic associated with the construction phase of the Development does not impact on the safety of the surrounding road network:
  - All heavy vehicle drivers accessing the subject site will be required to read and abide by the Drivers Code of Conduct, and adhere to the designated heavy vehicle transport route using Rushes Creek Road to the south of the site toward the Oxley Highway;
  - TCPs should be prepared prior to the commencement of any works within the road reserve, including for the construction of the proposed northern and southern site accesses to Rushes Creek Road, and the installation of water and electrical supply infrastructure under Ski Gardens Road.
- Any incidents or non-compliance with the Development Consent, this CTMP, or the Drivers Code of Conduct should be reported to the DPIE in accordance with the relevant Development Consent conditions.

APPENDIX A

DPIE Approval of Traffic Consultant

Planning, Industry & Environment

Mr Chris Lawlor
Associate – Transport Advisory
SLR Consulting Australia Pty Ltd
PO Box 26
Spring Hill QLD 4004

15 February 2021

Dear Mr Lawlor

Rushes Creek Poultry Production Farm (SSD-7704)
Approval of Traffic Consultant – Condition B10

I refer to your letter dated 12 February 2021 seeking the Planning Secretary's endorsement for you to prepare the Construction Traffic Management Plan (CTMP) required by Schedule 2, Condition B10 of the Rushes Creek Poultry Production Farm development consent (SSD-7704).

The Department has reviewed your CV provided with your letter and is satisfied you have suitable qualifications and experience to prepare the CTMP, in accordance with Condition B10(a). I therefore endorse your engagement by ProTen Tamworth Pty Ltd to prepare the CTMP for the approved development.

Should you have any further enquiries, please contact Sally Munk, Principal Planner, Planning and Assessment, at the Department on 9274 6431 or via email at sally.munk@planning.nsw.gov.au.

Yours sincerely

Chris Ritchie
Director
Industry Assessments

As nominee of the Planning Secretary

cc. Bill Williams, ProTen Tamworth Pty Ltd

APPENDIX B

Road Authority Consultation Summary

B1 Initial Consultation

SLR contacted both TfNSW and TRC on 12 January 2021 via email to establish any additional CTMP requirements beyond the relevant Development Consent conditions, however, did not receive a written response from either authority. A copy of the emails requesting initial consultation are included at Appendix C.

B2 Review of Draft CTMP

B2.1 TfNSW Consultation

A copy of the correspondence received in relation to the draft CTMP is reproduced at Appendix C.

B2.2 TRC Consultation

A email associated with the issuing of the draft CTMP is is reproduced at Appendix C. It was noted that no feedback was received from TRC.

APPENDIX C

Evidence of Consultation

Chris Lawlor

From: Gillogly, Mitchell <m.gillogly@tamworth.nsw.gov.au>
Sent: Tuesday, 12 January 2021 9:44 AM
To: Brake, Steve; Manners, Alex
Cc: Chris Lawlor; Lobsey, Sam
Subject: FW: 620.30288: Rushes Creek PPF - request for engagement re CTMP
Attachments: RC Development Consent SSD 7704.pdf

Hi Steve and Alex,

Can one of you assist Chris as per below.

Thanks.

Regards,

Mitch Gillogly
Team Leader – Development Assessment

P 02 6767 5462 | E m.gillogly@tamworth.nsw.gov.au

437 Peel Street
PO Box 555 Tamworth NSW 2340
www.tamworth.nsw.gov.au



From: Chris Lawlor < >
Sent: Tuesday, 12 January 2021 10:26 AM
To: Lobsey, Sam <s.lobsey@tamworth.nsw.gov.au>; Gillogly, Mitchell <m.gillogly@tamworth.nsw.gov.au>
Cc: Eryn Bath <eryn@emeadvisory.com>
Subject: 620.30288: Rushes Creek PPF - request for engagement re CTMP

Hi Sam and Mitch,

I hope you are both going well. I refer to the attached Development Consent (Consent) for the Rushes Creek Poultry Production Farm (PPF) development issued by the Department of Planning , Industry and Environment (DPIE) on 16 April 2020. SLR Consulting has been engaged by ProTen Tamworth Pty Ltd (ProTen) to prepare a Construction Traffic Management Plan (CTMP) in accordance with Schedule 2, Condition B10 of the Consent, which is reproduced below for ease of reference.

TRAFFIC AND ACCESS

Construction Traffic Management Plan

B10. Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP req condition C2 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council and Transport for NSW;

(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;

(d) detail heavy vehicle routes, access and parking arrangements;

(e) include a Driver Code of Conduct to:

(i) minimise the impacts of earthworks and construction on the local and regional road network;

(ii) minimise conflicts with other road users;

(iii) minimise road traffic noise; and

(iv) ensure truck drivers use specified routes;

(f) include a program to monitor the effectiveness of these measures; and

(g) if necessary, detail procedures for notifying residents and the community (including local schools), o potential disruptions to routes.

B11. The Applicant must:

(a) not commence construction until the Construction Traffic Management Plan required by condition B1 approved by the Planning Secretary; and

(b) implement the most recent version of the Construction Traffic Management Plan approved by the Pl Secretary for the duration of construction.

Condition B10(b) of the consent requires that the CTMP is prepare in consultation with Council. Eryn Bath from EME Advisory has provided you as contacts to seek input in relation to the CTMP – could you please forward this email and the below queries onto Council's traffic engineers as required?

As per the above, the CTMP must be prepared in consultation with Council. To satisfy this requirement, this email serves to commence that consultation. We kindly request a response to the following two (2) points:

1. Could you please confirm whether you require any additional considerations into developing the CTMP above those specifically stated in the Consent and copied into this email? If so, could you please state your considerations via return email?
2. Do you request a copy of the draft CTMP for review/feedback prior to ProTen's submission to DPIE for ultimate approval?

I appreciate your response on this matter. Please note that in accordance with the Consent, ProTen must not commence construction under the Consent until a CTMP has been approved by DPIE. The stakeholder consultation process will need to be completed prior to ProTen submitting the CTMP for approval. As the CTMP is considered critical path, I would appreciate your response as soon as practical.

Please do not hesitate to contact me should you wish to discuss further.

Cheers

SLR

Chris Lawlor

Associate - Transport Advisory

+61 7 3858 4865
+61 7 3858 4800
+61 434 892 465
clawlor@slrconsulting.com

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Chris Lawlor

From:	Chris Lawlor
Sent:	Tuesday, 12 January 2021 9:46 AM
To:	development.northern@rms.nsw.gov.au; development.northern@transport.nsw.gov.au
Cc:	Eryn Bath
Subject:	620.30288: Rushes Creek PPF - request for engagement re CTMP
Attachments:	RC Development Consent SSD 7704.pdf

Hi,

I refer to the attached Development Consent (Consent) for the Rushes Creek Poultry Production Farm (PPF) development issued by the Department of Planning, Industry and Environment (DPIE) on 16 April 2020. SLR Consulting has been engaged by ProTen Tamworth Pty Ltd (ProTen) to prepare a Construction Traffic Management Plan (CTMP) in accordance with Schedule 2, Condition B10 of the Consent, which is reproduced below for ease of reference.

TRAFFIC AND ACCESS

Construction Traffic Management Plan

B10. Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP req condition C2 and must:

- (a) be prepared by a suitably qualified and experienced person(s);
- (b) be prepared in consultation with Council and Transport for NSW;
- (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;
- (d) detail heavy vehicle routes, access and parking arrangements;
- (e) include a Driver Code of Conduct to:
  - (i) minimise the impacts of earthworks and construction on the local and regional road network;
  - (ii) minimise conflicts with other road users;
  - (iii) minimise road traffic noise; and
  - (iv) ensure truck drivers use specified routes;
- (f) include a program to monitor the effectiveness of these measures; and
- (g) if necessary, detail procedures for notifying residents and the community (including local schools), of potential disruptions to routes.

B11. The Applicant must:

- (a) not commence construction until the Construction Traffic Management Plan required by condition B1 approved by the Planning Secretary; and
- (b) implement the most recent version of the Construction Traffic Management Plan approved by the Pla Secretary for the duration of construction.

Condition B10(b) of the consent requires that the CTMP is prepared in consultation with Transport for NSW (TfNSW). Could you please forward this email and the below queries onto the relevant TfNSW contact?

As per the above, the CTMP must be prepared in consultation with TfNSW. To satisfy this requirement, this email serves to commence that consultation. We kindly request a response to the following two (2) points:

1. Could you please confirm whether you require any additional considerations into developing the CTMP above those specifically stated in the Consent and copied into this email? If so, could you please state your considerations via return email?
2. Do you request a copy of the draft CTMP for review/feedback prior to ProTen's submission to DPIE for ultimate approval?

I appreciate your response on this matter. Please note that in accordance with the Consent, ProTen must not commence construction under the Consent until a CTMP has been approved by DPIE. The stakeholder consultation process will need to be completed prior to ProTen submitting the CTMP for approval. As the CTMP is considered critical path, I would appreciate your response as soon as practical.

Please do not hesitate to contact me should you wish to discuss further.

Cheers

SLR

Chris Lawlor
Associate - Transport Advisory

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From: Eryn Bath <eryn@emeadvisory.com>
Sent: Friday, 11 June 2021 10:56 AM
To: Jeffrey Baczynski
Subject: Fwd: 620.30288: Rushes Creek PPF - request for engagement re CTMP

Hi Jeff,

See below email trail for the three emails issued to Council in relation to the draft CTMP for Rushes Creek .. no responses received to date.

Cheers
Eryn

Eryn Bath
Principal Consultant, EME Advisory

T: 0427 024739
E: eryn@emeadvisory.com
W: www.emeadvisory.com

eme ADVISORY Planning and Environmental Consulting

---------- Forwarded message ---------
From: Eryn Bath <eryn@emeadvisory.com>
Date: Thu, 20 May 2021 at 13:22
Subject: Re: 620.30288: Rushes Creek PPF - request for engagement re CTMP
To: Lobsey, Sam <s.lobsey@tamworth.nsw.gov.au>, Gillogly, Mitchell <m.gillogly@tamworth.nsw.gov.au>, Brake, Steve <s.brake@tamworth.nsw.gov.au>

Hi Sam, Mitch and Steve,

Just wondering if Council has any feedback on the draft CTMP emailed to you on 8 April (see below) for ProTen's Rushes Creek poultry farm development?

I'd really like to submit it to DPIE for approval next week.

Thanks and regards
Eryn

Eryn Bath
Principal Consultant, EME Advisory

T: 0427 024739
E: eryn@emeadvisory.com
W: www.emeadvisory.com

eme ADVISORY Planning and Environmental Consulting

On Thu, 8 Apr 2021 at 13:17, Eryn Bath <eryn@emeadvisory.com> wrote:

> Hi Sam, Mitch and Steve,
>
> As you know, ProTen received Development Consent SSD 7704 (attached) from DPIE on 16 April 2020 for the Rushes Creek Poultry Production Farm approximately 43 km northwest of Tamworth.
> Consent condition B10 requires ProTen to prepare a Construction Traffic Management Plan (CTMP) in consultation with Council for approval by the Planning Secretary. As per the email below, SLR Consulting emailed Council on 12 January 2021 seeking any additional CTMP requirements beyond those specified under condition B10, however no response has been received to date.
>
> Please now find attached a copy of the draft CTMP prepared by SLR Consulting for review by Council prior to finalising and submitting to DPIE. Given that the CTMP is a pre-commencement condition, Council's review at the earliest opportunity would be appreciated. The draft CTMP has also been forwarded to TfNSW for their review.
>
> Thanks in advance
> Eryn
>
> **Eryn Bath**
> **Principal Consultant, EME Advisory**
>
> **T:** 0427 024739
> **E:** eryn@emeadvisory.com
> **W:** www.emeadvisory.com
>
> eme ADVISORY Planning and Environmental Consulting
>
> ---------- Forwarded message ---------
> From: Chris Lawlor <clawlor@slrconsulting.com>
> Date: Tue, 12 Jan 2021 at 10:25
> Subject: 620.30288: Rushes Creek PPF - request for engagement re CTMP
> To: s.lobsey@tamworth.nsw.gov.au <s.lobsey@tamworth.nsw.gov.au>, m.gillogly@tamworth.nsw.gov.au <m.gillogly@tamworth.nsw.gov.au>
> Cc: Eryn Bath <eryn@emeadvisory.com>
>
> Hi Sam and Mitch,
>
> I hope you are both going well. I refer to the attached Development Consent (Consent) for the Rushes Creek Poultry Production Farm (PPF) development issued by the Department of Planning , Industry and Environment (DPIE) on 16 April 2020. SLR Consulting has been engaged by ProTen Tamworth Pty Ltd (ProTen) to prepare a Construction Traffic Management Plan (CTMP) in accordance with Schedule 2, Condition B10 of the Consent, which is reproduced below for ease of reference.

TRAFFIC AND ACCESS

Construction Traffic Management Plan

B10. Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management Plan for the development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council and Transport for NSW;

(c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction;

(d) detail heavy vehicle routes, access and parking arrangements;

(e) include a Driver Code of Conduct to:

(i) minimise the impacts of earthworks and construction on the local and regional road network;

(ii) minimise conflicts with other road users;

(iii) minimise road traffic noise; and

(iv) ensure truck drivers use specified routes;

(f) include a program to monitor the effectiveness of these measures; and

(g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

B11. The Applicant must:

(a) not commence construction until the Construction Traffic Management Plan required by condition B10 is approved by the Planning Secretary; and

(b) implement the most recent version of the Construction Traffic Management Plan approved by the Planning Secretary for the duration of construction.

Condition B10(b) of the consent requires that the CTMP is prepare in consultation with Council. Eryn Bath from EME Advisory has provided you as contacts to seek input in relation to the CTMP – could you please forward this email and the below queries onto Council's traffic engineers as required?

As per the above, the CTMP must be prepared in consultation with Council. To satisfy this requirement, this email serves to commence that consultation. We kindly request a response to the following two (2) points:

1. Could you please confirm whether you require any additional considerations into developing the CTMP above those specifically stated in the Consent and copied into this email? If so, could you please state your considerations via return email?
2. Do you request a copy of the draft CTMP for review/feedback prior to ProTen's submission to DPIE for ultimate approval?

I appreciate your response on this matter. Please note that in accordance with the Consent, ProTen must not commence construction under the Consent until a CTMP has been approved by DPIE. The stakeholder consultation process will need to be completed prior to ProTen submitting the CTMP for approval. As the CTMP is considered critical path, I would appreciate your response as soon as practical.

Please do not hesitate to contact me should you wish to discuss further.

Cheers

SLR

Chris Lawlor
Associate - Transport Advisory
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30 April 2021

File No: NTH16/00056/10
Your Ref: SSD-7704

Attention: Sally Monk
The Director
Department of Planning Industry and Environment

Dear Sir / Madam,

Re: SSD 7704 – Rushes Creek Poultry Production Farm
Draft Construction Traffic Management Plan

I refer to advice from the Planning Portal on 8 April 2021 requesting Transport for NSW (TfNSW) provide comment on the Draft Construction Traffic Management Plan (CTMP) prepared to satisfy condition B10 and B11 of State Significant Development consent dated 16 April 2020.

TfNSW understands that the proponent is required to prepare the CTMP in consultation with relevant roads authorities. TfNSW engaged with the proponent by phone on 15 January 2021 and advised that the reference document to inform the preparation of the CTMP is Austroads Guide to Temporary Traffic Management Part 2: Traffic Management Planning. In addition the proponent was encouraged to send a Draft for comment once prepared prior to lodgment with the department. TfNSW notes that this is our first opportunity to comment on the Draft document.

TfNSW notes that the CTMP includes a range of measures that can be flexibly implemented to plan, schedule and manage construction traffic impacts on the identified transport route. It is important that the final document is implemented effectively over the life of the project to manage safety for all road users. In this respect, the CTMP does not include details of monitoring, review or improvement processes to measure performance and address any issues identified throughout the project lifecycle. TfNSW recommends the department consider working whether any further detail of processes should be detailed in finalising the management plan.

If you have any further enquiries regarding the above comments please do not hesitate to contact Leisa Sedger, Development Assessment Officer, on 6640 1362 or email development.northern@transport.nsw.gov.au.

Yours faithfully,



for Matt Adams
Team Leader, Development Services
Community and Place | Region North
Regional & Outer Metropolitan
Transport for NSW

Gmail Eryn Bath <eryn@emeadvisory.com>

NTH16/00056/10 - Rushes Creek CTMP

1 message

Development Northern <development.northern@transport.nsw.gov.au> 28 May 2021 at 12:32
To: Eryn Bath <eryn@emeadvisory.com>

Hi Eryn

Thank you for your enquiry and our phone discussion this morning.

In response to your questions in email of 17 May 2021 as outlined in italics below, please consider the following comments:

The points in your email are noted. Transport for NSW supports the inclusion of the identified triggers in the CTMP. It is understood that persons referring to the CTMP may not have visibility of the CEMP so it is important that the documents cross reference each other, for example an understanding of monitoring, reporting and review processes may be of relevance to staff induction and code of conduct: ie people working on the ground need to know to report incidences of relevance to CTMP that are subject to review under the CEMP.

I hope this clarifies our comments. TfNSW supports submission of the document to DPIE for approval.

Kind regards

Leisa Sedger

Leisa Sedger

Development Services Case Officer

Community & Place | Region North

Regional & Outer Metropolitan Division

Transport for NSW

I work flexibly. Unless it suits you, I don't expect you to read or respond to my emails outside of your normal works hours.

T 02 6640 1362
E development.northern@transport.nsw.gov.au

A Level 1, 76 Victoria Street, Grafton NSW 2460

Transport for NSW

From: Eryn Bath [mailto:eryn@emeadvisory.com]
Sent: Thursday, 27 May 2021 11:43 AM
To: Development Northern <development.northern@transport.nsw.gov.au>
Subject: Re: Rushes Creek CTMP

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hi Leisa,

I've just left a voicemail trying to follow-up on my below two emails.... any chance of a response today or tomorrow? I really need to get this matter finalised.

Thanks and regards

Eryn

Eryn Bath

Principal Consultant, EME Advisory

T: 0427 024739

E: eryn@emeadvisory.com

W: www.emeadvisory.com

eme ADVISORY Planning and Environmental Consulting

On Mon, 24 May 2021 at 21:43, Eryn Bath <eryn@emeadvisory.com> wrote:

> Hi Leisa,

Thanks for the phone call on Friday. Any chance you can please respond to my below email regarding the Rushes Creek CTMP (noting it is only for the construction phase)?

Thanks again

Eryn

Eryn Bath

Principal Consultant, EME Advisory

T: 0427 024739

E: eryn@emeadvisory.com

W: www.emeadvisory.com



On Mon, 17 May 2021 at 16:27, Eryn Bath <eryn@emeadvisory.com> wrote:

> Hi Leisa,
>
> Thank you for your review comments (attached) in relation to the draft CTMP (attached) prepared for ProTen's Rushes Creek poultry farm development near Tamworth. Our responding comments/queries:
>
> - SLR did review the referenced Austroads Guide to Temporary Traffic Management Part 2: Traffic Management Planning... SLR advised that it is really a planning guide for works conducted within the road reserve, so not particularly relevant to a strategic level CTMP. As addressed in Section 6.4 of the draft CTMP, there will still need to be TCPs prepared for works conducted within the road reserve, which would consider this Austroads document as appropriate.
>
> - In relation to submitting the draft CTMP to TfNSW for review.... we followed DPIE's procedure of submitting the draft for referral to relevant agencies via DPIE's major projects portal. I followed this up with a direct email to TfNSW given there is an apparent issue in the portal in relation to TfNSW / RMS referrals.
>
> - In relation to your recommendation to DPIE to consider if further details should be provided in relation to monitoring, review or improvement processes.... Section 7 of the draft CTMP addresses incident reporting, monitoring / performance indicators, and non-compliance response. Do you require something additional or more detailed (noting that it covers the construction period only, not long-term operations)? If so, can you please provide specific recommendations? The CTMP will form part of an overarching CEMP, which includes a formal complaints management strategy, environment incident management strategy, and triggers for CEMP review and update. The review and update triggers are - (a) following any significant environmental incident or impact; (b) Where there is any change to the scope of the Development’s construction activities and/or disturbance footprint; (c) Where it is

identified that the environmental performance of the Development is not meeting the objectives of the CEMP; and/or (d) At the request of a relevant regulatory authority. These triggers will apply to the sub-plans prepared as part of the CEMP, including the CTMP.

On this basis, can you please advise:

(a) whether additional details are required for the CTMP; and

(b) if not, whether you are happy for the CTMP to be submitted to DPIE for approval.

Please do not hesitate to contact me to discuss.... I did leave a voice message for you this morning.

Thanks Leisa.

Regards

Eryn

Eryn Bath

Principal Consultant, EME Advisory

T: 0427 024739

E: eryn@emeadvisory.com

W: www.emeadvisory.com

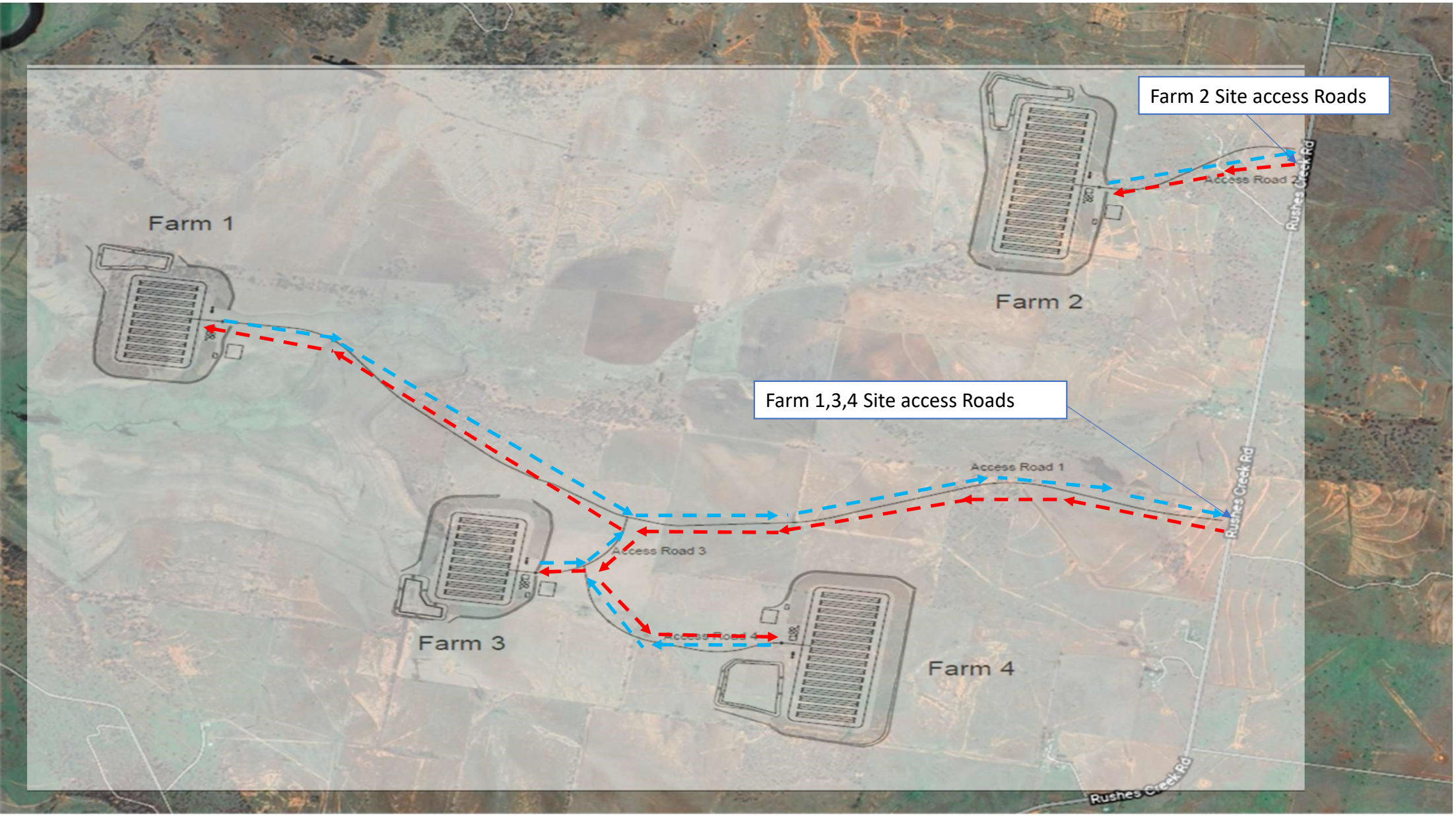


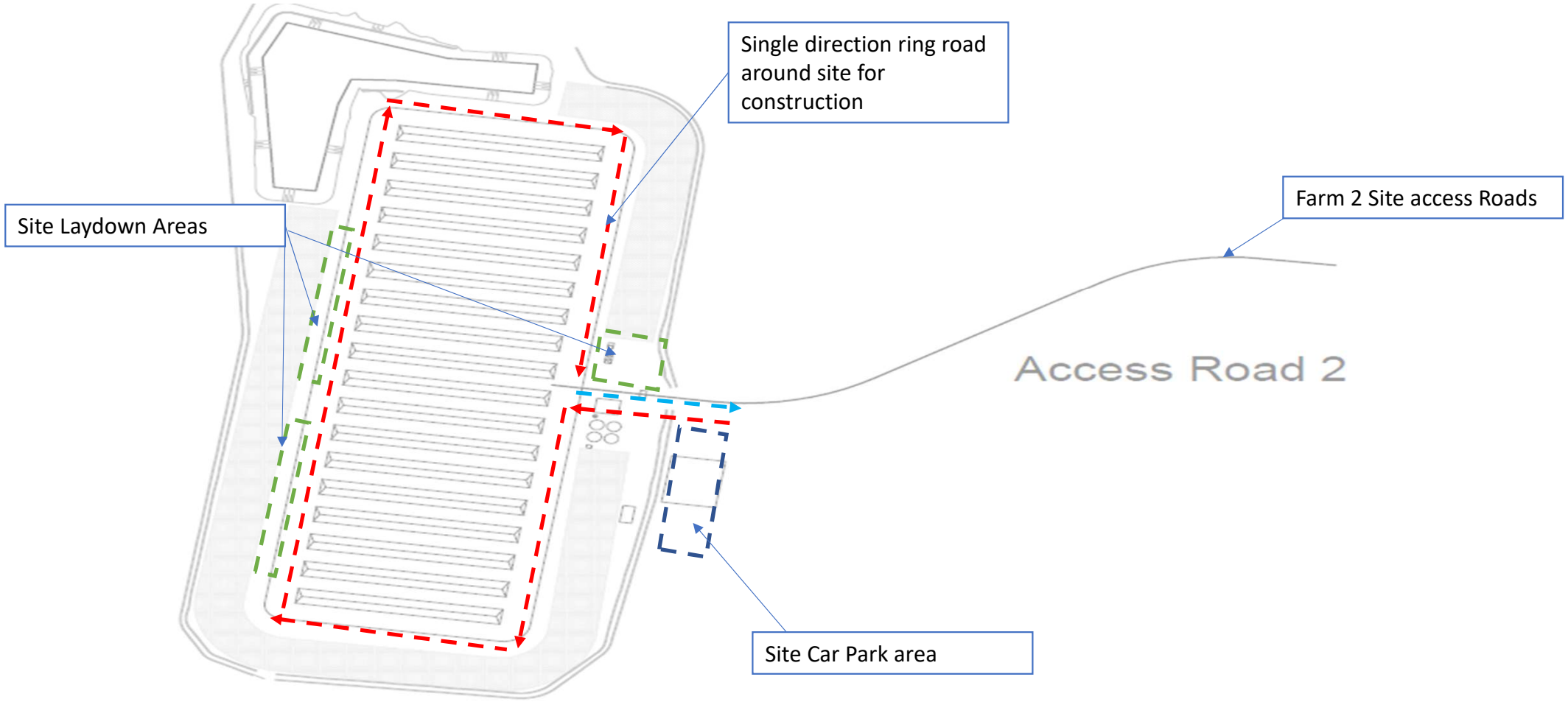
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APPENDIX D

Indicative Construction Staging Plans


Farm 2 Site access Roads
Farm 1
Farm 2
Farm 1,3,4 Site access Roads
Access Road 1
Access Road 2
Access Road 3
Access Road 4
Rushes Creek Rd
Farm 3
Farm 4

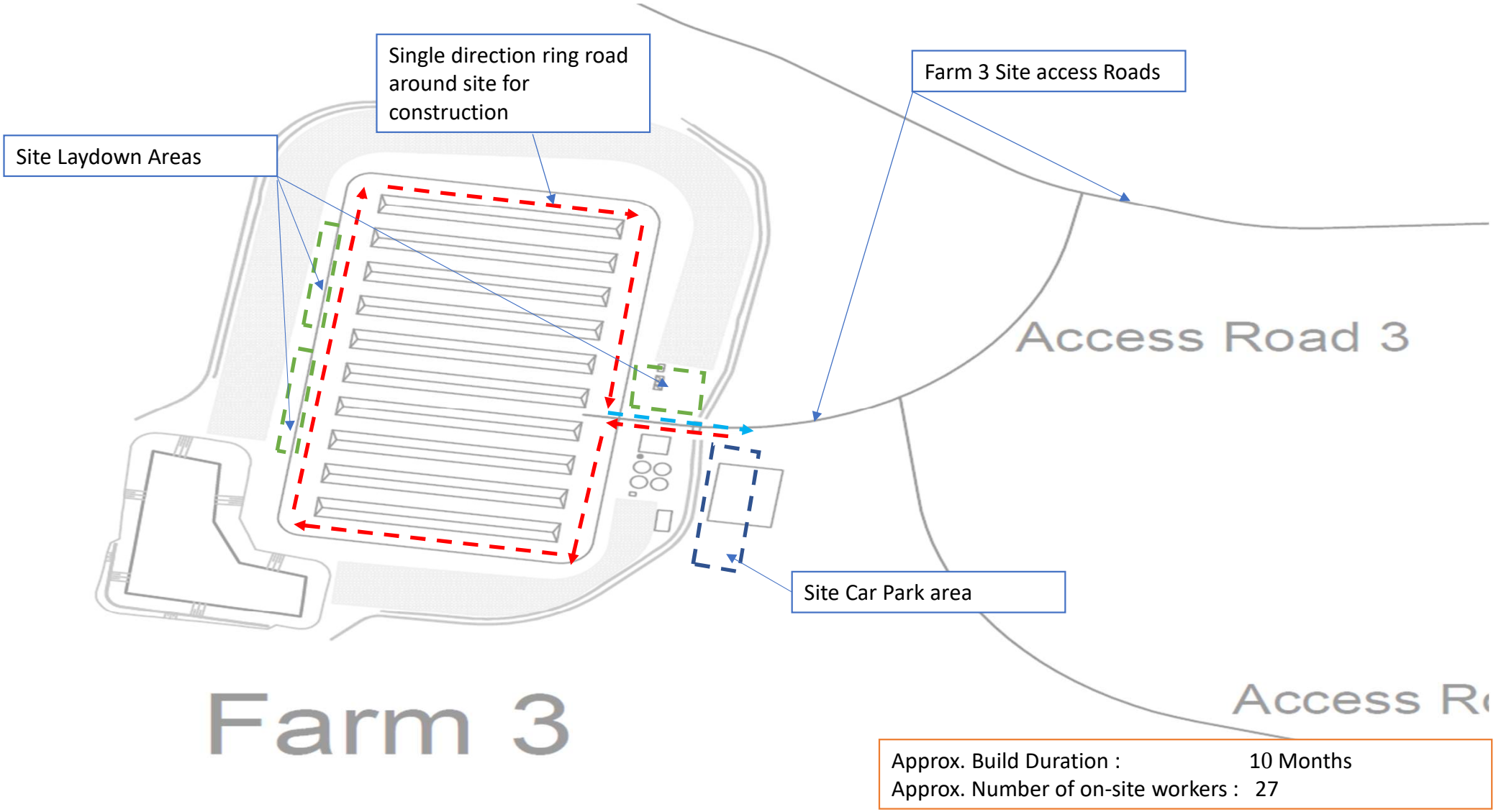


Farm 2

Approx. Build Duration : 15 Months
Approx. Number of on-site workers : 27



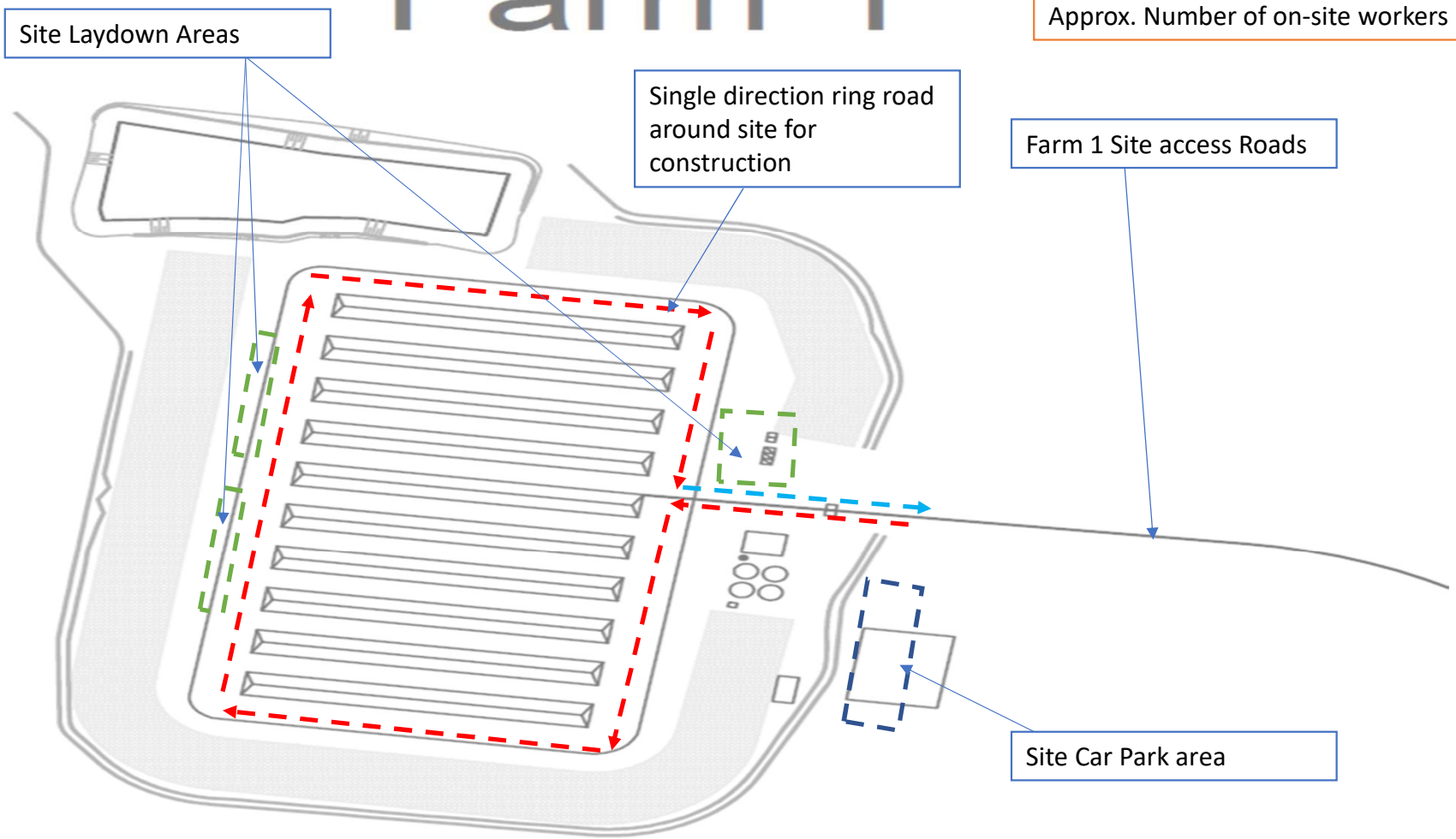
Approx. Build Duration : 15 Months
Approx. Number of on-site workers : 27



Approx. Build Duration : 10 Months
Approx. Number of on-site workers : 27

Farm 1

Approx.. Build Duration : 10 Months
Approx. Number of on-site workers : 27



APPENDIX E

Construction Activities and Traffic Volumes

Task	Type and size of Vehicle		STAGE ONE															
			Farm 2 (18 Sheds)															
		Calendar month	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
		Construction months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Builder (Ancillary Facilities)	2T Ute	Builder (ancillary) contractors driving to and from the site daily for work					72	72	72									
	5T - Flat bed Tow truck	Delivery of the Telehandler - enter site at the start of the job and return to pick it up and the end of the job.					4											
Builder Supply and install)	2T Ute	Builders contractors driving to and from the site daily for work				168	168	168	168	168	168	168	168	168	168	168	168	168
	5T - Flat bed Tow truck	Builder machinery supply. One deliver at the start of the project and a pick up at the end of the project.				2									2	2	2	2
	Semi Trailer	Semi trailers to deliver all require machinery. One day to drop Machinery off and one day to return at the and pf the project to pick-up.				4									8	8	8	8
	Semi Trailer	Total of 20 semi trailer loads of shed material supply of a 10 day period.				16	16	12				16			16			
Concreter	18T Concrete Mixer	Onsite Batch Plant - 18T Concrete Mixers arrive on day one, stay on site for the duration of the job and then leave.				20				20					15			
	2T Ute	Concrete contractors driving to and from the site daily for work				210	210											
	32T Concrete boom pump	Onsite Batch Plant - 32T Concrete boom pump will arrive on day one, stay on site for the duration of the job and then leave.				4	4											
Civil	2T Ute	Earthworks contractors driving to and from the site daily for work	364	364	364	364	364	364										
	Semi Trailer	Semi trailers to deliver all earth works machinery. One day to drop Machinery off and one day to return at the and pf the project to pick-up. (3 x semi trailer load of equipment in one day)	8															8
Electrical HV works	10 T Solid axle string truck	10 T Solid axle string truck arrive on day one, stay on site for the duration of the job and then leave.		2	2													
	20 T Crane borer	20 T Crane borer will arrive on day one, stay on site for the duration of the job and then leave.		2	2													
	2T Ute	HV Electrical contractors driving to and from the site daily for work		104	40													
	5T - Flat bed Tow truck	Delivery of the EWP - enter site at the start of the job and return to pick it up and the end of the job.		8	8													
Electrician	2T Ute	Electrical contractors driving to and from the site daily for work				168	168	168	168	168	168	168	168	168	168	168	168	168
	5T - Flat bed Tow truck	Delivery of the EWP - enter site at the start of the job and return to pick it up and the end of the job.					8								8	8	8	8
Generator	20 T franna Crane	Franna crane to onload truck and place generators in positions.						2					2					
	Semi Trailer	Semi trailers to deliver all generators for farm 1 construction in one load. One day to drop Machinery off and one day to return at the and pf the project to pick-up.						2					2					
Plumber	2T Ute	Plumber contractors driving to and from the site daily for work		156	156	156	156	156	156	156	156	156	156	156	156	156	156	156
	Semi Trailer	Semi trailers to deliver all earth works machinery. One day to drop Machinery off and one day to return at the and pf the project to pick-up.	4															
Professional Services	2T Ute	PM entering and leaving site each day.	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
Shed Equipment (supply and install)	2T Ute	Equipment installation contractors driving to and from the site daily for work				168	168	168	168	168	168	168	168	168	168	168	168	168
	5T - Flat bed Tow truck	(blank)					2					2						
	Semi Trailer	Semi trailers to deliver shipping container for equipment supply. Total of 20 semi trailer loads over a 10 day period.				20	20					20	20	20	20	20	20	20
Silo delivery and install	20 T franna Crane	Delivery of the Telehandler - enter site at the start of the job and return to pick it up and the end of the job.								4			4					
	2T Ute	Silo installation contractors driving to and from the site daily for work								78			78					
Solar	2T Ute	Solar contractors driving to and from the site daily for work									84							
Total vehicle movements at Rushes Creek Road site accesses (per month)			428	688	624	1,352	1,412	1,164	784	814	796	750	818	732	781	750	750	758
		Daily trips (23.6 days per month based on 5.5 days per week)	18	29	26	57	60	49	33	35	34	32	35	31	33	32	32	32
		23.6																
		Monthly Light Vehicles	416	676	612	1,286	1,358	1,148	784	790	796	712	790	712	712	712	712	712
		Daily Light Vehicles	18	29	26	55	58	49	33	34	34	30	34	30	30	30	30	30
		Monthly Heavy Vehicles	12	12	12	66	54	16	0	24	0	38	28	20	69	38	38	46
		Daily Heavy Vehicles	1	1	1	3	2	1	0	1	0	2	1	1	3	2	2	2
		Total Monthly Vehicles	428	688	624	1,352	1,412	1,164	784	814	796	750	818	732	781	750	750	758
		CHECK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Peak hour trips	18	29	26	55	58	49	33	34	34	30	34	30	30	30	30	30
		Outside peak hour trips	1	1	1	3	2	1	0	1	0	2	1	1	3	2	2	2
		AM	9	14	13	28	29	24	17	17	17	15	17	15	15	15	15	15
		PM	9	14	13	28	29	24	17	17	17	15	17	15	15	15	15	15

STAGE TWO																																			
Farm 4 (16 Sheds)															Farm 3 (10 Sheds)											Farm 1 (10 Sheds)									
Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25		
1	2	3	4	5	6	7	8	9	11	12	13	14	15	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10		
				72	72	72												72	72	72								72	72	72					
				4														4		4								4		4					
			168	168	168	168	168	168	168	168	168	168	168				168	168	168	168	168	168	168				168	168	168	168	168	168	168		
			2									2	2				2										2								
			4									8	8				4										4								
			16	16	12				16	16							16	16	12								16	16	12					
			20			20				10							20										20								
			210	210													210										210								
			4	4													4										4								
364	364	364	364	364										364	364									364	364										
8														8										8											
	2	2	2																																
	2	2	2																																
	104	40	40																																
	8		8																																
		168	168	168	168	168	168	168	168	168	168	168	168		168	168	168	168	168	168	168	168	168		168	168	168	168	168	168	168	168	168		
				8								8	8					8										8								
					2					2									2										2							
					2					2									2										2							
		156	156	156	156	156	156	156	156	156	156	156	48		156	156	156	156	156	156	156	156	156		156	156	156	156	156	156	156	156	156		
4														4										4											
52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52		
			168	168	168	168	168	168	168	168	168	168	168				168	168	168	168	168	168	168				168	168	168	168	168	168	168		
				2					2									2										2							
			20	20					20	20	20	20	20				20	20									20	20							
							4			4												4									4				
							78			78												78									78				
								84															84										84		
428	532	784	1,404	1,412	800	804	794	796	750	844	732	750	642	428	740	376	988	834	800	788	794	796	712	428	740	376	988	834	800	788	794	796	712		
18	23	33	60	60	34	34	34	34	32	36	31	32	27	18	31	16	42	35	34	33	34	34	30	18	31	16	42	35	34	33	34	34	30		

416	520	780	1,326	1,358	784	784	790	796	712	790	712	712	604	416	740	376	922	784	784	784	790	796	712	416	740	376	922	784	784	784	790	796	712		
18	22	33	56	58	33	33	34	34	30	34	30	30	26	18	31	16	39	33	33	33	34	34	30	18	31	16	39	33	33	33	34	34	30		

12	12	4	78	54	16	20	4	0	38	54	20	38	38	12	0	0	66	50	16	4	4	0	0	12	0	0	66	50	16	4	4	0	0		
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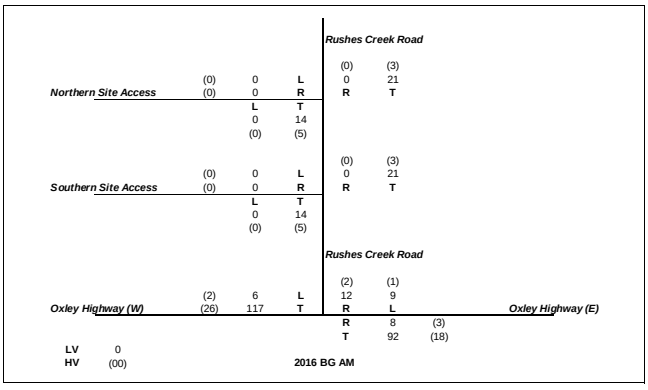
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

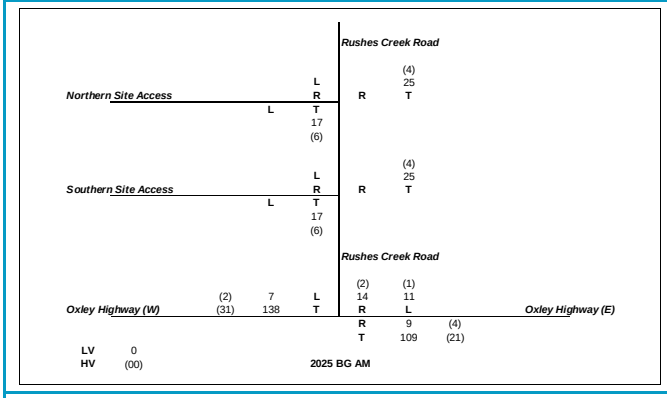
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9	11	17	28	29	17	17	17	17	15	17	15	15	13	9	16	8	20	17	17	17	17	17	15	9	16	8	20	17	17	17	17	17	15		
9	11	17	28	29	17	17	17	17	15	17	15	15	13	9	16	8	20	17	17	17	17	17	15	9	16	8	20	17	17	17	17	17	15		

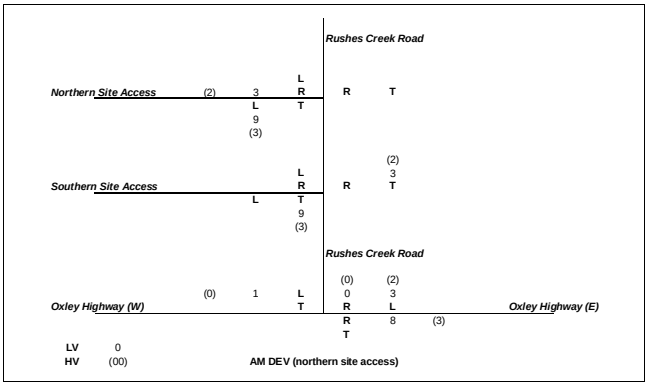
APPENDIX F

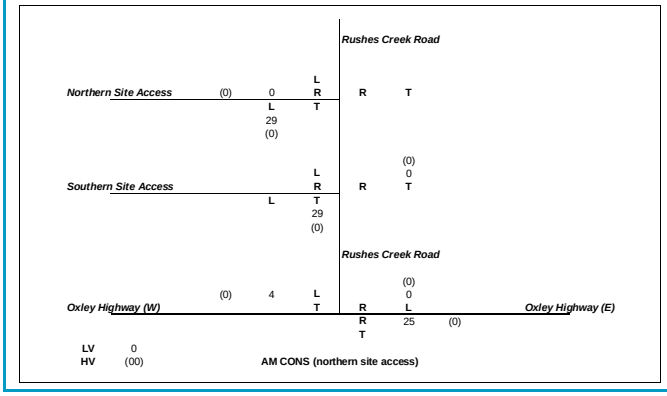
Assessment Traffic Volumes

AM Peak Hour

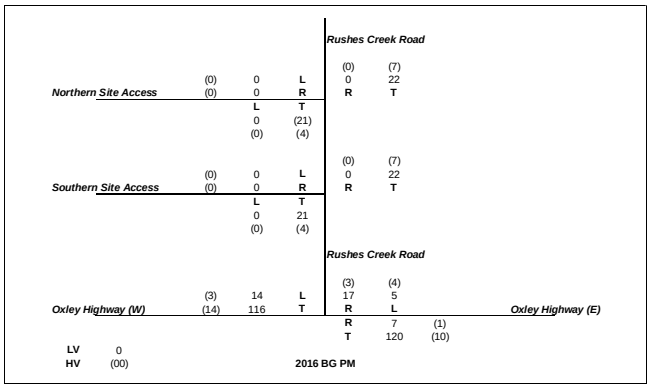


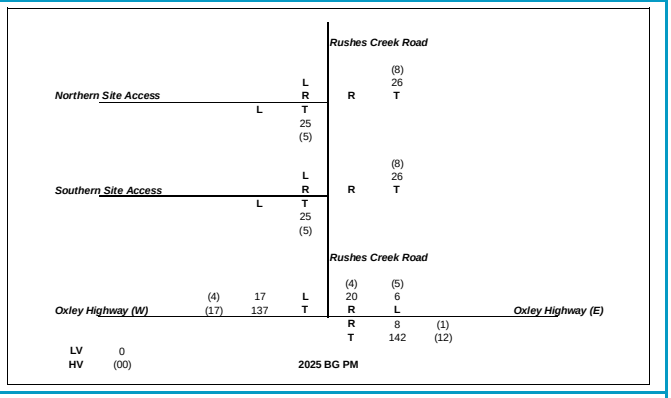


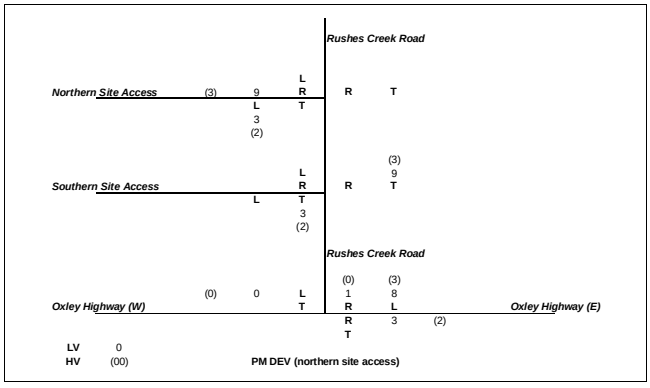


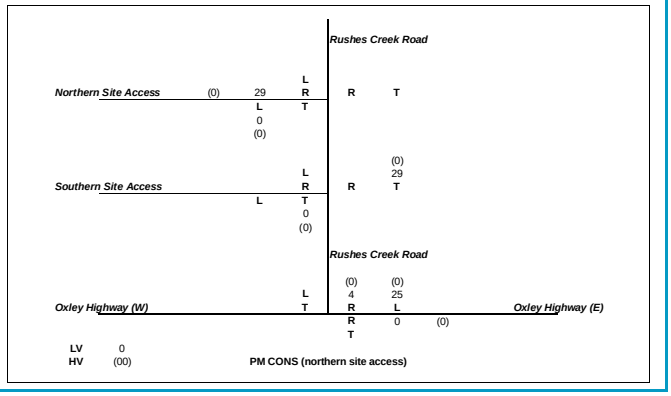


PM Peak Hour

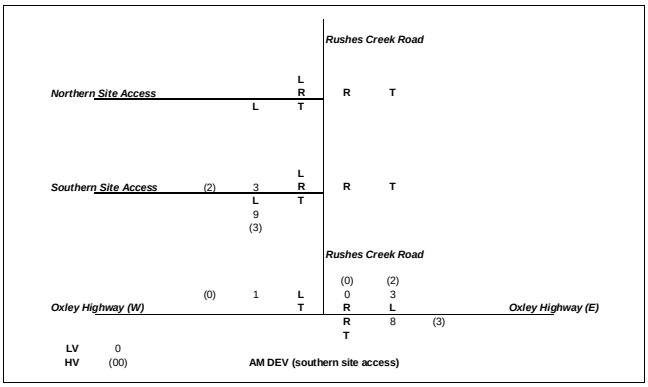




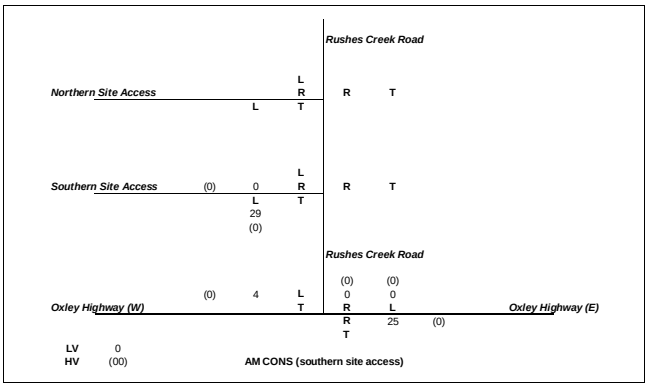




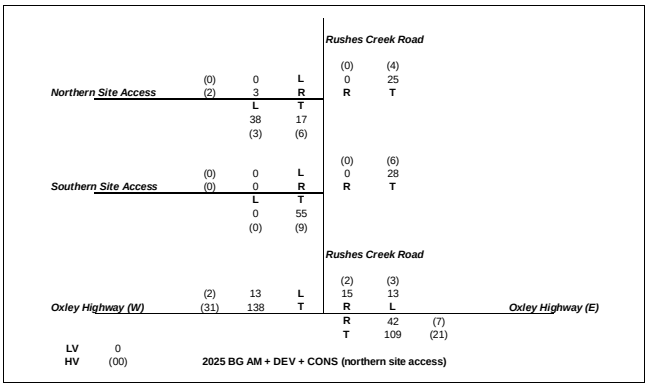
AM Peak Hour



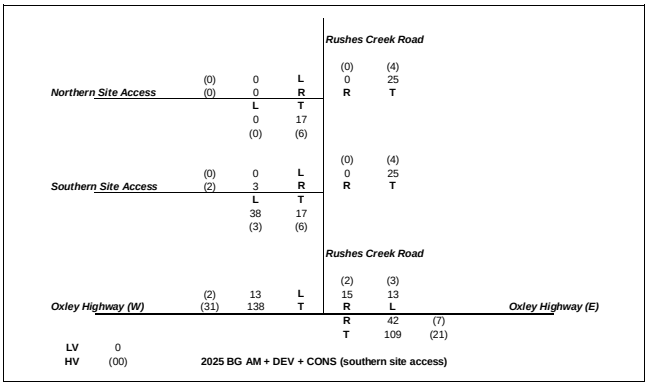
AM DEV (southern site access)



AM CONS (southern site access)

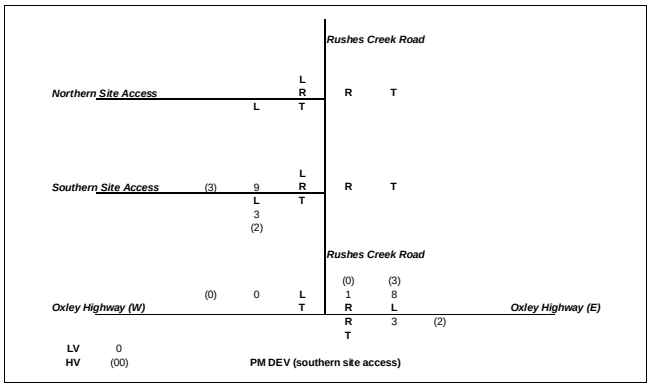


2025 BG AM + DEV + CONS (northern site access)

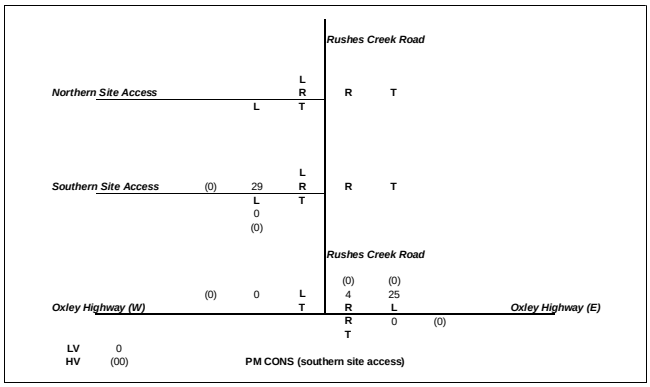


2025 BG AM + DEV + CONS (southern site access)

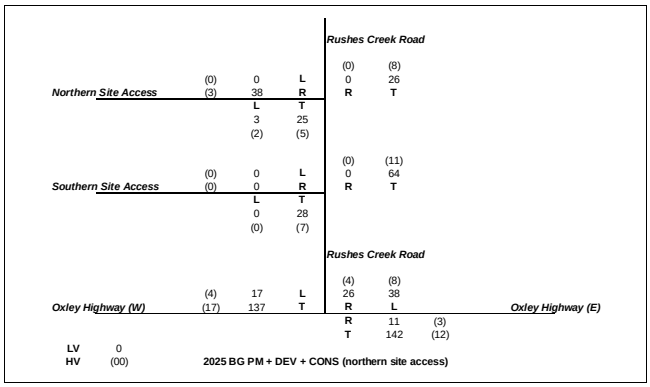
PM Peak Hour



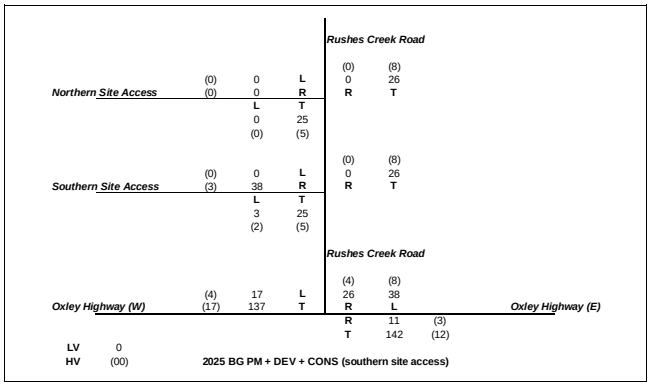
PM DEV (southern site access)



PM CONS (southern site access)



2025 BG PM + DEV + CONS (northern site access)



2025 BG PM + DEV + CONS (southern site access)

APPENDIX G

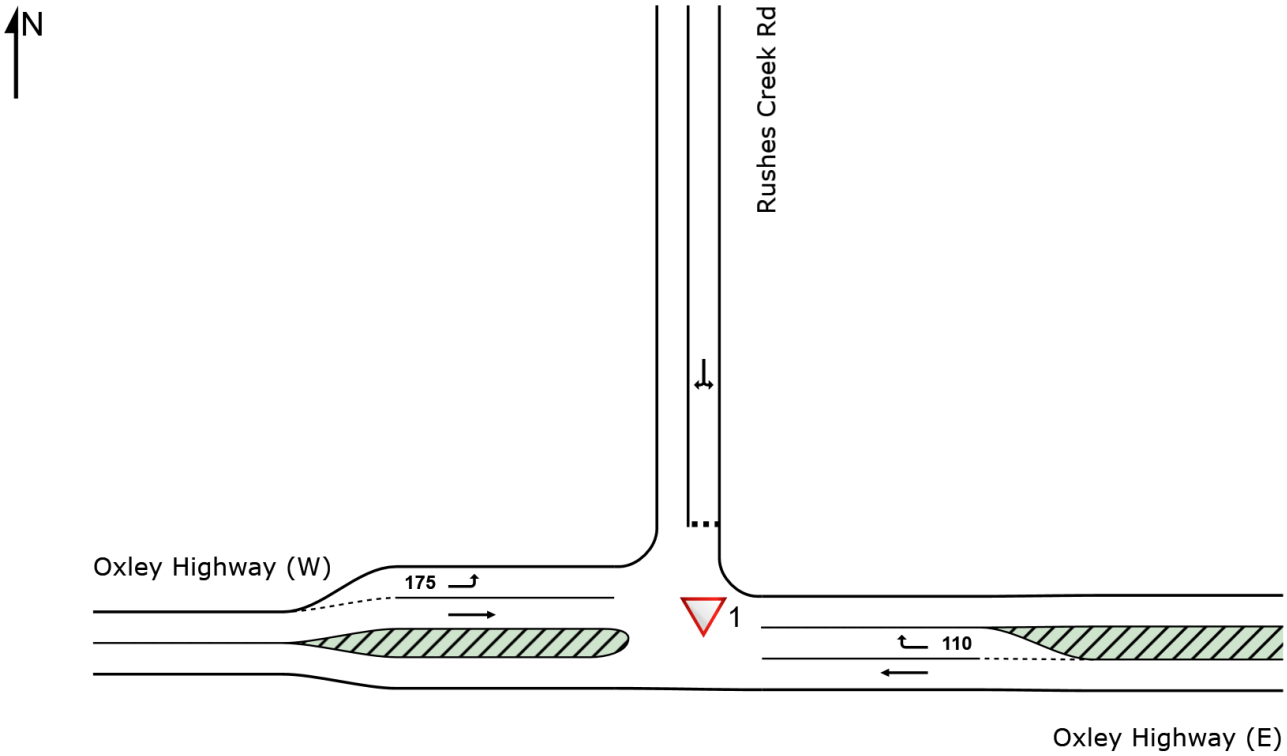
Detailed SIDRA Outputs

SITE LAYOUT

Site: 1 [2025 BG + DEV + CONS AM (Site Folder: Oxley Hwy/ Rushes Creek Rd)]

Intersection: Oxley Highway/Rushes Creek Road (existing)
Prepared by: CL
Site Category: Existing Design
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Organisation: SLR CONSULTING AUSTRALIA | Licence: NETWORK / 1PC | Created: Tuesday, 23 March 2021 11:46:49 AM
Project: H:\BNE\Projects-SLR\620-BNE\620.30288.00000 Rushes Creek PPF CTMP\02 Analysis\2021 03 - SIDRA\620.30288 CTMP SIDRA.sip9

MOVEMENT SUMMARY

Site: 1 [2025 BG + DEV + CONS AM (Site Folder: Oxley Hwy/ Rushes Creek Rd)]

Intersection: Oxley Highway/Rushes Creek Road (existing)
Prepared by: CL
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Oxley Highway (E)														
5	T1	130	21	137	16.2	0.078	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	100.0
6	R2	49	7	52	14.3	0.048	8.8	LOS A	0.2	1.5	0.32	0.65	0.32	67.8
Approach		179	28	188	15.6	0.078	2.4	NA	0.2	1.5	0.09	0.18	0.09	88.5
North: Rushes Creek Rd														
7	L2	16	3	17	18.8	0.047	9.2	LOS A	0.2	1.4	0.39	0.68	0.39	65.4
9	R2	17	2	18	11.8	0.047	11.4	LOS A	0.2	1.4	0.39	0.68	0.39	67.3
Approach		33	5	35	15.2	0.047	10.4	LOS A	0.2	1.4	0.39	0.68	0.39	66.3
West: Oxley Highway (W)														
10	L2	15	2	16	13.3	0.009	8.2	LOS A	0.0	0.0	0.00	0.66	0.00	69.8
11	T1	169	31	178	18.3	0.102	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	100.0
Approach		184	33	194	17.9	0.102	0.7	NA	0.0	0.0	0.00	0.05	0.00	96.5
All Vehicles		396	66	417	16.7	0.102	2.3	NA	0.2	1.5	0.07	0.16	0.07	89.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [2025 BG + DEV + CONS PM (Site Folder: Oxley Hwy/ Rushes Creek Rd)]

Intersection: Oxley Highway/Rushes Creek Road (existing)
Prepared by: CL
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Oxley Highway (E)														
5	T1	154	12	162	7.8	0.087	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	100.0
6	R2	14	3	15	21.4	0.014	8.9	LOS A	0.1	0.4	0.31	0.63	0.31	65.6
Approach		168	15	177	8.9	0.087	0.7	NA	0.1	0.4	0.03	0.05	0.03	95.8
North: Rushes Creek Rd														
7	L2	46	8	48	17.4	0.098	9.1	LOS A	0.4	2.9	0.35	0.67	0.35	66.3
9	R2	30	4	32	13.3	0.098	11.3	LOS A	0.4	2.9	0.35	0.67	0.35	67.3
Approach		76	12	80	15.8	0.098	10.0	LOS A	0.4	2.9	0.35	0.67	0.35	66.7
West: Oxley Highway (W)														
10	L2	21	4	22	19.0	0.014	8.3	LOS A	0.0	0.0	0.00	0.66	0.00	67.9
11	T1	154	17	162	11.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	100.0
Approach		175	21	184	12.0	0.089	1.0	NA	0.0	0.0	0.00	0.08	0.00	94.6
All Vehicles		419	48	441	11.5	0.098	2.5	NA	0.4	2.9	0.07	0.18	0.07	88.3

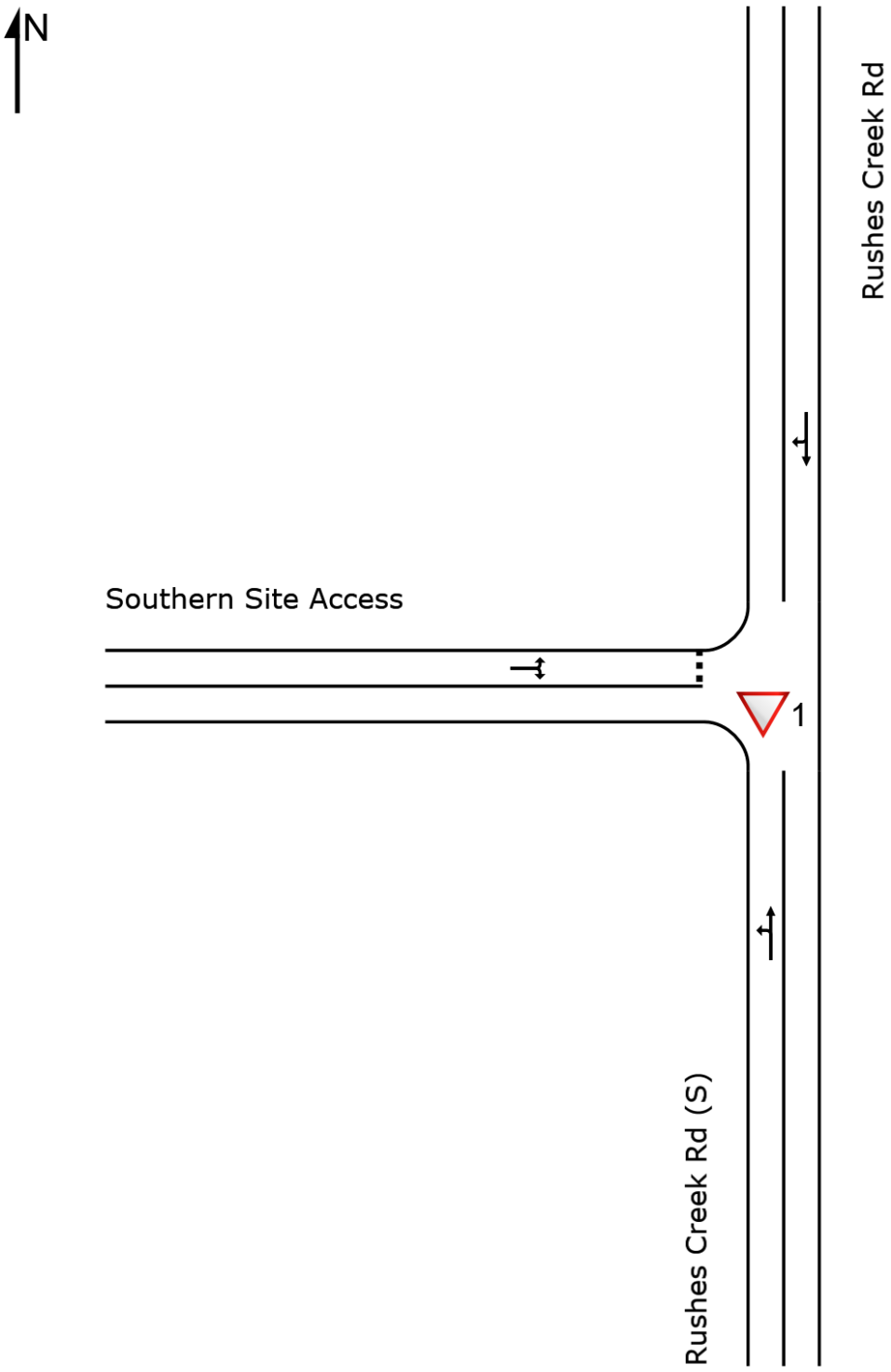
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

Site: 2 [2025 BG + DEV + CONS AM (Site Folder: Rushes Creek Rd/Southern Site Access)]

Intersection: Rushes Creek Road/Southern Site Access (proposed)
Prepared by: CL
Site Category: Proposed Design 1
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 2 [2025 BG + DEV + CONS AM (Site Folder: Rushes Creek Rd/Southern Site Access)]

Intersection: Rushes Creek Road/Southern Site Access (proposed)
Prepared by: CL
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Rushes Creek Rd (S)														
10	L2	41	3	43	7.3	0.039	8.1	LOS A	0.0	0.0	0.00	0.43	0.00	75.3
11	T1	23	6	24	26.1	0.039	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	87.0
Approach		64	9	67	14.1	0.039	5.2	NA	0.0	0.0	0.00	0.43	0.00	79.2
North: Rushes Creek Rd (S)														
5	T1	29	4	31	13.8	0.018	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	99.0
6	R2	1	0	1	0.0	0.018	7.6	LOS A	0.0	0.0	0.01	0.02	0.01	34.0
Approach		30	4	32	13.3	0.018	0.3	NA	0.0	0.0	0.01	0.02	0.01	93.1
West: Southern Site Access														
7	L2	1	0	1	0.0	0.006	0.1	LOS A	0.0	0.2	0.13	0.14	0.13	31.5
9	R2	5	2	5	40.0	0.006	1.0	LOS A	0.0	0.2	0.13	0.14	0.13	28.8
Approach		6	2	6	33.3	0.006	0.8	LOS A	0.0	0.2	0.13	0.14	0.13	29.2
All Vehicles		100	15	105	15.0	0.039	3.4	NA	0.0	0.2	0.01	0.29	0.01	74.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [2025 BG + DEV + CONS PM (Site Folder: Rushes Creek Rd/Southern Site Access)]

Intersection: Rushes Creek Road/Southern Site Access (proposed)
Prepared by: CL
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Rushes Creek Rd (S)														
10	L2	5	2	5	40.0	0.022	8.9	LOS A	0.0	0.0	0.00	0.10	0.00	70.0
11	T1	30	5	32	16.7	0.022	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	97.7
Approach		35	7	37	20.0	0.022	1.3	NA	0.0	0.0	0.00	0.10	0.00	92.5
North: Rushes Creek Rd (S)														
5	T1	34	8	36	23.5	0.022	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	99.1
6	R2	1	0	1	0.0	0.022	7.5	LOS A	0.0	0.1	0.01	0.02	0.01	34.0
Approach		35	8	37	22.9	0.022	0.2	NA	0.0	0.1	0.01	0.02	0.01	94.0
West: Southern Site Access														
7	L2	1	0	1	0.0	0.038	0.1	LOS A	0.1	0.9	0.15	0.18	0.15	31.4
9	R2	41	3	43	7.3	0.038	0.9	LOS A	0.1	0.9	0.15	0.18	0.15	30.9
Approach		42	3	44	7.1	0.038	0.9	LOS A	0.1	0.9	0.15	0.18	0.15	30.9
All Vehicles		112	18	118	16.1	0.038	0.8	NA	0.1	0.9	0.06	0.10	0.06	53.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

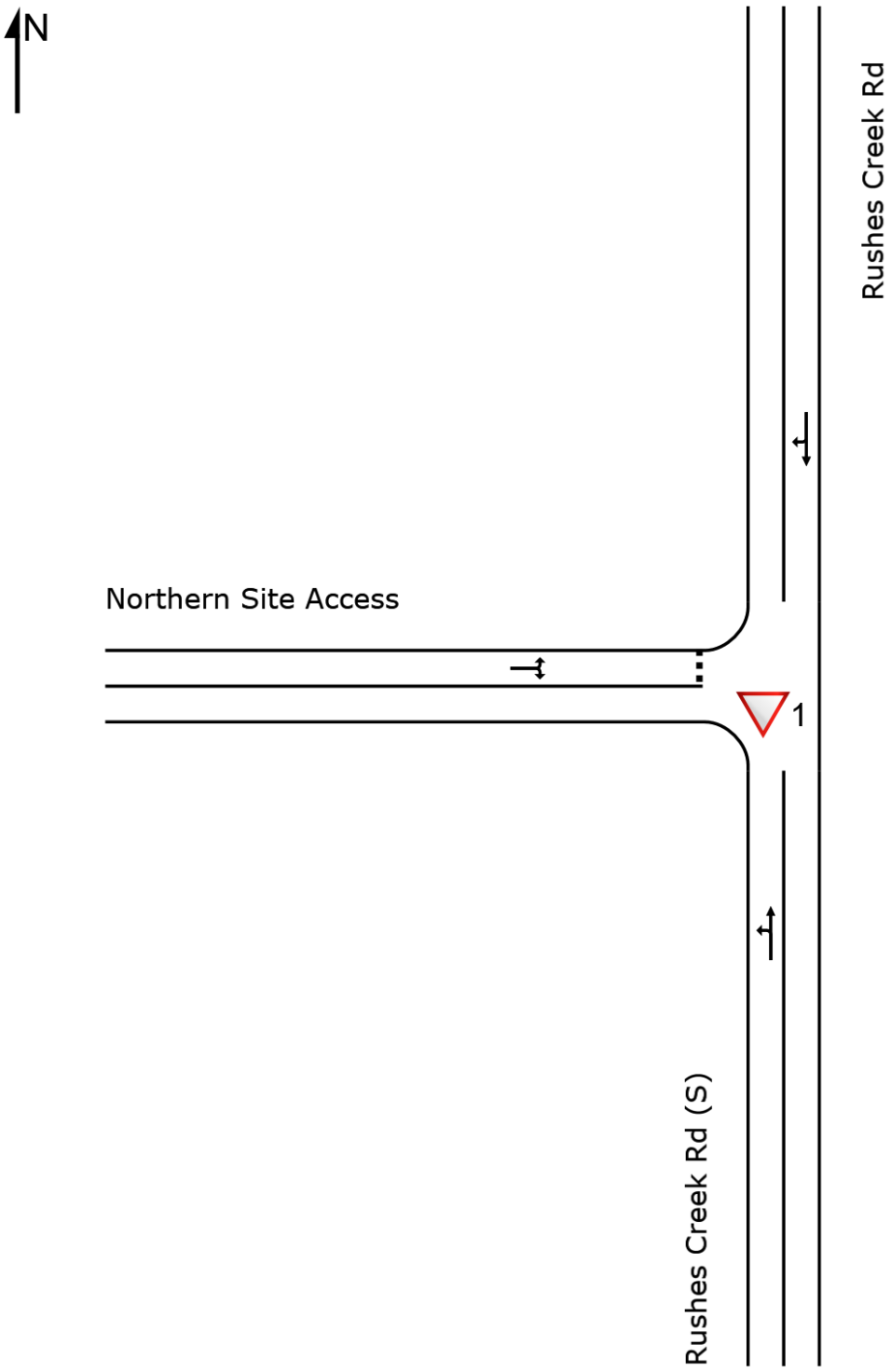
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SITE LAYOUT

Site: 3 [2025 BG + DEV + CONS AM (Site Folder: Rushes Creek Rd/Northern Site Access)]

Intersection: Rushes Creek Road/Northern Site Access (proposed)
Prepared by: CL
Site Category: Proposed Design 1
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 3 [2025 BG + DEV + CONS AM (Site Folder: Rushes Creek Rd/Northern Site Access)]

Intersection: Rushes Creek Road/Northern Site Access (proposed)
Prepared by: CL
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Rushes Creek Rd (S)														
10	L2	41	3	43	7.3	0.039	8.1	LOS A	0.0	0.0	0.00	0.43	0.00	75.3
11	T1	23	6	24	26.1	0.039	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	87.0
Approach		64	9	67	14.1	0.039	5.2	NA	0.0	0.0	0.00	0.43	0.00	79.2
North: Rushes Creek Rd (S)														
5	T1	29	4	31	13.8	0.018	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	99.0
6	R2	1	0	1	0.0	0.018	7.6	LOS A	0.0	0.0	0.01	0.02	0.01	34.0
Approach		30	4	32	13.3	0.018	0.3	NA	0.0	0.0	0.01	0.02	0.01	93.1
West: Northern Site Access														
7	L2	1	0	1	0.0	0.006	0.1	LOS A	0.0	0.2	0.13	0.14	0.13	31.5
9	R2	5	2	5	40.0	0.006	1.0	LOS A	0.0	0.2	0.13	0.14	0.13	28.8
Approach		6	2	6	33.3	0.006	0.8	LOS A	0.0	0.2	0.13	0.14	0.13	29.2
All Vehicles		100	15	105	15.0	0.039	3.4	NA	0.0	0.2	0.01	0.29	0.01	74.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2025 BG + DEV + CONS PM (Site Folder: Rushes Creek Rd/Northern Site Access)]

Intersection: Rushes Creek Road/Northern Site Access (proposed)
Prepared by: CL
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Rushes Creek Rd (S)														
10	L2	5	2	5	40.0	0.022	8.9	LOS A	0.0	0.0	0.00	0.10	0.00	70.0
11	T1	30	5	32	16.7	0.022	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	97.7
Approach		35	7	37	20.0	0.022	1.3	NA	0.0	0.0	0.00	0.10	0.00	92.5
North: Rushes Creek Rd (S)														
5	T1	34	8	36	23.5	0.022	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	99.1
6	R2	1	0	1	0.0	0.022	7.5	LOS A	0.0	0.1	0.01	0.02	0.01	34.0
Approach		35	8	37	22.9	0.022	0.2	NA	0.0	0.1	0.01	0.02	0.01	94.0
West: Northern Site Access														
7	L2	1	0	1	0.0	0.038	0.1	LOS A	0.1	0.9	0.15	0.18	0.15	31.4
9	R2	41	3	43	7.3	0.038	0.9	LOS A	0.1	0.9	0.15	0.18	0.15	30.9
Approach		42	3	44	7.1	0.038	0.9	LOS A	0.1	0.9	0.15	0.18	0.15	30.9
All Vehicles		112	18	118	16.1	0.038	0.8	NA	0.1	0.9	0.06	0.10	0.06	53.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
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NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

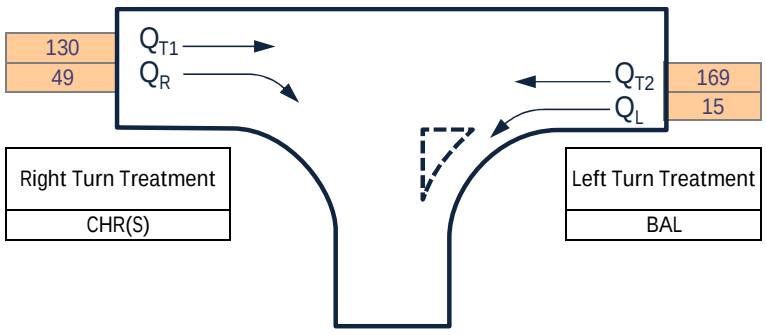
APPENDIX H

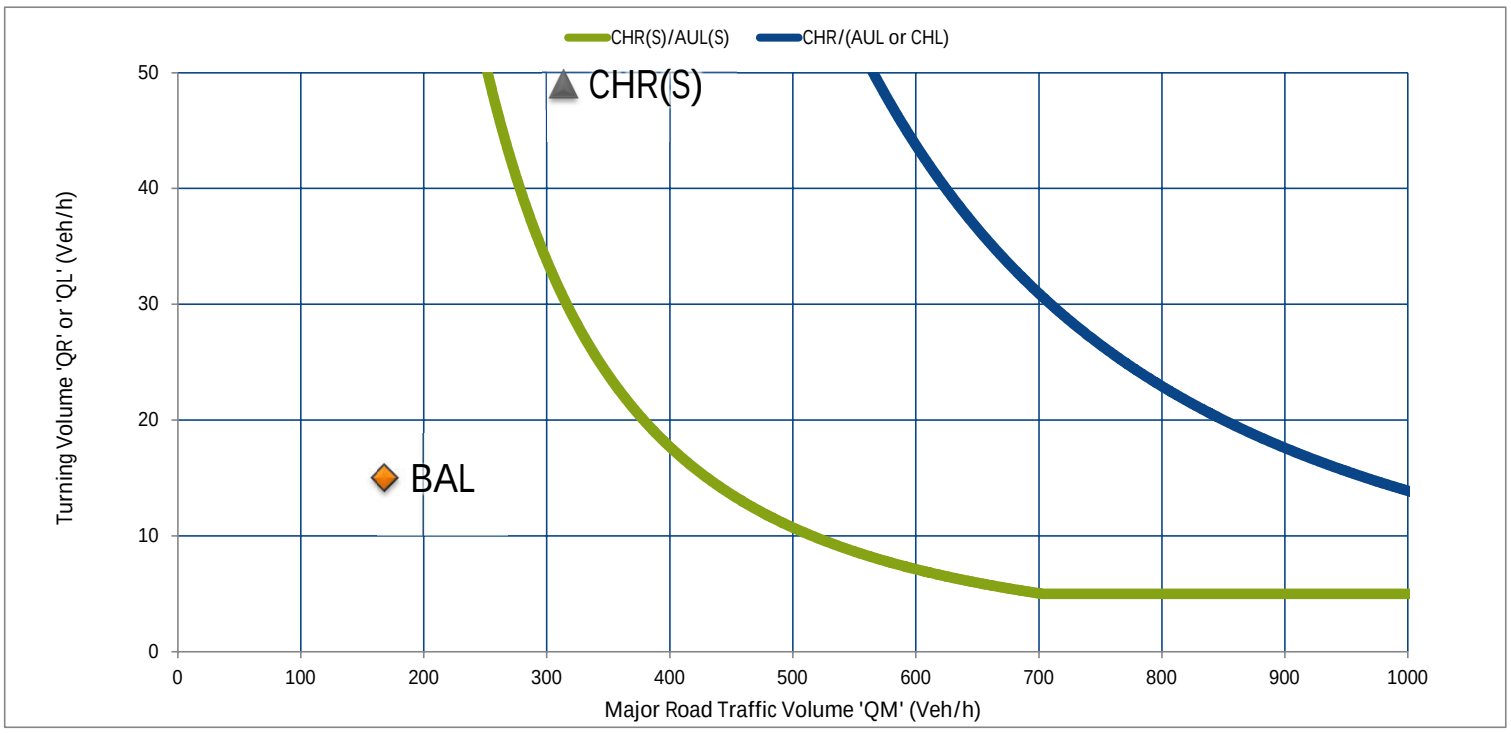
Turn Warrant Assessment

Assessment Year	2025
Peak Period	AM
Scenario	BG + DEV + CONS

Design Domain	Extended Design Domain
Design Year	10
Lane Count	2L2W
Design Speed	>=100km/h
Splitter Island?	No

Q_M	Q_R/Q_L	
314	49	Right
169	15	Left

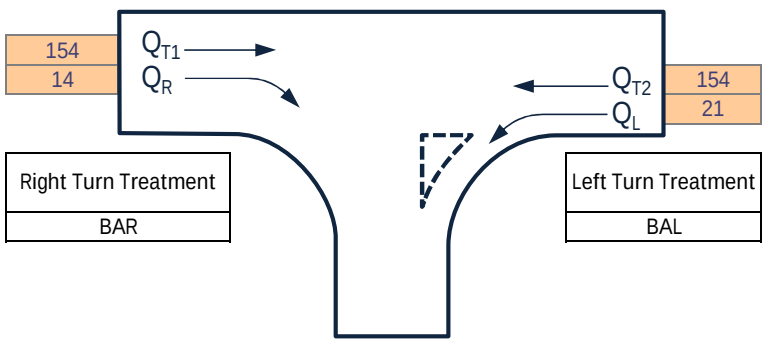


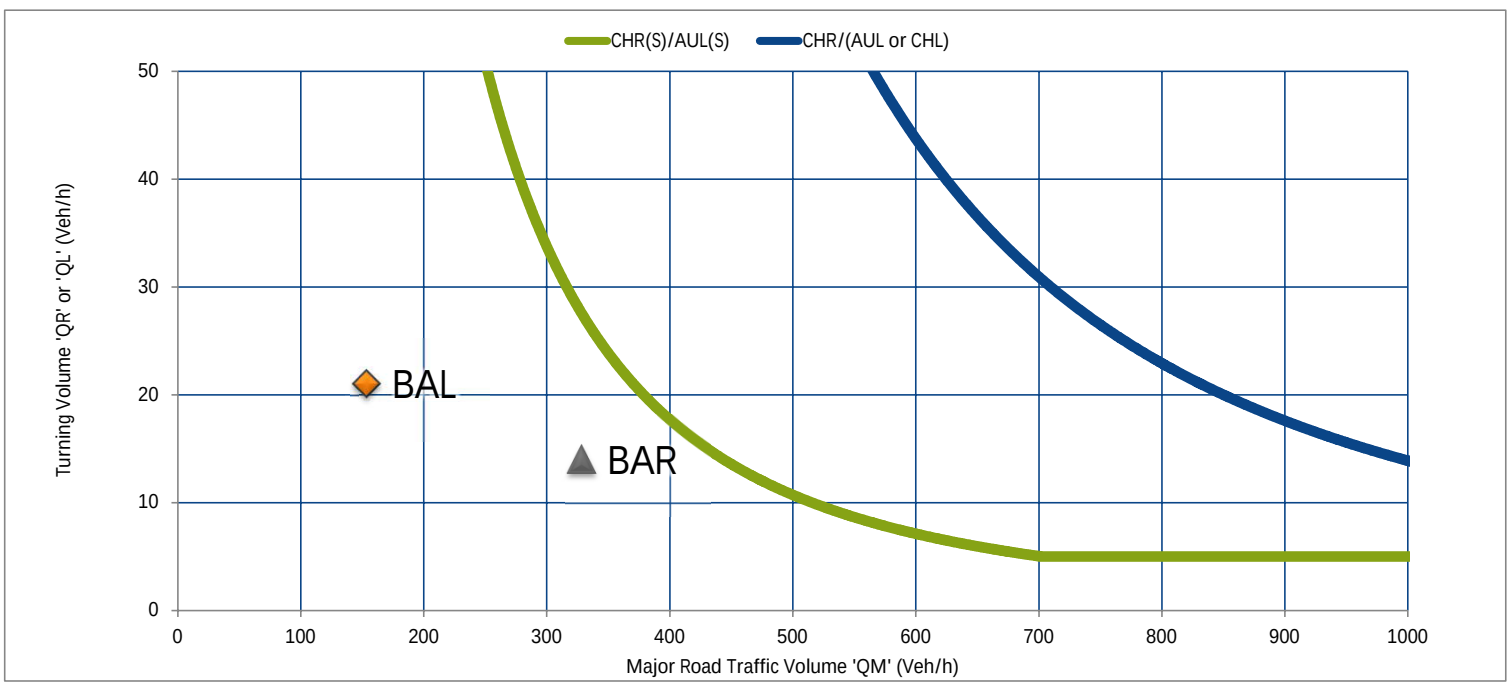


Assessment Year	2025
Peak Period	PM
Scenario	BG + DEV + CONS

Design Domain	Extended Design Domain
Design Year	10
Lane Count	2L2W
Design Speed	>=100km/h
Splitter Island?	No

Q_M	Q_R/Q_L	
329	14	Right
154	21	Left



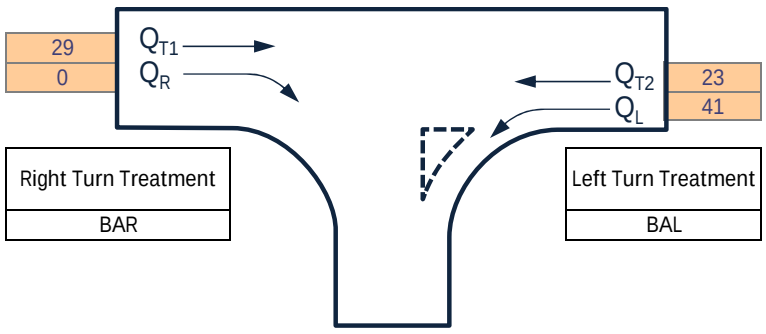


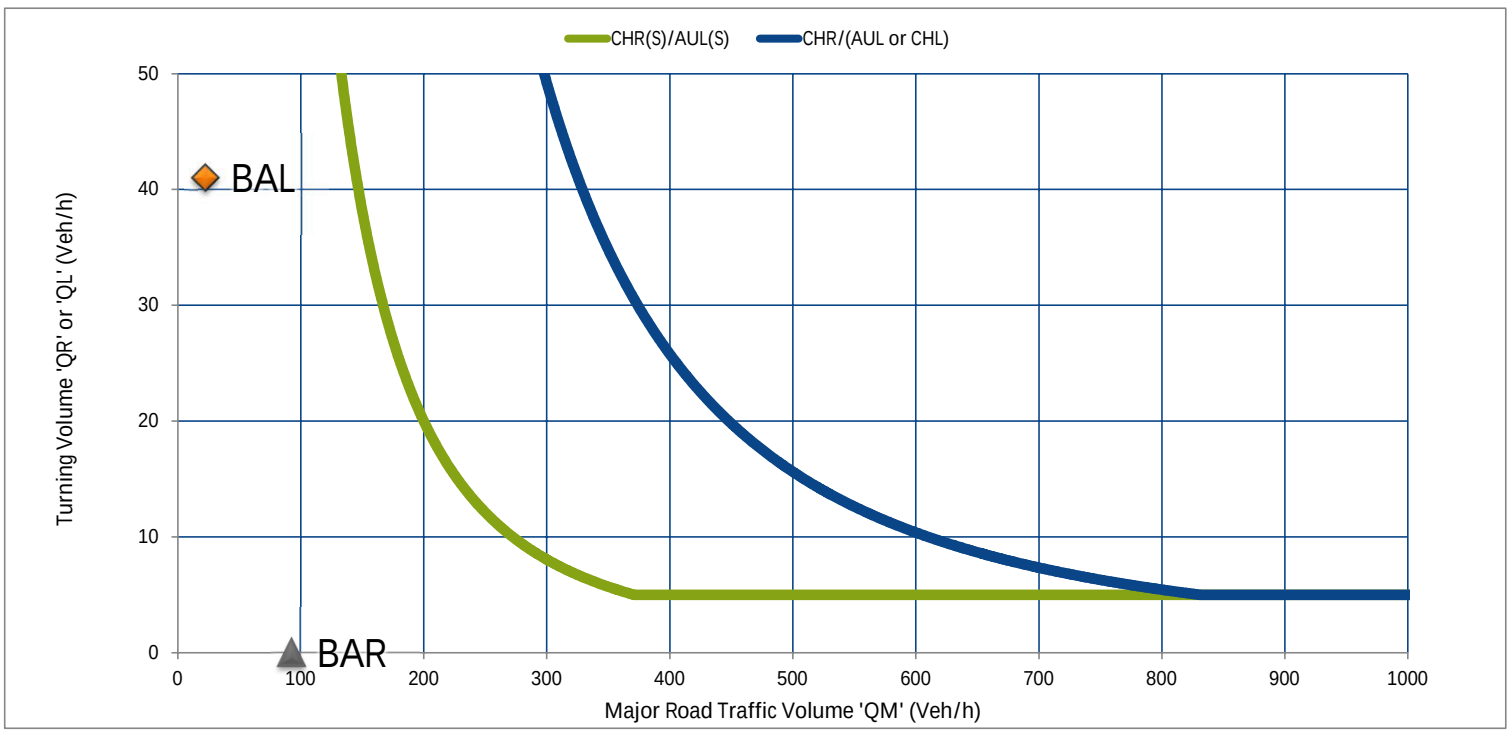
Reflects changes made in RPDM (Ed2: Vol3) Supplement to Austroads Part 4A (DTMR - August, 2014)

Assessment Year	2025
Peak Period	AM
Scenario	BG + DEV + CONS

Design Domain	Normal Design Domain
Design Year	10
Lane Count	2L2W
Design Speed	>=100km/h
Splitter Island?	No

Q_M	Q_R/Q_L	
93	0	Right
23	41	Left

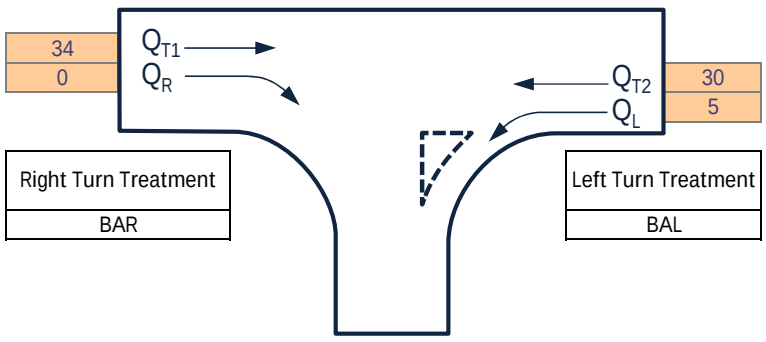


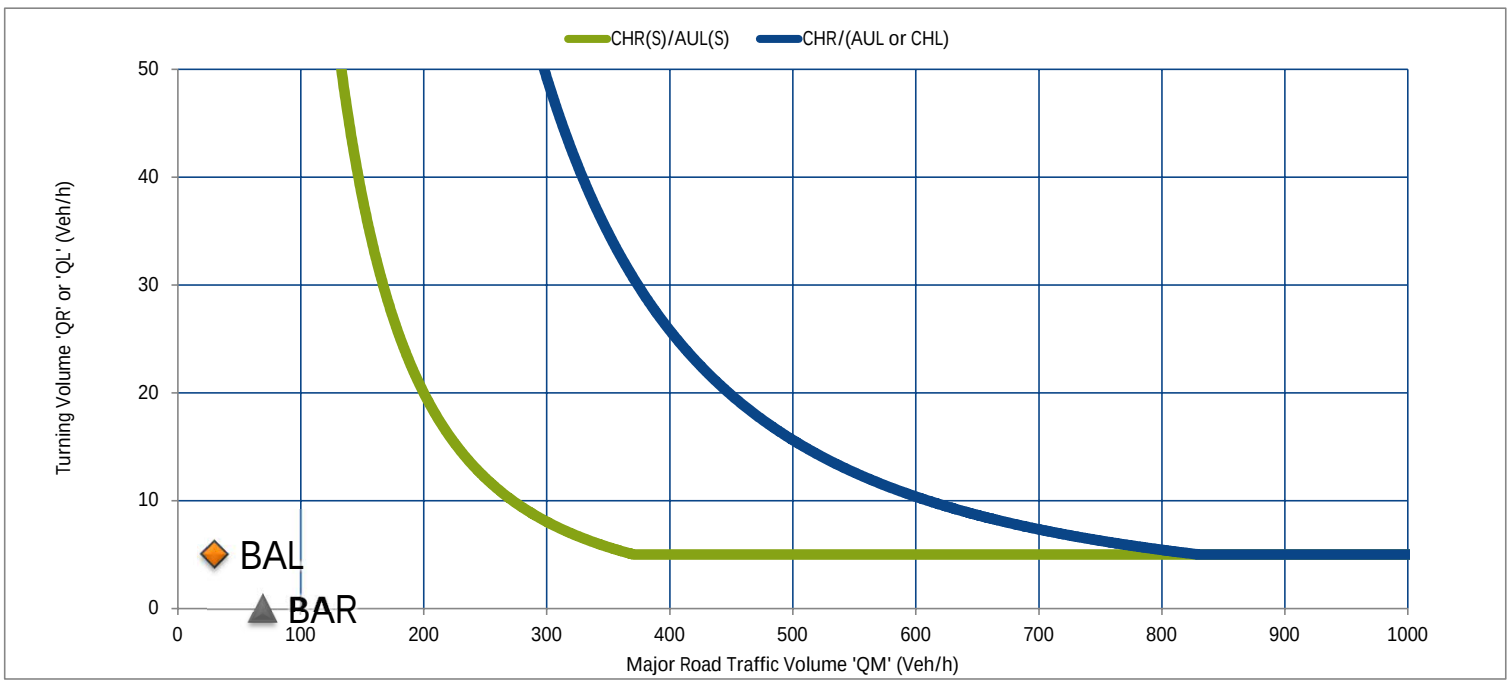


Assessment Year	2025
Peak Period	PM
Scenario	BG + DEV + CONS

Design Domain	Normal Design Domain
Design Year	10
Lane Count	2L2W
Design Speed	>=100km/h
Splitter Island?	No

Q_M	Q_R/Q_L	
69	0	Right
30	5	Left



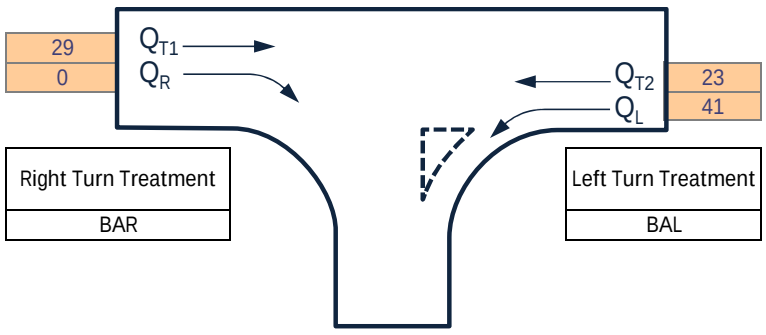


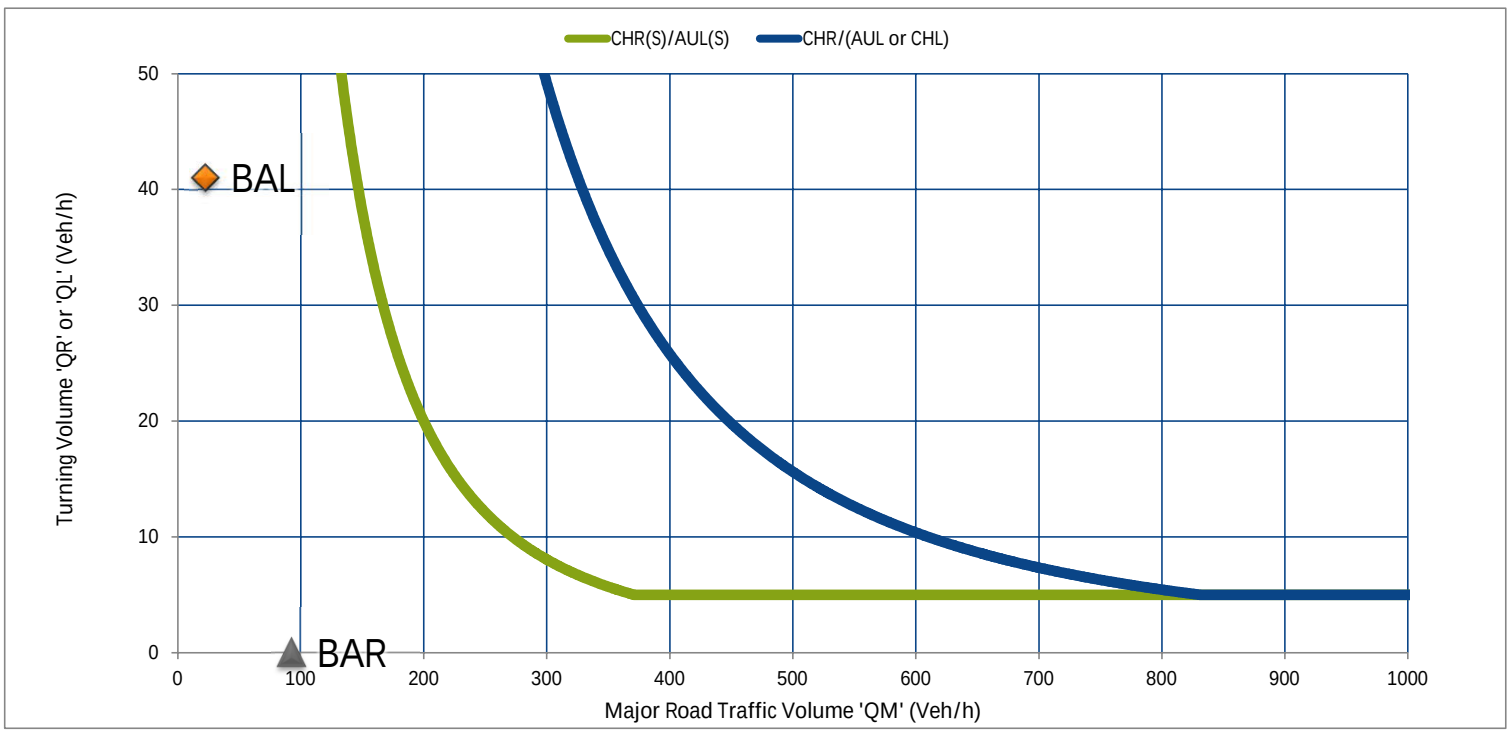
Reflects changes made in RPDM (Ed2: Vol3) Supplement to Austroads Part 4A (DTMR - August, 2014)

Assessment Year	2025
Peak Period	AM
Scenario	BG + DEV + CONS

Design Domain	Normal Design Domain
Design Year	10
Lane Count	2L2W
Design Speed	>=100km/h
Splitter Island?	No

Q_M	Q_R/Q_L	
93	0	Right
23	41	Left

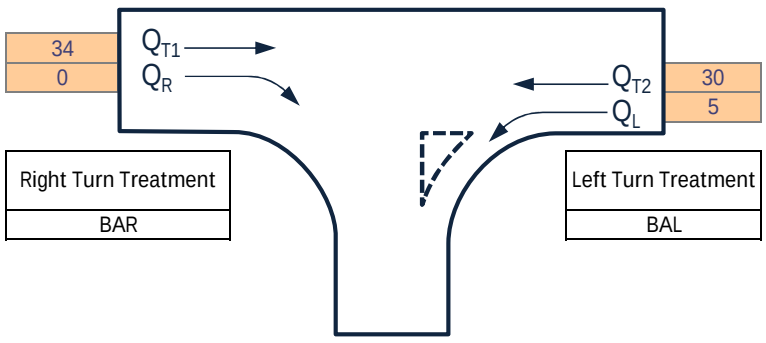


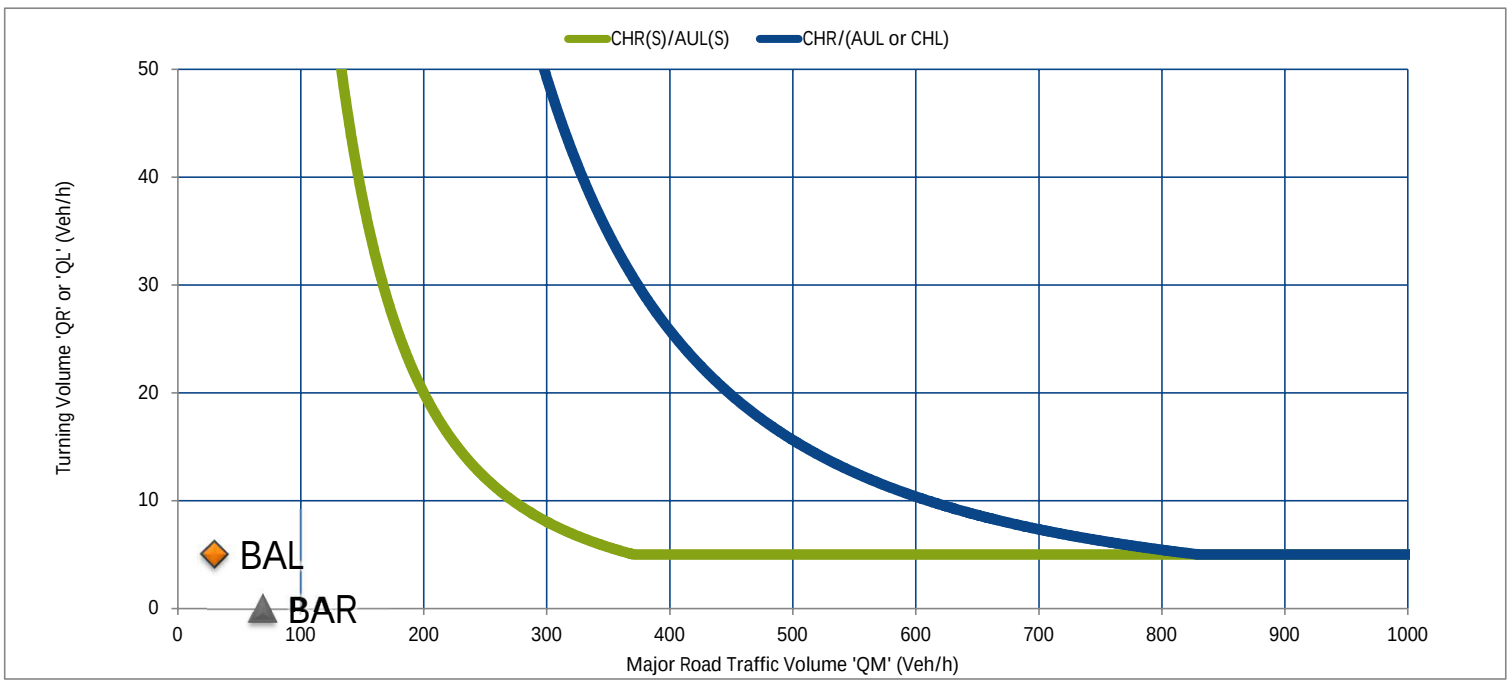


Assessment Year	2025
Peak Period	PM
Scenario	BG + DEV + CONS

Design Domain	Normal Design Domain
Design Year	10
Lane Count	2L2W
Design Speed	>=100km/h
Splitter Island?	No

Q_M	Q_R/Q_L	
69	0	Right
30	5	Left





Reflects changes made in RPDM (Ed2: Vol3) Supplement to Austroads Part 4A (DTMR - August, 2014)

APPENDIX I

Driver's Code of Conduct

Rushes Creek Poultry Production Farm (Construction Phase): Drivers Code of Conduct

1 Drivers Code of Conduct

1.1 General Requirements

All heavy vehicle drivers are required to:

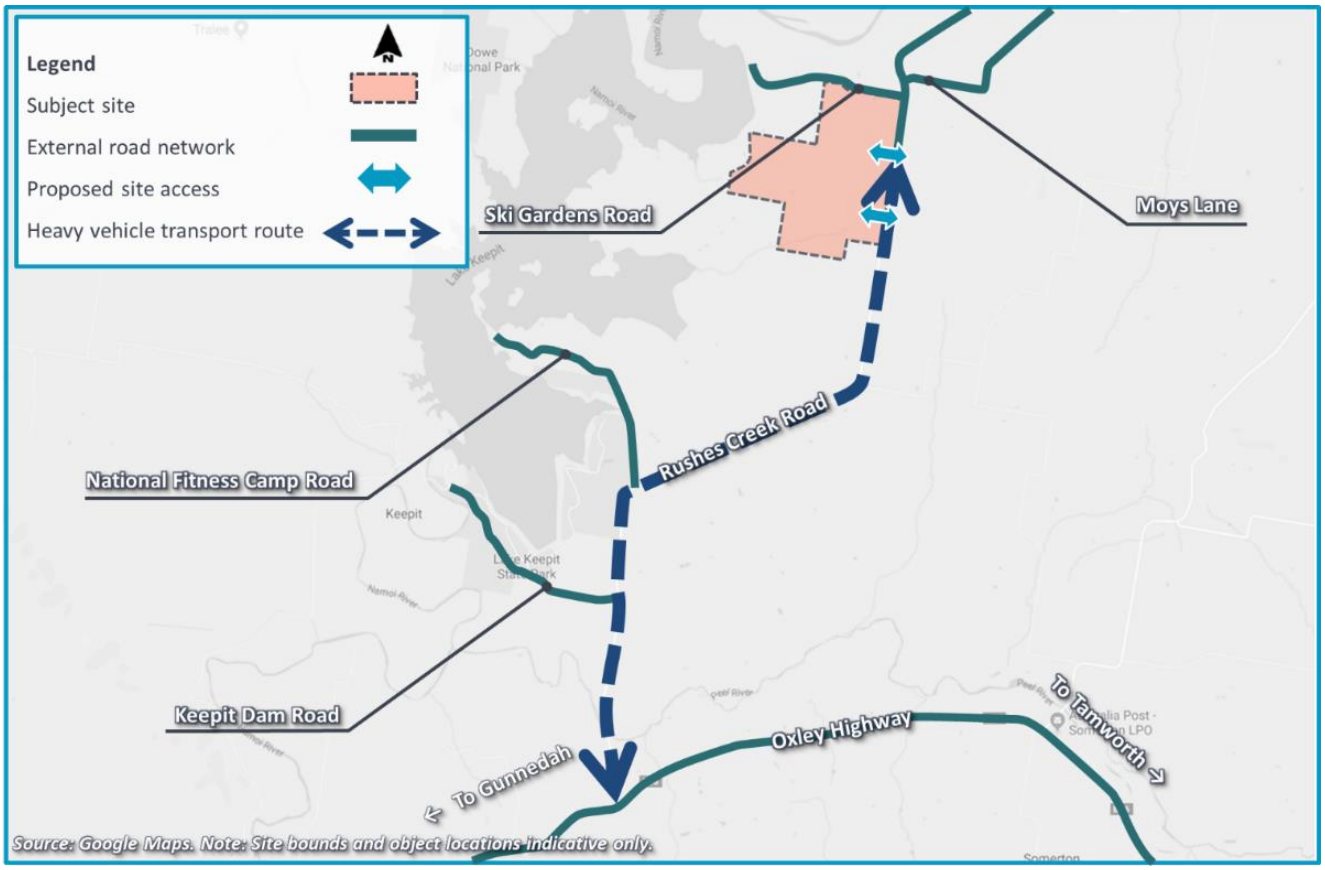
- Undertake a site induction carried out by authorised site personnel or suitably qualified person under the direction of the site manager;
- Obey all site signage and the directions of site personnel;
- Hold a valid driver's licence which is appropriate for the class of vehicle under their operation;
- Operate vehicles in a safe and courteous manner, within and external to the subject site;
- Ensure their load is legal, covered and secure before entering or exiting the site;
- Comply with the relevant requirements of Chain of Responsibility legislation.

1.2 Site Specific Requirements

The following procedures are to be observed by all heavy vehicle drivers accessing the subject site:

- The construction site has a drug and alcohol policy which includes random testing;
- Vehicles are to use designated circulation roads within the site where possible;
- All vehicles are to park and load/unload within the site using designated parking and loading areas where possible. Vehicles are not to park or load/unload within the public road reserve;
- Posted speed limits on the external road network are to be observed, and vehicle speeds are to be restricted to 60km/h within the subject site, or 40km/h within the vicinity of work sites or farms;
- Heavy vehicle access to the subject site is to be via the designated haulage route of Rushes Creek Road to the south of the site towards the Oxley Highway as indicated on **Figure 1**. Heavy vehicles are not to use Rushes Creek Road to the north of the subject site (i.e. towards Manilla).
- Heavy vehicles using Rushes Creek Road are not to use engine or compression braking systems, except where required for safety reasons;
- Vehicles are to be turned off when not in use;
- Drivers are to report excessive dust production from internal circulation roads to the site manager.

Figure 1 Designated Heavy Vehicle Transport Route



Vehicles entering the subject site are to be registered, roadworthy, and of sound mechanical condition. Site management may request to inspect any vehicle or request maintenance records for any vehicle and reserves the right to prohibit any vehicle from entering the subject site should there be any indication that the vehicle is not roadworthy or safe to operate.

Any accidents, incidents, complaints, hazards, spillages or near misses must be reported immediately to the site manager. This includes incidents along the designated heavy vehicle transport route on the external road network.

2 Non-compliance

Should any driver be found to have acted in breach of this Drivers Code of Conduct, through either a formal complaint, or through observations by authorised site personnel, disciplinary action will be taken, which could include the following:

- Verbal notification (if possible) and written confirmation to the driver of non-compliance with the Drivers Code of Conduct;
- Refusal to load/unload affected vehicles and direction to the driver to leave the site;
- Implementation of a temporary ban of the affected vehicle or driver until such time as sufficient evidence has been provided to authorised site personnel that the breach has been rectified and/or will not occur again;
- In the case of a serious breach or repeated non-compliance with the Drivers Code of Conduct, a permanent site ban of the affected vehicle or driver will be considered.

3 Confirmation of Understanding

I, …… of ……

(name) **(company)**

have read/had explained to me, the *Rushes Creek Poultry Production Farm (Construction Phase): Code of Conduct* and understand my obligations with regard to its content.

I further confirm I will comply with all requirements of the *Rushes Creek Poultry Production Farm (Construction Phase): Code of Conduct* and also that I understand the consequences of non-compliance with this document.

Signed: ……

Date: ……

Endorsed by: ……
(Authorised site representative)

ASIA PACIFIC OFFICES

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Spring Hill QLD 4000
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New Zealand
T: +64 274 898 628

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix B

Erosion and Sediment Control Plans

General Note

1. THE DISTURBED FOOTPRINT OF THE SITE INCLUDES THE NEW ACCESS ROAD, NEW SHEDS, NEW SWALES BETWEEN THE SHEDS, NEW ROAD AROUND THE SHEDS, NEW PERIMETER SWALE DRAIN AND SWALE / DEFLECTION BANK. THE PERIMETER SWALE DRAIN INTERCEPTS ALL RUNOFF FROM THE SHEDS ETC AND DIRECTS WATER TO THE RETENTION DAM. THE RETENTION DAM HAVE BEEN SIZED TO CAPTURE THE 1 IN 100, YEAR 24 HOUR STORM EVENT.
2. THE GENERAL FALL OF THE SITE IS IN A NORTHERLY DIRECTION AND A SILT FENCE IS TO BE PLACED AS SHOWN FOR SEDIMENT CONTROL.
3. ALL STOCKPILE AREAS ARE TO HAVE SILT FENCES PLACED ON THE LOW SIDE.

EROSION MANAGEMENT NOTES

SWM1 THE CONTRACTOR WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE CONSISTENT WITH 'MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION' - ALSO KNOWN AS'THE BLUE BOOK'.

SWM2 ALL BUILDERS AND SUB-CONTRACTORS SHALL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.

SWM3 WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, IE THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.

SWM4 SEDIMENT FENCING WILL BE INSTALLED AS INDICATED ON THE PLANS AND AT THE DIRECTION OF SITE SUPERINTENDENT TO ENSURE CONTAINMENT OF SEDIMENT. THE SEDIMENT FENCING WILL OUTLET OR OVERFLOW UNDER STABILISED CONDITIONS INTO THE STORMWATER SYSTEM.

SWM5 STOCKPILES WILL NOT BE LOCATED WITHIN 2m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS. WHERE THEY ARE BETWEEN 2m AND 5m METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, EG. THROUGH INSTALLATION OF SEDIMENT FENCING.

SWM6 DURING WINDY WEATHER, LARGE, DISTURBED, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

SWM7 UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED T0 AREAS OF WORKABLE SIZE.

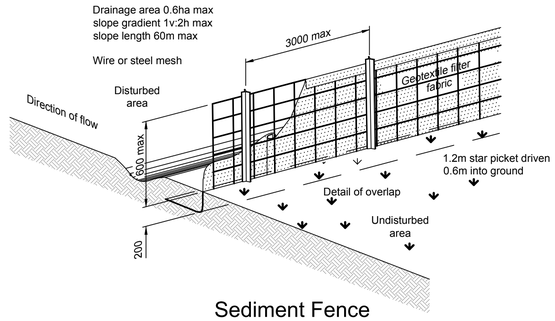
SWM8 WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE :

INSTALL SEDIMENT FENCES WHERE REQUIRED AS DIRECTED BY THE SITE SUPERINTENDENT TO ENSURE CONTAINMENT OF SEDIMENT ON-SITE. CONTRACTOR IS TO INSPECT AND REPAIR EROSION AND SEDIMENT CONTROL AFTER RAIN.

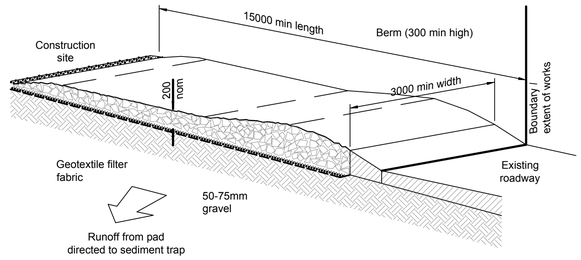
SWM9 TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

SWM10 DIVERSION BANKS/CHANNELS WILL BE REHABILITATED AS SOON AS POSSIBLE AND WITHIN 5 WORKING DAYS FROM THEIR FINAL SHAPING.

SWM11 FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.



Sediment Fence
(Geotextile Filter Fabric)
NTS



Temporary Site Entrance
NTS

Maintenance

- The temporary access shall be maintained in a condition that prevents tracking or flowing of sediment onto public rights of way.
- This may require periodic top dressing with additional gravel as conditions demand and repair and/or cleanout of any measures used to trap sediment,
- All sediment spilled, dropped, washed or tracked onto public rights of way must be removed immediately.

Revision	Amendment or reason for issue	Issue date	Drawing completed by	Designed & dwg. checked by	Verified by ✕ = Not verified	Issue authorised (*)
1	Issued for Information	05.07.2021	L.V.R.	L.V.R.	L.V.R.	

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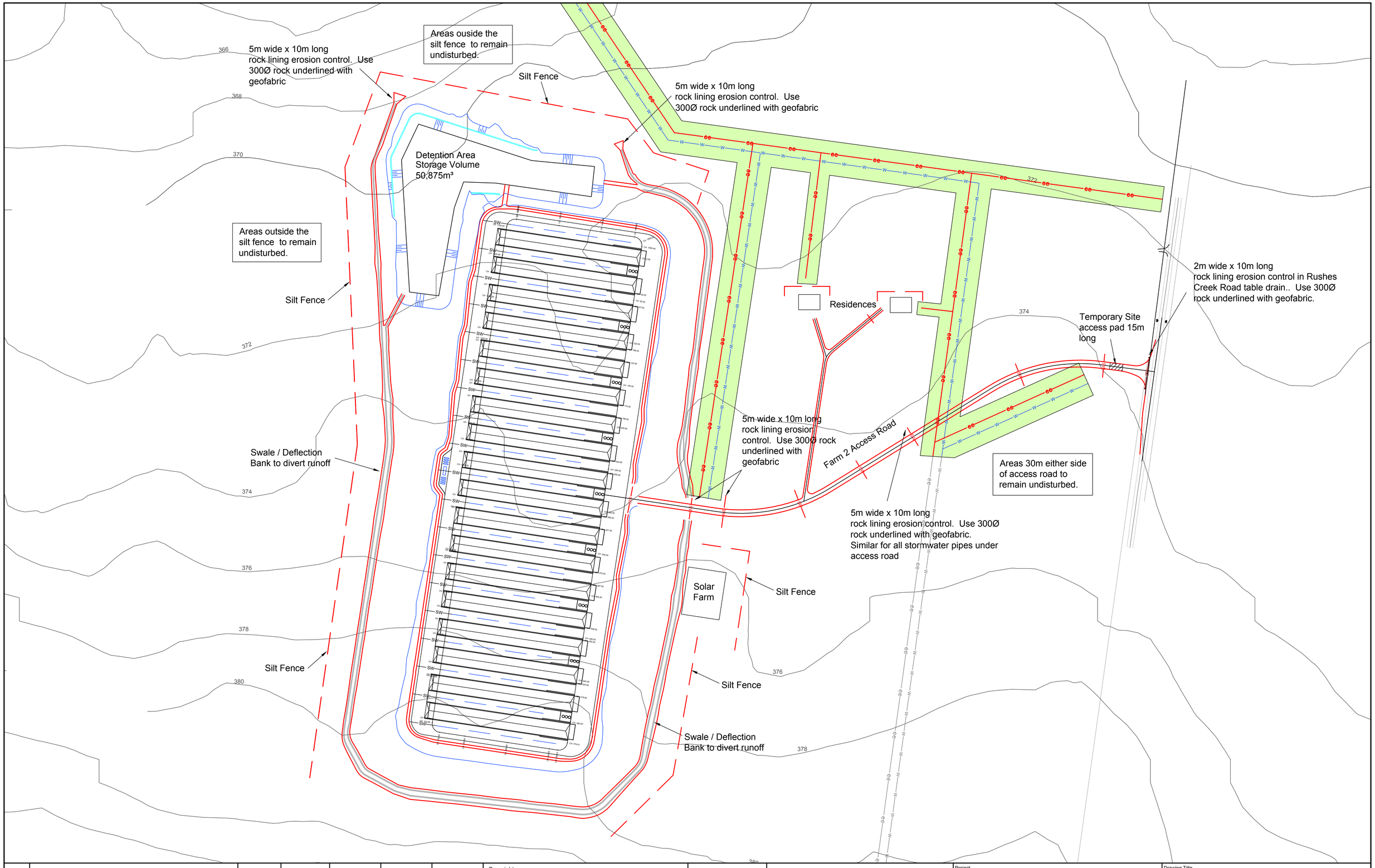
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Client: ProTen
Architect / Project Manager: ProTen

Drawing Title: Soil and Erosion Control Note And Details
Scales: NTS
Client Project No.:
Project Number: 21W023
Dwg. No.: C18
Sheet: 18 of 20
Revision: 1

A1 SHEET
0 100mm 200mm 300mm



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Project	ProTen Poultry Sheds Rushes Creek Tamworth
Drawing Title	Soil and Erosion Control Plan
Client	ProTen
Scales	NTS
Client Project No.	
Architect / Project Manager	ProTen
Project Number	21W023
Dwg. No.	C19
Sheet	19 of 20
Revision	1

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Namoi River

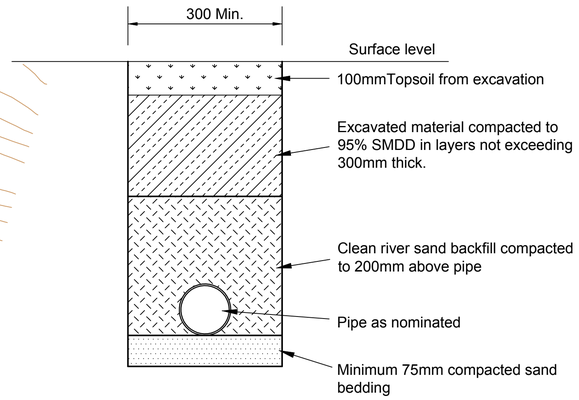
Silt Fencing

Water Pump - location to be determined by hydraulic design

Silt Fencing

Silt Fencing

Proposed Water and Overhead Electricity



Trench Detail for Water

Top 100mm of backfill to be topsoil from excavation and finished flush with natural surface so existing natural overland stormwater flow remains unchanged.

Legend

6m wide construction disturbance area for the installation of overhead electricity and underground water. Areas outside the corridor except for construction traffic manoeuvering, to remain undisturbed. All areas disturbed during construction areas are to rehabiltated with existing site topsoil. Rehabilitated finished levels to match the existing site contour levels so the natural overland flow of stormwater remains unchanged.

372

374

376

378

Revision	Amendment or reason for issue	Issue date	Drawing completed by	Designed & dwg. checked by	Verified by ✕ = Not verified	Issue authorised (*)
1	Issued for Information	05.07.2021	L.V.R.	L.V.R.	L.V.R.	

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Drawing Title: Soil and Erosion Control Plan for Proposed Water and Electricity Supply

Client: ProTen

Scales: NTS

Client Project No.:

Architect / Project Manager: ProTen

Project Number: 21W023

Dwg. No.: C20

Sheet: 20 of 20

Revision: 1

A1 SHEET

0 100mm 200mm 300mm

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix C

Community Consultation Plan

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Community Consultation Plan

Prepared for:

ProTen Tamworth Pty Limited

Prepared by:

July 2021

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Community Consultation Plan

Prepared By:

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Document Control:

Status	Date	Prepared by	Checked by	Authorised by	Comments
Draft	26 May 2021	Lachlan Giles	Eryn Bath	Eryn Bath	For client review
Final v1	27 May 2021	Lachlan Giles	Eryn Bath	Eryn Bath	Approved by DPIE
Final v2	15 July 2021	Eryn Bath	Julian Johnson	Julian Johnson	Updated contact details in Tables 2 and 3 and Section 5

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APPENDICES

Appendix A Regulatory Authorities Contact Details
Appendix B Registered Aboriginal Parties Contact Details
Appendix C Other Stakeholders Contact Details
Appendix D Complaint Report Form

ABBREVIATIONS

Abbreviation	Definition
BCD	DPIE Biodiversity Conservation Division
CCP	Community Consultation Plan
Council	Tamworth Regional Council
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EME	EME Advisory
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority
EPL	Environment Protection Licence
FRNSW	Fire and Rescue NSW
HNELH	Hunter New England Local Health
LGA	Local government area
MP	Member of Parliament
NRAR	Natural Resources Access Regulator
ProTen	ProTen Tamworth Pty Limited
RAPs	Registered Aboriginal Parties
RFS	NSW Rural Fire Service
RTS	Response to Submissions
SHEQ	Safety, Health, Environment, Quality
SLR	SLR Consulting Australia
SSD	State significant development
TfNSW	Transport for NSW
TRRRA	Tamworth Regional Residents and Ratepayers Associated Inc.

1 INTRODUCTION

1.1 Background

ProTen Tamworth Pty Limited (ProTen) obtained Development Consent SSD 7704 from the Department of Planning, Industry and Environment (DPIE) (as delegate for the Minister for Planning and Public Spaces) on 16 April 2020 to construct and operate an intensive poultry broiler production farm within a rural area known as Rushes Creek in the Tamworth Regional Local Government Area (LGA). In summary, the approved Rushes Creek Poultry Production Farm development (the "Development") comprises a total of 54 poultry sheds housing a combined population of 3,051,000 broiler birds, along with various items of ancillary infrastructure.

The following should be referred to for a detailed description of the approved Development:

- *Environmental Impact Statement, Intensive Livestock Agriculture, Rushes Creek Poultry Production Farm, SSD 7704* (SLR Consulting Australia [SLR] 2018) (EIS), including all appendices;
- *Rushes Creek Poultry Production Farm, SSD 7704, Response to Submissions* (EME Advisory [EME] 2019a) (RTS), including all appendices; and
- *Rushes Creek Poultry Production Farm, SSD 7704, Supplementary Response to Submissions* (EME 2019b) (Supplementary RTS), including all appendices.

1.2 Document Purpose and Objectives

This Community Consultation Plan (CCP) establishes the approach and management of community and stakeholder consultation and engagement throughout the construction and operational phases of the Development. It will assist in fulfilling condition B55 of Development Consent SSD 7704, which states:

> *The Applicant must consult with the community regularly throughout the development, including consultation with the nearby sensitive receivers identified in Appendix 2* [of the Development Consent]*, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders.*

The CCP has been prepared in accordance with the requirements of condition B56, as listed in **Table 1**.

Table 1 Development Consent Condition B56

Consent Condition		CCP Section
B56	***Community Consultation Plan*** *The Applicant must prepare a Community Consultation Plan for the development, to the satisfaction of the Planning Secretary. The Plan must:*	
(a)	*be approved by the Planning Secretary prior to the commencement of site preparation works;*	
(b)	*be implemented for the life of the development, or as otherwise agreed by the Planning Secretary;*	
(c)	*assign a central contact person to keep the nearby sensitive receivers regularly informed throughout the development;*	Sections 2.1 and 2.2
(d)	*detail the mechanisms for regularly consulting with:* *(i) the local community;* *(ii) nearby sensitive receivers identified in Appendix 2;* *(iii) relevant regulatory authorities;* *(iv) Registered Aboriginal Parties; and* *(v) other interested stakeholders,* *throughout the development, such as holding regular meetings to inform the community of the progress of the development and report on environmental monitoring results;*	Section 4

Consent Condition		CCP Section
(e)	*include contact details for key community groups, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders; and*	Section 4.1 and Appendices A, B and C
(f)	*include a complaints procedure for recording, responding to and managing complaints, including:* *(i) email, toll-free telephone number and postal address for receiving complaints;* *(ii) advertising the contact details for complaints prior to and during operation, via the local newspaper and through on-site signage;* *(iii) a complaints register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint; and* *(iv) procedures to resolve any disputes that may arise during the course of the development.*	Section 5

The key objectives of the CCP are:

- Provide a coordinated approach to community and stakeholder consultation and engagement;
- Provide timely and accurate information about the Development, including both construction and operational activities;
- Ensure the responsibilities for community and stakeholder consultation and engagement are nominated;
- Promote good relationships between ProTen and the surrounding local community and additional stakeholders;
- Minimise development-related complaints through consultation and awareness; and
- Ensure any development-related complaints are promptly and effectively received, handled and addressed.

The CCP will be implemented for the duration of the Development (unless otherwise agreed by the Planning Secretary).

2 PROTEN'S PROJECT TEAM

2.1 Site Contact Details

Tables 2 and **3** list the key site contacts during the construction and operational phases of the Development, respectively**.**

Table 2 ProTen Contacts - Construction Phase

Role	Name	Contact Details
ProTen Regional Operations Manager - nominated "**central contact person**"	Julian Johnson	Ph: 0406 484 474 Email: julianj@proten.com.au
Construction Site Supervisor	TBC	TBC
ProTen National Construction Manager (NCM)	Adrian McKinnon	Ph: 0427 208 971 Email: adrianm@proten.com.au
ProTen Safety, Health, Environment & Quality (SHEQ) Advisor	Kathryn Singh	Ph: 02 6962 1770 / 0434 550789 Email: kates@proten.com.au
ProTen Safety, Health, Environment & Quality (SHEQ) Officer - Tamworth	Nathalia Garcia Castro	Ph: 0450 409395 Email: nathaliac@proten.com.au
ProTen Risk Manager	Jim Rimmer	Ph: 02 6962 1770 / 0438 750974 Email: jrimmer@proten.com.au
ProTen environmental hotline (toll-free)	-	Ph: 1800 776 994
ProTen Development webpage	-	www.proten.com.au

Table 3 ProTen Contacts - Operational Phase

Role	Name	Contact Details
ProTen Regional Operations Manager - nominated "**central contact person**"	Julian Johnson	Ph: 0406 484 474 Email: julianj@proten.com.au
ProTen Safety, Health, Environment & Quality (SHEQ) Advisor	Kathryn Singh	Ph: 02 6962 1770 / 0434 550789 Email: kates@proten.com.au
ProTen Safety, Health, Environment & Quality (SHEQ) Officer - Tamworth	Nathalia Garcia Castro	Ph: 0450 409395 Email: nathaliac@proten.com.au
ProTen Risk Manager	Jim Rimmer	Ph: 02 6962 1770 / 0438 750974 Email: jrimmer@proten.com.au
ProTen environmental hotline (toll-free)	-	Ph: 1800 776 994
ProTen Development webpage	-	www.proten.com.au
Farm 1 Manager	TBC	TBC
Farm 1 Assistant Manager	TBC	TBC
Farm 2 Manager	TBC	TBC

Role	Name	Contact Details
Farm 2 Assistant Manager	TBC	TBC
Farm 3 Manager	TBC	TBC
Farm 3 Assistant Manager	TBC	TBC
Farm 4 Manager	TBC	TBC
Farm 4 Assistant Manager	TBC	TBC

2.2 Roles and Responsibilities

The key personnel responsible for community and stakeholder consultation and engagement are listed in **Table 4** along with their respective key responsibilities.

Table 4 Roles and Responsibilities

Development Role	Key Responsibilities
ProTen Regional Operations Manager (ROM) - nominated "**central contact person**"	• Overall responsibility for community and stakeholder consultation and engagement in compliance with the development consent and this CCP. • Oversee the implementation of this CCP and provide adequate resources to enable its implementation. • Be the central contact person to keep the surrounding community regularly informed throughout the construction and operational phases of the Development. • Coordinate community information sessions, community newsletters, etc. • Record, notify, investigate and respond to any enquiries and/or complaints and, where necessary, develop and implement corrective actions. • Ensure the site inductions/training for employees and contractors includes the requirements under this CCP. • Approve/reject minor amendments to this CCP (see **Section 6**).
ProTen SHEQ Advisor / Officer	• Assist the Regional Operations Manager (as required) with community and stakeholder consultation and engagement in compliance with the development consent and this CCP. • Assist the Regional Operations Manager (as required) to record, notify, investigate and respond to any enquiries and/or complaints. • Help facilitate appropriate site inductions/training for employees and contractors, including their specific requirements under this CCP.
All employees and contractors	• Ensure familiarity, implementation and compliance with this CCP. • Support ProTen's commitment to fostering good relationships with the surrounding community and additional stakeholders. • Work in a manner that minimises the potential for adverse impact on the surrounding community; • Report all complaints and environmental incidents to ProTen Regional Operations Manager without delay; and • Report any inappropriate construction, operational and/or environmental management practices to ProTen's Regional Operations Manager without delay.

2.3 Inductions and Training

ProTen's Regional Operations Manager will ensure that all employees and contractors involved in the construction and/or operation of the Development are suitable inducted and trained prior to commencing any work on site. Training in relation to community and stakeholder consultation and implementation of this CCP will take place initially through the site induction and then on an on-going basis through "toolbox talks" (or similar).

The topics to be covered during the induction and toolbox talks in relation to community and stakeholder consultation include:

- Appropriate behaviour when interacting with the local community and other stakeholders;
- The key messages when communication with the local community and other stakeholders, as listed in **Section 2.4**;
- Referring community contact to ProTen's Regional Operations Manager; and
- Appropriate response and management of complaints received from the public, regulatory authorities and/or other stakeholders in accordance with the Complaints Management Strategy in **Section 5**.

2.4 Key Messages

The following key messages will be the focus of communications with the community and other stakeholders:

- ProTen is a leading poultry broiler farm developer and operator and is 100% Australian-owned.
- ProTen is committed to open communications and fostering good relationships with the surrounding community and other stakeholders.
- ProTen is committed to current industry best practice environmental management and bird welfare.
- ProTen has committed to a suite of development design features and best practice environmental management and mitigation measures to be implemented during the construction and operational phases to avoid/minimise the potential for adverse impacts on the surrounding environment and community.
- The development consent and environmental protection licence impose strict requirements for environmental management and mitigation measures during the construction and operational phases to avoid/minimise the potential for adverse impacts on the surrounding environment and community.
- The Development will be a catalyst for significant and sustained economic activity within the local and regional economies through employment during both the construction and operational phases, significant expenditure on products and services, and additional flow-on benefits.

  The EIS and RTS should be referred to for a detailed description of the Development, predicted environmental, social and economic impacts, and the suite of environmental management and mitigation commitments.

3 IDENTIFIED STAKEHOLDERS

The stakeholders identified for consultation and engagement throughout the Development include:

- The local community, including surrounding residents and recreational facilities;
- Relevant local and State regulatory authorities;
- Registered Aboriginal Parties (RAPs); and
- Other interested stakeholders.

3.1 Local Community

As listed in **Table 5** and identified on **Figure 1**, the local community comprises a low density of privately-owned residences associated with the surrounding farming enterprises and various recreational facilities.

Table 5 Surrounding Residences and Recreational Facilities

Receptor	Location
Existing Surrounding Residences	
R1	Residence, Rushes Creek Road
R2	Residence, Rushes Creek Road
R3	Residence, Rushes Creek Road
R4	Residence, Rushes Creek Road
R5	Residence, Rushes Creek Road
R6	Residence, Rushes Creek Road
R7	Residence, Moys Lane
R8	Residence, Moys Lane
R9	Residence, Corella Road
R10	Residence, Corella Road
R11	Residence, Rushes Creek Road
R12	Residence, Rushes Creek Road
R13	Residence and small piggery, Rushes Creek Road
R14	Residence, Rushes Creek Road
R15	Residence, Ski Gardens Road
R18	Residence, Ski Gardens Road
R19	Residence, Moys Lane
R21	Residence, Rushes Creek Road
R22	Residence, Moys Lane
R23	Residence, Moys Lane
R24	Residence, Rushes Creek Road
R25	Residence, Rushes Creek Road
R26	Residence, Perrings Road
R27	Residence, Perrings Road
R28	Residence, Rushes Creek Road

Receptor	Location
R29	Residence, Boundary Road
R30	Residence, Boundary Road
R31	Residence, Glenbrook Road
R33	Residence, National Fitness Road
R34	Residence, Rushes Creek Road
R36	Residence, Glenbrook Road
Potential Future Surrounding Residences	
R16	Potential future residence, Rushes Creek Road
R35	Potential future residence, Bidford Access
Existing Surrounding Recreational Facilities	
R17	Manilla Fishing Club, Ski Gardens Road
R20	Manilla Ski Gardens Caravan Park, Ski Gardens Road
R32	Lake Keepit Sport and Recreation Centre, National Fitness Road
R37	Lake Keepit Soaring Club, Keepit Dam Road
R38	Reflections Lake Keepit Holiday Park, Keepit Dam Road

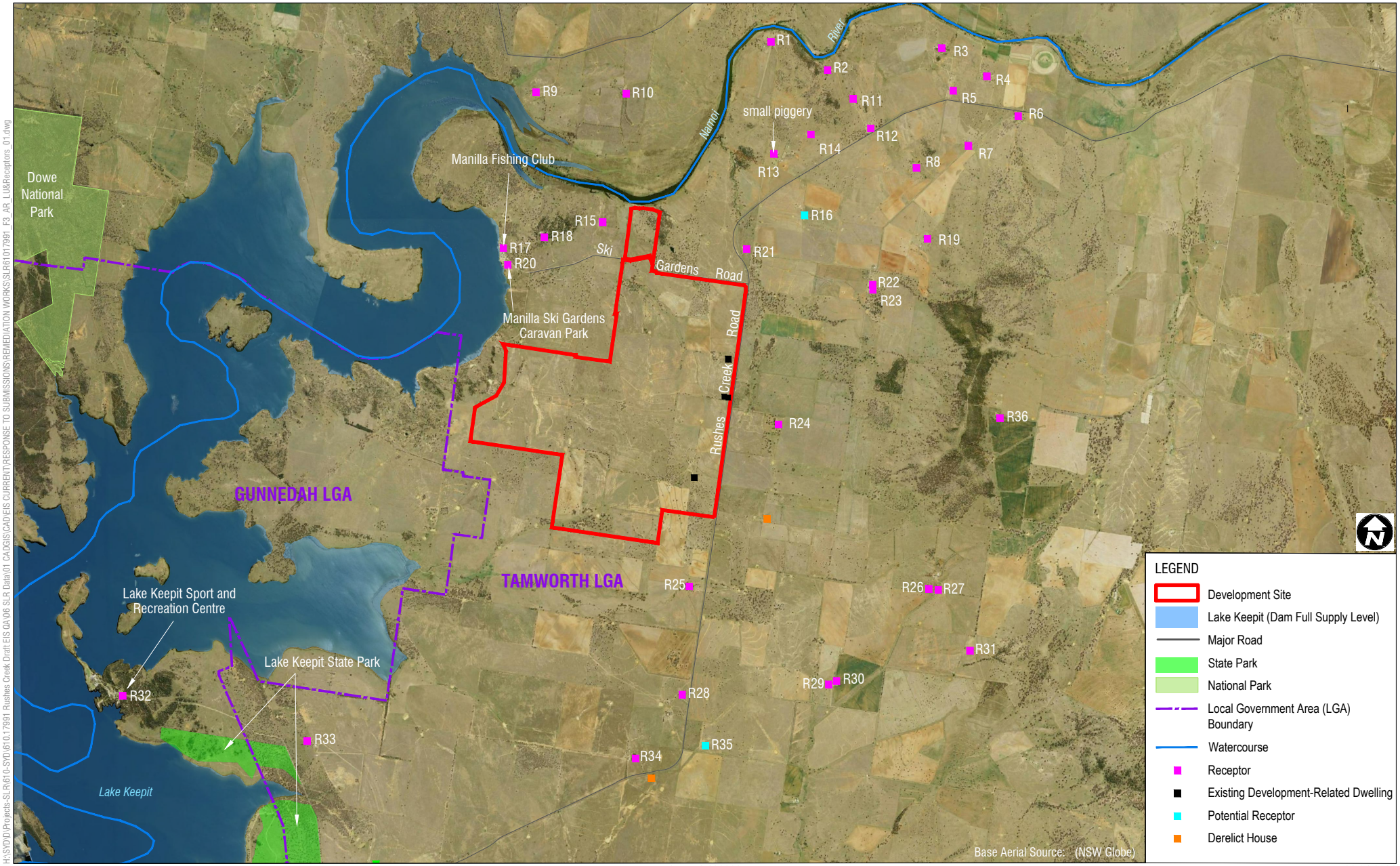
ProTen maintains a register of postal and/or letterbox drop contact details for these community stakeholders.

3.2 Regulatory Authorities

The regulatory authorities that have an interest in the construction phase and/or operational phase of the Development are:

- DPIE - Industry Assessment team, Compliance team and Biodiversity Conservation Division (BCD);
- Environment Protection Authority (EPA)
- Transport for NSW (TfNSW);
- Heritage NSW;
- Natural Resources Access Regulator (NRAR);
- WaterNSW;
- Department of Primary Industries (DPI);
- NSW Health / Hunter New England Local Health (HNELH);
- NSW Rural Fire Service (RFS);
- Fire and Rescues NSW (FRNSW);
- Tamworth Regional Council (Council);
- Gunnedah Shire Council; and
- SafeWork NSW.

Contact details for each of these authorities are provided in **Appendix A**.



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www.slrconsultingaustralia.com.au PH: 61 2 4037 3200

EME advisory

Surrounding Residences and Recreational Facilities

FIGURE 1

3.3 Registered Aboriginal Parties

The following 11 RAPs were identified in the approved *Aboriginal Cultural Heritage Management Plan* (OzArk Environment and Heritage 2021) for the Development:

- Tamworth Local Aboriginal Land Council;
- T&G Culture Consultants;
- Richard Slater;
- DFTV Enterprises;
- Gomery Cultural Consultant;
- Brian Draper;
- White Cockatoo Aboriginal Corporation;
- Gomeroi People NC2011/006, C/- NTSCORP;
- Natasha Rodgers;
- AT Gomilaroi Cultural Consultancy; and
- Veronica Talbott.

Contact details for each of these RAPS are provided in **Appendix B**.

3.4 Other Interested Stakeholders

The following other stakeholders have been identified as potentially having an interest in the Development:

- Tamworth Regional Residents and Ratepayers Associated Inc. (TRRRA);
- Animal Liberation;
- Reticulated service providers – Essential Energy, Telstra, NBN Co; and
- Local members of Parliament (MPs).

Contact details for each of these stakeholders are provided in **Appendix C**.

4 CONSULTATION IMPLEMENTATION

4.1 Stakeholder Key Areas of Interest

ProTen recognises the diverse interests and information needs of the community and additional stakeholders listed above in **Sections 3.1** to **3.4**. **Table 6** lists the identified stakeholders, key areas of interest and the key communication tools available to inform and engage with these stakeholders.

Table 6 Stakeholder Key Areas of Interest

Stakeholder	Key Areas of Interests	Key Communication Tools
Local community	• Regulatory compliance • All environmental and social aspects, including: - Odour - Dust - Traffic - Noise - Water resources - Waste management - Biosecurity, disease and mass mortality - Visual amenity - Weeds and pests - Biodiversity - Heritage (Aboriginal and non-Aboriginal) - Hazards and risk	• Development webpage • Community information sessions • Community newsletters • Site signage • Emails/phone calls • ProTen environmental hotline • Complaints management strategy • Compliance reports • Independent audits
DPIE - Industry Assessment and Compliance teams	• Regulatory compliance • All environmental and social aspects	• Development webpage • Emails/phone calls • Briefings/meetings • Commencement notifications • Compliance reports • Independent audits • Management plan revisions • Incident notifications • Non-compliance notifications
EPA	• Regulatory compliance • Odour • Dust • Noise • Water resources • Waste management • Biosecurity, disease and mass mortality • Hazards and risk • Contamination	• Development webpage • Emails/phone calls • Briefings/meetings • EPL Annual Returns • Independent audits • Management plan revisions • Odour monitoring reports • Incident notifications
TfNSW	Traffic and transport (predominately highway-related)	• Development webpage • Emails/phone calls • Management plan revisions
Heritage NSW	Heritage – Aboriginal and non-Aboriginal	• Development webpage • Emails/phone calls • Unexpected finds protocol • Management plan revisions

Stakeholder	Key Areas of Interests	Key Communication Tools
DPIE BCD	Biodiversity	• Development webpage • Emails/phone calls
NRAR WaterNSW	• Water licensing compliance • Water resources	• Development webpage • Water metering • Emails/phone calls • Management plan revisions • Groundwater monitoring reports
DPI	Biosecurity, disease and mass mortality	• Development webpage • Emails/phone calls • Management plan revisions
NSW Health / HNELH	• Odour • Dust • Potable/drinking water • Biosecurity, disease and mass mortality	• Development webpage • Emails/phone calls • Incident notifications
RFS FRNSW	Fire hazards and risk	• Development webpage • Emails/phone calls • Management plan revisions • Incident notifications
Tamworth Council Gunnedah Council	• Regulatory compliance • All environmental and social aspects	• Development webpage • Emails/phone calls • Briefings/meetings • Management plan revisions • Incident notifications
Safework NSW	Workplace health and safety	• Development webpage • Emails/phone calls • Incident notifications
RAPs	Aboriginal heritage	• Development webpage • Unexpected finds protocol • Management plan revisions
TRRRA	Water resources	• Development webpage • Community newsletters • Emails/phone calls
Animal Liberation	Bird health and welfare	• Development webpage • Emails/phone calls
Reticulated service providers	Electricity and telecommunications servicing	• Development webpage • Dial Before You Dig • Emails/phone calls
MPs	• Impacts on local constituents • Tamworth poultry industry	• Development webpage • Emails/phone calls • Briefings/meetings

4.2 Communication Tools

Table 7 provides an overview of the various communication tools available to inform and engage with the community and other stakeholders, including the target audience and frequency/timing.

Table 7 Communication Tools

Tool	Description	Primary Audience	Frequency / Timing
Development webpage	Dedicated webpage on ProTen's website (www.proten.com.au) where the information specified under consent condition C18 will be made publicly available, along with the community newsletters.	All stakeholders	On-going
Community information sessions	Information sessions to inform the local community about planned construction/operational works, key dates, staging and hours, and provide contact details for feedback, queries and/or complaints. These sessions will be held in a location readily accessible to the local community, such as one of the nearby recreational facilities, and will be attended by relevant ProTen personnel.	Local community	Two sessions: • Minimum 3 weeks prior to commencing the first stage of construction; and • Minimum 3 weeks prior to commencing the first stage of operation.
Community newsletters	Development updates in the form of newsletters to keep the local community informed and up-to-date with construction/operational progress, key dates, staging and hours, and provide contact details for feedback, queries and/or complaints. Community newsletter will be distributed by mail and/or letterbox drop, and will also be uploaded on the Development webpage.	• Local community • TRRRA • MPs	As required, but at a minimum: • Minimum 2 weeks prior to commencing each construction stage; and • Minimum 2 weeks prior to commencing each operational stage.
Site signage	Clearly visible signs adjacent to the construction/operational site accesses off Rushes Creek Road providing relevant site information and contact details.	Local community	• Prior to commencing the first stage of construction and maintained until all construction works are complete. • Prior to commencing the first stage of operation and maintained throughout the life of the Development.
Emails/phones	Consult and engage stakeholders as needed in relation to construction/operational works, management plans, non-compliances, incidents, complaints, monitoring, reporting, etc.	All stakeholders	As required
ProTen environmental hotline 1800 776 994	A toll-free number (listed on ProTen's website) where stakeholders can provide feedback and submit queries and/or complaints for follow-up.	Local community	On-going

Tool	Description	Primary Audience	Frequency / Timing
Complaints management strategy	System to ensure that all complaints regarding the construction or operation of the Development are promptly and effectively received, handled and addressed. See **Section 5**.	Local community	Upon receipt of a complaint
Commencement notifications	Notify the date of commencement of each of stage of construction and operation in accordance with consent conditions A9 and A10.	DPIE	A minimum of 1 month prior to commencing each stage of construction and operation
Compliance reports	Monitor and report on the compliance status of the Development in accordance with consent conditions C11 to C13 and the NSW Government's *Compliance Reporting, Post Approval Requirements* (2020a). Reports will be submitted to DPIE and uploaded on the Development webpage.	• DPIE • All stakeholders	• Pre-operation compliance report - single report - minimum 6 weeks prior to commencing operation. • Operation compliance reports - annually - at intervals no greater than 52 weeks from commencing operation.
Briefings/meetings	Consult and engage with regulatory authorities as needed in relation to construction/operational works, management plans, non-compliances, incidents, complaints, monitoring, reporting, etc.	Regulatory authorities	As required
Independent audits	Obtain an independent and objective assessment of the environmental performance and compliance status of the Development in accordance with consent conditions C14 to C16 and the NSW Government's *Independent Audit, Post Approval Requirements* (2020b). Audits reports will be submitted to DPIE and uploaded on the Development webpage.	• DPIE • All stakeholders	• Initial audit - within 26 weeks of commencing operation. • On-going audits - at intervals no greater than 3 years or as otherwise agreed by the Planning Secretary.
EPL Annual Returns	Report on the compliance status of the Development against the EPL conditions and provide a summary of monitoring and complaints data. Returns will be submitted to the EPA and uploaded to the EPA's public register.	• EPA • All stakeholders	Annually, within 60 days after the end of the 12 month EPL reporting period
Management plan revisions	Engage and seek feedback in relation to management plan reviews/revisions.	• Regulatory authorities • RAPs	As required
Odour monitoring reports	Report on the performance of the poultry sheds in relation to odour emissions in accordance with the *Air Quality Management Plan* under consent conditions B4 to B7	EPA	• Monitoring - minimum once per cycle for a minimum of 2 years during (a) 1 Feb to 30 May; and (b) 1 Sep to 30 Nov. • Results - submitted to the EPA within 2 weeks of each monitoring event.

Tool	Description	Primary Audience	Frequency / Timing
Groundwater monitoring reports	Report on the performance of the Development in relation to any groundwater impacts in accordance with the *Water Management Plan* under consent condition B22.	• NRAR • WaterNSW	TBC
Incident notifications	Notification and subsequent reporting of any incident that has caused or threatens to cause material harm to the environment in accordance with consent condition C9 and the *Protection of the Environment Operations Act 1997*.	• DPIE • EPA • NSW Health • SafeWork NSW • FRNSW	• Initial notification – immediately after becoming aware of the incident. • Written notification – within 7 days of becoming aware of the incident. • Incident report – within 30 days of the incident occurring or as otherwise agreed to by the Planning Secretary.
Non-compliance notifications	Notification of any non-compliance with the development consent	DPIE	Within 7 days of becoming aware of the non-compliance
Dial Before you Dig	Obtaining information from electricity and telecommunications asset owners to ensure planned land disturbance activities do not impact/disturb network infrastructure.	Service providers	As required prior to land disturbance activities

5 COMPLAINTS MANAGEMENT STRATEGY

5.1 Performance Objective

To ensure that all complaints throughout the construction and operational phases of the Development are promptly and effectively received, handled and addressed.

5.2 Responsibility

ProTen's Regional Operations Manager is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of a complaint.

All employees and contractors who take receipt of a complaint, either verbal or written, are to immediately notify ProTen's Regional Operations Management.

ProTen Regional Operations Manager - nominated "central contact person"	Julian Johnson	Ph: 0406 484 474 Email: julianj@proten.com.au

5.3 Contact Details for Complaints

Complaints in relation to the Development activities may be received via a number of ways, including:

- In writing - via PO Box 1746, North Sydney NSW 2059;
- Phone - via ProTen's toll-free environmental hotline 1800 776 994;
- Email - via headoffice@proten.com.au; or
- Through a regulatory authority (for example - EPA, Council).

The contact details for complaints will be advertised to the general public in the following ways:

Site Signage

Clearly visible signs will be erected adjacent to the construction/operational site accesses off Rushes Creek Road prior to commencing construction and operation. The signs will advise relevant site information and contact details for feedback, enquiries and complaints. These signs will remain throughout the construction and operational phases.

Local Newspaper

An advert will be published in the local newspaper prior to commencing construction and again prior to commencing operation to advise contact details for feedback, enquiries and complaints.

5.4 Handling Procedure

Upon becoming aware of a complaint, ProTen's Regional Operations Manager is to undertake the following:

Receive

In the normal course of events, the first contact for complaints will usually be made in person or by telephone. While this should instigate investigative action, a formal written complaint should be requested.

Where the initial contact reaches an employee or contractor who is not a representative of ProTen's management team, the call should be directed to ProTen's Regional Operations Manager. If unavailable, the complainant's details should be taken with a view to returning the contact once the Regional Operations Manager is available and in a position to discuss the matter.

The complainant's name, address and contact details, along with the nature of the complaint, must be requested. If the complainant refuses to supply the requested information, a note should be made on the form and complainant advised of same.

Assistance

Where assistance is required handling the situation, ProTen's SHEQ Advisor and/or Risk Manager should be contacted.

ProTen Safety, Health, Environment & Quality (SHEQ) Advisor	Kathryn Singh	Ph: 02 6962 1770 / 0434 550789 Email: kates@proten.com.au
ProTen Risk Manager	Jim Rimmer	Ph: 02 6962 1770 / 0438 750974 Email: jrimmer@proten.com.au

Where the complaint is reported via a regulatory authority (for example - EPA, Council), ProTen's CEO should be notified immediately.

Investigate

A field investigation should be initiated in an attempt to establish the legitimacy of the complaint and the cause of the problem. ProTen's site management should be consulted to identify any abnormality or incident that may have resulted in the complaint. Details may include heavy vehicle traffic, equipment and machinery activities during the construction phase, and bird ages and stocking densities, fan operations, internal shed conditions and heavy vehicle traffic during the operational phase.

If the complaint is due to an environmental incident, the Environmental Incident Management Strategy contained in the *Construction Environmental Management Plan* or the *Operational Environmental Management Plan* should be followed. If the incident has caused or threatens to cause material harm to the environment, the DPIE or other relevant regulatory authorities must be immediately notified and reports prepared in accordance with condition C9 of the development consent. See "incident notifications" in **Table 7** above.

If the complaint is in relation to odour or dust, meteorological conditions at and around the time of the complaint, particularly wind direction and speed, must be obtained from the on-site meteorological station.

Remedial Action

Once the legitimacy and cause of the complaint has been established, every possible effort must be made to undertake appropriate remedial action(s) to fix the cause of the complaint and mitigate any further impact.

Inform

The investigative work and remedial action should be reported back to the complainant and, if necessary, the relevant regulatory authorities.

Complaints Register

It is imperative that an honest assessment of the situation is carried out and documented. Every complaint received is to be recorded on ProTen's standard *Complaint Report Form* contained in **Appendix D** and a copy of the complete form is to be maintained in the Development's *Complaints Register* for a minimum of 4 years.

5.5 Preventative Action

Once the complaint has been suitably handled, appropriate preventative measures should be identified and implemented to negate the possibility of re-occurrence.

5.6 Dispute Resolution

If the complaints management strategy has been followed and a particular issue cannot be resolved, the complaint will be referred to ProTen's CEO for further review and the Planning Secretary will be notified. The escalated review process will include an assessment of the details of the complaint received, any findings of the investigation undertaken in response to the complaint, and any further matters raised by the complainant. It may also include ProTen's CEO seeking the advice of relevant regulatory authorities and/or specialist consultants.

If required, a third-party independent mediator may be engaged to help resolve the dispute.

6 CCP REVIEW AND UPDATE

ProTen will evaluate the performance and effectiveness of the communication tools in this CCP on a regular basis. Key elements of the evaluation will include reviewing whether the objectives of the CCP have been achieved as evidenced by:

- The availability, quality and distribution of information about the Development to the local community and stakeholders;
- The nature and number of enquires and complaints and the subsequent level of responsiveness and appropriateness of action taken by ProTen;
- The relationships between ProTen and the surrounding local community; and
- Feedback received on the value of information provided about the Development, attendance at the community information sessions, and responsiveness of ProTen to feedback, enquires and complaints.

This CCP will be reviewed and, if necessary, updated if the performance evaluation demonstrates that the objectives are not being adequately met and/or at the request of DPIE.

As listed in **Table 4**, ProTen's Regional Operations Manager has the authority to approve minor amendments to the CPP. For the purpose of this CPP a "minor" amendment is defined as:

- An amendment involving a minor error or misdescription;
- An amendment that maintains compliance with the EIS, RTS, Supplementary RTS and Development Consent SSD 7704;
- An amendment that is necessary to maintain consistency and/or compliance with changing legislative requirements (for example, an amendment to an Act);
- An amendment to the ProTen contact details listed in **Tables 2** and **3** when roles change;
- An amendment to the ProTen roles and responsibilities listed in **Table 4** that does not involve deleting any responsibilities; and
- An amendment to the stakeholder contact details in **Appendices A** to **C** when roles change.

All employees and contractors will be informed of any updates to the CCP during a toolbox talk.

7 REFERENCES

EME Advisory (2019a) *Rushes Creek Poultry Production Farm, SSD 7704, Response to Submissions*

EME Advisory (2019b) *Rushes Creek Poultry Production Farm, SSD 7704, Supplementary Response to Submissions*

NSW Government (2020a) *Compliance Reporting, Post Approval Requirements*

NSW Government (2020b) *Independent Audit, Post Approval Requirements*

SLR Consulting Australia (2018) *Environmental Impact Statement, Intensive Livestock Agriculture, Rushes Creek Poultry Production Farm, SSD 7704*

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Community Consultation Plan

Appendix A

Contact Details - Regulatory Authorities

Rushes Creek Poultry Production Farm, SSD 7704

Community Consultation Plan

Contact Details – Regulatory Authorities

Regulatory Authority	Contact Details
Department of Planning Industry and Environment (DPIE)	
Industry Assessments	Sally Munk (Principal Planning Officer) Locked Bag 5022, Parramatta NSW 2124 Ph: 02 9274 6431 Email: sally.munk@planning.nsw.gov.au / information@planning.nsw.gov.au
Compliance	Locked Bag 5022, Parramatta NSW 2124 Email: compliance@planning.nsw.gov.au
Biodiversity Conservation Division (BCD) – North West Office	Liz Mazzer (Conservation Planning Officer) PO Box 2111, Dubbo NSW 2830 Ph: 02 6883 5330 Email: liz.mazzer@environment.nsw.gov.au / info@environment.nsw.gov.au
Environment Protection Authority (EPA)	
Armidale Regional Officer	Rebecca Scrivener (Head, Regional Operations Unit) PO Box 494, Armidale NSW 2350 Ph: 02 6773 7000 Email: Rebecca.Scrivener@epa.nsw.gov.au Email: info@epa.nsw.gov.au
Environment Line	Ph: 131 555 for pollution and environmental incidents Ph: 02 9995 5555 for other enquiries Email: info@epa.nsw.gov.au
Transport for NSW (TfNSW)	
Northern Region Development Services	Leisa Sedger (Development Assessment Officer) PO Box 576, Grafton NSW 2460 Ph: 02 6640 1362 Email: development.northern@transport.nsw.gov.au
NSW Heritage	
Aboriginal Cultural Heritage Regulation	Locked Bag 5020, Parramatta NSW 2124 Ph: 9876 8500 Email: heritagemailbox@environment.nsw.gov.au
Natural Resources Access Regulator (NRAR)	
Water Regulation	Tim Baker (Senior Water Regulation Officer) Locked Bag 5123 Parramatta NSW 2124 Ph: 1800 353 104 Email: tim.baker@dpie.nsw.gov.au / nrar.servicedesk@dpie.nsw.gov.au Email: water.enquiries@dpie.nsw.gov.au

WaterNSW	
Water Regulation	David Thomas (Water Regulation Officer) 33-35 Gunnedah Road, Tamworth NSW 2340 Ph: 02 6763 3903 / 1300 662 077 Email: david.thomas@waternsw.com.au Email: customer.helpdesk@waternsw.com.au
Department of Primary Industries (DPI)	
Agriculture	Byron Stein (Development Officer, Intensive Livestock) Locked Bag 21, Orange NSW 2800 Ph: 02 4824 3734 Email: byron.stein@dpi.nsw.gov.au Email: nsw.agriculture@dpi.nsw.gov.au
Biosecurity	Ph: 1800 680 244 Email: quarantine@dpi.nsw.gov.au
Emergency Animal Disease Hotline	Ph: 1800 084 881 Email: biosecurity@dpi.nsw.gov.au
NSW Health / Hunter New England Local Health (HNELH)	
Population Health	Locked Bag 10, Wallsend NSW 2287 Ph: 02 4924 6477 / 02 6764 8000 Email: phenquiries@hnehealth.nsw.gov.au
NSW Rural Fire Service (RFS)	
Headquarters	Locked Bag 17, Granville NSW 2142 Ph: 02 8741 5555 Ph: 1800 679 737 bushfire information line Email: records@rfs.nsw.gov.au
Tamworth office	PO Box 7131, New England MSC 2348 Ph: 02 6762 7641
Fire and Rescue NSW (FRNSW)	
Infrastructure Liaison Unit Fire Safety Branch	Locked Bag 12, Greenacre NSW 2190 Ph: 02 9742 7434 Email: firesafety@fire.nsw.gov.au
Tamworth Regional Council	
Development Planning and Compliance	Mitch Gillogly (Team Leader, Development Assessment) PO Box 555, Tamworth NSW 2340 Ph: 02 6767 5462 / 02 6767 5555 Email: m.gillogly@tamworth.nsw.gov.au / trc@tamworth.nsw.gov.au
Gunnedah Shire Council	
Planning and Environmental Services	PO Box 63, Gunnedah NSW 2380 Ph: 02 6740 2100 Email: council@infogunnedah.com.au

SafeWork NSW	
SafeWorkNSW	Locked Bag 2906, Lisarow NSW 2252 Ph: 13 10 50

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Community Consultation Plan

Appendix B

Contact Details - Registered Aboriginal Parties

Rushes Creek Poultry Production Farm, SSD 7704

Community Consultation Plan

Contact Details – Registered Aboriginal Parties (RAPs)

RAP	Contact Details
Tamworth Local Aboriginal Lands Council (LALC)	PO Box 57, Tamworth NSW 2340 Ph: 02 6766 9028 Email: admin@tamworthlalc.com.au
T&G Culture Consultants	Tony Griffiths 4 Wattle Street, Gunnedah NSW 2380 Ph: 0403 035 398
Richard Slater	121 Roberts Street, Tamworth NSW 2304 Ph: 0474 665036 Email: richard.slater@hotmail.com
DFTV Enterprises	Derrick Vale 5 Mountbatten Close, Rutherford NSW 2320 Email: deckavale@hotmail.com
Gomery Cultural Consultants	David Horton 10 Scott Street, Muswellbrook NSW 2333 Ph: 0458 532707 Email: davehorton@hotmail.com.au
Brian Draper	Unit 2, 135 Bloomfield Street, Gunnedah NSW 2380 Ph: 0438 757562 Email: briandraper0013@gmail.com
White Cockatoo Aboriginal Corporation	Michael Long 17 Albion Street, Gunnedah NSW 2380 Ph: 0447 867745 Email: whitecockatoo1@hotmail.com
Gomeroi People NC2011/006 C/- NTSCORP	NTSCORP c/- James MacLeod, Level 1, 44-70 Rosehill Street, Redfern NSW 2016 Ph: 02 9310 3188 Email: jmacLeod@ntscorp.com.au Email: mparker@ntscorp.com.au Email: information@ntscorp.com.au
Natasha Rodgers	7 Toy Court, Wodonga VIC 3690 Ph: 0432 535904 Email: natasharodgers06@gmail.com
AT Gomilaroi Cultural Consultancy	C/- Aaron Talbott 13 Hunter Street, Gunnedah NSW 2380 Ph: 0457 601685 Email: aaron@atgomilaroi.onmicrosoft.com
Veronica Talbott	12 Creek Reserve Road, Boolaroo NSW 2284 Ph: 0413 131983 Email: nanagoanna@yahoo.com.au

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Community Consultation Plan

Appendix C

Contact Details – Other Stakeholders

Rushes Creek Poultry Production Farm, SSD 7704

Community Consultation Plan

Contact Details – Other Stakeholders

Stakeholder	Contact Details
Tamworth Regional Residents and Ratepayers Associated Inc. (TRRRA)	PO Box 1953, Tamworth NSW 2340 Web enquiry: https://trrra.org.au/contact-trrra/
Animal Liberation	301/49 York Street, Sydney NSW 2000 Email: sydneyhq@animal-lib.org.au
Essential Energy	PO Box 5730, Port Macquarie NSW 2444 Ph: 6773 4741 Email: planning.nth@essentialenergy.com.au
Dial Before you Dig	Ph: 9648 1100 (Help Desk) Email: admin@beforeyoudignsw.com.au Web enquiry: www.1100.com.au
Hon. Kevin Anderson MP Member for Tamworth Minister for Better Regulation and Innovation	Ground Floor, 13 Fitzroy Street, Tamworth NSW 2340 Ph: 02 6766 1422 Email: tamworth@parliament.nsw.gov.au
Hon. Adam Marshall MP Minister for Agriculture and Western NSW	Suite 1, Ground Floor, 175 Rusden Street, Armidale NSW 2350 Ph: 6772 5552 Email: northerntablelands@parliament.nsw.gov.au
Hon. John Barilaro MP Minister for Regional NSW, Industry and Trade	GPO Box 5341, Sydney NSW 2001 Ph: 02 8574 5150 Email: monaro@parliament.nsw.gov.au
Hon. Melinda Pavey MP Minister for Water, Property and Housing	GPO Boxc 5341, Sydney NSW 200 Ph: 02 8574 7300 Email: oxley@parliament.nsw.gov.au

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Community Consultation Plan

Appendix D

Complaint Report Form

Rushes Creek Poultry Production Farm

COMPLAINT REPORT FORM

Person Who Received the Complaint

Name: …… Position: ……

Date: …… Time: …… am/pm

Site Management notified: Yes / No (if no, provide reason)

Person Who Made the Complaint

Name: ……

Address: ……

Contact Details: ……

Complaint Details (when and what was the complaint in relation to?)

Date: …… Time (approx.): …… am/pm

Description: ……

……

……

……

……

Field Investigation

Field investigation undertaken: Yes / No (if no, provide reason)

Description: ……

……

……

……

……

Is the complaint in relation to an environmental incident: Yes / No

If yes, follow the Environmental Incident Management Strategy - see CEMP / OEMP.

Remedial Actions

Remedial action undertaken: Yes / No (if no, provide reason)

Description: ……

……

……

……

……

Any further correction action required: Yes / No

Description: ……

……

……

……

……

Complainant Informed

Complainant informed of findings and outcomes: Yes / No (if no, provide reason)

Via: Phone / Email / Letter / In person

Staff Name: …… Position: ……

Date: …… Time: …… am/pm

Sign Off

Name: …… Position: ……

Signature: …… Date: ……

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix D

Revised Remediation Action Plan

REVISED REMEDIAL ACTION PLAN

Proposed Poultry Production Farm
Rushes Creek Road, Rushes Creek, NSW

Prepared for:

ProTen Tamworth Pty Ltd
PO Box 1746
North Sydney, NSW 2060

SLR Ref: 610.30237.00000-R01
Version No: -v2.1
April 2021

PREPARED BY

SLR Consulting Australia Pty Ltd
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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ProTen Tamworth Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30237.00000-R01-v2.1	22 April 2021	Jason Roesler	James Elliot	Hugh Selby
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EXECUTIVE SUMMARY

SLR Consulting Pty Ltd (SLR) was engaged by ProTen Tamworth Pty Limited (ProTen) to review and revise the Remedial Action Plan (RAP) previously approved for the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site). The proposed remedial area within the site is currently vacant and is located beside an old abandoned sheep holding shed. The remedial area covers approximately 700 m^2, occupying a small portion of Lot 165 of Deposited Plan (DP) 752169.

Development on the site is proposed to include four individual poultry farms, eight new residential houses, and various other support/servicing infrastructure items. This development was granted Development Consent SSD 7704 by the Department of Planning Industry and Environment (DPIE) (as delegate for the Minister) on 16 April 2020.

This revised RAP has been developed based upon data acquired and recommendations made in SLR's Detailed Site Investigation (DSI) prepared for the site which identified arsenic contamination above applicable human health screening/investigation levels adjacent to a former sheep dip, along with further consideration and consultation with the Environment Protection Authority (EPA) regarding an alternative preferred remediation approach to what was originally proposed and approved.

The primary remedial goal for this site is to remediate the identified arsenic impacted soil to a level that does not present an unacceptable human health exposure risk and to render the site suitable for the proposed land use. Therefore, the key objectives of the revised RAP are to effectively remediate arsenic impacted soil to HIL-A (ie. standard residential with garden/accessible soil) and to ensure remedial works will generally comply with the NSW EPA 2017 *Guidelines for the NSW Site Auditor Scheme*.

Following a review of feasible remedial options for the site and the agreement with the client, the alternative preferred remedial strategy is to cap and contain the arsenic contaminated soil.

Based on a statistical analysis of analytical results from the DSI (SLR 2019), it is estimated that an area of approximately 700m^2 will require capping to attain the remedial objective.

Based on the information available in the contamination assessment reports, SLR considers that soils on the site can be made suitable for the proposed land use, subject to implementation of the measures outlined in this revised RAP.

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1 Introduction

SLR Consulting Pty Ltd (SLR) was engaged by ProTen Tamworth Pty Limited (ProTen) to review and revise the Remedial Action Plan (RAP) previously approved for soil impacted by arsenic near a former sheep dip at the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site). The Rushes creek Poultry Production Farm was granted Development Consent SSD 7704 by the Department of Planning Industry and Environment (DPIE) (as delegate for the Minister) on 16 April 2020.

The site is bounded by Rushes Creek Road to the east and Ski Gardens Road to the north. The site locality and site layout have been identified in **Figure 1** and **Figure 2** in **Appendix A** respectively. Photographs of the area and material assessed have been presented in **Appendix B**.

2 Background

SLR understands the following with respect to the proposed development approved under SSD 7704:

- The development site is comprised of 14 registered freehold lots (or part lots) and one section of unformed Council public road
- Development on the site is proposed to include:
  - Four individual poultry farms, each comprising between 10 and 18 poultry sheds (total of 54 poultry sheds) and associated support/servicing infrastructure
  - Various other support/servicing infrastructure items.

Environmental assessments were undertaken to support the proposed development, with a preliminary site investigation (PSI) and a detailed site investigation (DSI) undertaken by SLR in 2018 and 2019 respectively.

2.1 Previous Investigations

2.1.1 Preliminary Site Investigation

The PSI undertaken by SLR titled '*Stage 1 Preliminary Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek*' dated July 2018 (SLR 2018) concluded that:

- An area of environmental concern (AEC) was identified for the site (former sheep dip)
- Further investigation works are required.

Following exhibition of the Environmental Impact Statement (EIS), the Department of Planning, Industry and Environment (now DPIE) and the Environment Protection Authority (EPA) requested that a DSI be undertaken to assess the identified AEC prior to determination of the Development Application (DA).

2.1.2 Detailed Site Investigation

The DSI undertaken by SLR titled '*Detailed Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek NSW*' dated February 2019 (SLR 2019) concluded the following

- Analytical results indicate that arsenic in soil, likely to be associated with the former sheep dip, is elevated above the relevant soil health investigation level (HIL) for standard residential with garden/accessible soil (HIL-A) guideline value in the National Environmental Protection Council's *National Environmental Protection (Assessment of Site Contamination) Measure*, as amended in 2013 (NEPM 2013)
- Soil sampling undertaken as part of the DSI has delineated the arsenic contamination to the north and south of the sheep dip, with low concentrations still exceeding the HIL-A guideline extending beyond the limit of the assessment to the east (assessment limited by the site shed) and to the west (with concentrations not expected to extend more than 10 metres west given the reducing concentrations from the source)
- Based on the guidance provided in NEPM 2013, SLR considers that the arsenic in soils contamination at the site presents an unacceptable risk to present and future site users, particularly during the proposed site redevelopment. Therefore, the arsenic identified in soils at the site is considered to warrant remedial action.

A groundwater assessment was not undertaken as part of the DSI due to the limited leaching potential of the identified arsenic (confirmed with toxicity characteristic leaching procedure analysis), the observed reduction in arsenic concentrations in soil with depth, and the anticipated depth of groundwater.

2.1.3 Remedial Action Plan

A RAP titled *Remedial Action Plan Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek, NSW* (SLR 2019) was prepared and approved as part of the development consent for the poultry farm. The remedial strategy detailed in the 2019 RAP was to excavate the arsenic contaminated soil and dispose of this material off-site at a facility licensed to receive the waste.

It has since been identified that the landfill at Kemps Creek on the western fringes of Sydney is the only landfill licensed in NSW to take the contaminated soil. Contractor pricing for the transport and disposal of the arsenic contaminated soil at Kemps Creek is not feasible. As such, an alternative remediation approach is now proposed in this revised RAP.

3 Objectives

This revised RAP has been developed to:

- Propose an alternative preferred remediation approach for the arsenic impacted soils to what was detailed and approved in the 2019 RAP, and
- Guide the management of the arsenic impacted soil in the area of the former sheep dip a manner that mitigates potential human health risks that may arise from the proposed poultry farm development.

The revised RAP has been prepared to ensure the remediation is undertaken in accordance with applicable legislation, codes of practice and guidelines, and ensure that the site is considered suitable for the proposed use.

Specifically, the key remediation objectives are as follows:

- To effectively remediate arsenic in soil contamination present at the site, allowing the site to be utilised for its proposed land use

- To ensure remedial works are undertaken in a manner that:
  - Is safe, with remediation works to be protective of human health and the environment
  - Prevents potential cross contamination with the implementation of appropriate controls
  - Adheres to applicable legislative requirements, including but not exclusively, the contaminated land planning guidelines and any guidelines in force under the *Contaminated Land Management Act* 1997
- To ensure that remediation documentation is kept to a standard that will generally comply with the NSW EPA *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (2020)

4 Scope of Works

SLR undertook the following scope of work to address the project objectives:

- Review of available contamination related information pertaining to the remedial area
- Appraisal of applicable remediation options, in consideration of factors such as, but not limited to, costs, timing, and impact on proposed development work and the potential impact on the value of the development
- Identification of the preferred alternative remediation option
- Consideration of the steps and processes to be followed, to successfully implement the preferred alternative remediation option
- Identification of the validation requirements for the preferred alternative remediation option, to demonstrate that the remediation works have been conducted satisfactorily
- Preparation of this revised RAP.

5 Consultation

The following consultation activities have been undertaken by ProTen:

- **EPA** - the possibility of an alternative remediation approach comprising containment of the arsenic impacted soils on-site either in-situ or in a containment cell was raised with the EPA (Armidale office) in March 2021. The EPA verbally indicated that it would be happy to consider a revised RAP with on-site containment instead of off-site disposal. The EPA also indicated that there shouldn't be any reason that remediation works should hold up commencing construction given the arsenic impacted soil is not within the development disturbance footprint and is not considered high-risk.
- **DPIE** - the possibility of an alternative remediation approach comprising containment of the arsenic impacted soils on-site either in-situ or in a containment cell was raised with DPIE in March 2021. This engagement also queried the need for a modification to the development consent in relation to a revised RAP, with DPIE recommending ProTen to seek a modification to amend the previously approved 2019 RAP.

- **EPA** and **Council** - a copy of this revised RAP was forwarded via email to the Armidale EPA office and Tamworth Regional Council on 23 April 2021 for review and comment ahead of submitting the development modification application to DPIE.

6 Site Identification

The site locality and proposed remedial area have been identified in **Figure 1** and **Figure 2**, in **Appendix A** respectively.

The larger development site comprises the following land parcels:

- Lot 1 in DP 44215
- Part Lot 1 in DP 1108119
- Lot 1 in DP 1132298
- Lots 26, 85, 86, 101, 118, 165, 166 and 171 in DP 752169
- Part Lot 143 in DP 752189
- Lot 1 in DP 1132078
- Lot 1 in DP 1141148
- A section of unformed Council public road traversing through Lot 171 DP 752169.

The development site is irregular in shape and occupies an area of approximately 1,016 hectares. The remedial area is an unsealed area of the site at and adjacent to the former sheep dip, located beside an old abandoned sheep holding shed. The remedial area covers approximately 700 m^2, occupying a small portion of Lot 165 of Deposited Plan (DP) 752169.

6.1 Regional Geology

The NSW Government *Manilla 1: 100,000 Geological Sheet 9036*, First edition, 2013, indicates that the site is likely to be underlain primarily by Upper Devonian Mandowa Mudstone, comprising thinly bedded laminated and massive mudstone with subordinate, thin siltstone and fine-grained sandstone beds.

6.2 Site Lithology

The generalised lithology encountered at the site during the DSI (SLR 2019) can be described as:

- Topsoil: Dark brown loam topsoil was generally encountered from surface to approximately 0.1m in depth. The topsoil was generally described to be soft, dry, with low plasticity, and with vegetation present at the surface
- Silty Clay: From depths of 0.1m to 0.7m, silty clay soil was present and can be generally described as brown to reddish brown, soft, dry, with low plasticity, with presence of angular to sub-angular shale (10-30mm) at lower depths (0.5-0.7m)

- Shale: From depths of 0.6m to 1.3m is the presence of angular to sub-angular shale (20-50mm). It is noted that excavator refusal was typically encountered at depths of 0.9m to 1.3m due to very stiff shale.

Details of the lithology encountered during the DSI (SLR 2019) have been presented in logs and included in **Appendix C**.

6.3 Hydrogeology

The nearest significant surface water features to the remedial area are:

- Rushes Creek, located approximately 614m to the east
- Namoi River, located approximately 3.7km to the west and 2.3km to the north
- Lake Keepit, located approximately 3.1km to the west (dam full supply level).

A search of the NSW Government's online groundwater works database as part of the DSI (SLR 2019) identified five registered groundwater bores within 1000m of the former sheep dip location. The groundwater bore search information has been summarised in the table below.

Table 6-1 Groundwater bores within 1000m of the proposed remediation area

Approximate distance from site	Direction from site	Borehole Number	Latitude / Longitude	Authorised/Intended Purpose	Final Depth	Salinity	Standing Water Level
95m	SE	GW967889	-30.814734 150.598204	Stock, Domestic	67m	-	14m
175m	E	GW011498	-30.813981 150.599741	Not Known	24.4m	-	-
700m	NW	GW967028	-30.809817 150.592187	Stock	55m	-	17.3m
790m	NE	GW009093	-30.81037 150.605018	Not Known	8.5m	Brackish	-
790m	NE	GW038206	-30.81037 150.605018	Not Known	12.8m	-	-

Groundwater was not assessed during previous investigations due to the limited leaching potential of the identified arsenic (confirmed with Toxicity Characteristic Leaching Procedure analysis), the observed reduction in concentration within a shallow depth, the clay rich soils and the anticipated depth of groundwater. Further discussion on why the arsenic impacted soils do not pose a risk to groundwater are provided in **Section 7.3**.

6.4 Topography

A review of the overall development site's topography conducted using Google Earth topographical data suggests that the site is relatively flat, ranging between around 325 m Australian Height Datum (AHD) and 410m AHD, with typical grades of 2% (2m in every 100m). The proposed remediation area has an elevation of approximately 373-374m AHD.

6.5 Acid Sulfate Soils

A review of the Australia Soil Resource Information System (ASRIS) indicated that there was no known occurrence of acid sulfate soils at or within the immediate vicinity of the proposed remediation area.

7 Revised Remedial Action Plan

7.1 Remedial Goal

The primary remedial goal for this site is to reduce the risk posed to human and environmental receptors in the proposed development from the identified arsenic impacted soil.

Given the proposed development includes residential housing (considered to be low density), the criteria applied to the remediation would be the National Environmental Protection Council's *National Environmental Protection (Assessment of Site Contamination) Measure*, as amended in 2013 (NEPM 2013) 'Schedule B1 – *Guideline on Investigation Levels for Soil and Groundwater*'. The NEPM 2013 guidelines provide a framework for the use of investigation and screening levels based on human health and ecological risks.

The soil health investigation levels (HILs) detailed in the NEPM (2013) are scientifically based, generic assessment criteria designed to be used in the initial screening of data for assessment of potential risks to human health from chronic exposure to contaminants. The following HILs are referenced in the NEPM (2013) guidelines:

- HIL-A includes standard residential with garden/accessible soil
- HIL-B includes residential with minimal opportunities for soil access, includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats
- HIL-C includes developed open space such as parks, playground, playing fields (e.g. ovals), secondary schools and footpaths and
- HIL-D includes commercial/industrial premises such as shops, offices, factories and industrial sites.

In consideration of the site's proposed land use, the remedial action criteria (RAC) has been selected based upon a residential (HIL-A) land use, which is considered to be the most conservative approach.

Soils exceeding the adopted RAC will require to be remediated and/or managed.

7.2 Extent of Remediation Required

Remedial works are required for the arsenic impacted soil material within the vicinity of the former sheep dip.

The lateral extent of elevated arsenic detected during the DSI (SLR 2019) has been presented in the following of **Appendix A**:

- **Figure 3** (upper portion of the remedial area 0.1-0.2 metres below ground level [mbgl]),
- **Figure 4** (intermediate portion of the remedial area 0.6-0.8 mbgl) and;
- **Figure 5** (deep portion of the remedial area 0.9-1.3 mbgl) with the extent presented based on exceedance of the adopted HIL-A guideline value of 100 mg/kg.

The maximum depth of elevated arsenic contamination detected during the DSI (SLR 2019) was at 1.2 mbgl, which was the depth of practical refusal (on weathered shale) with the small excavator utilised. Noting that concentrations of arsenic decreased with depth.

The extent of shallow arsenic contamination may also extend beneath the former sheep holding shed located immediately to the east of the former sheep dip site.

7.3 Risk to Underlying Groundwater

The nearest groundwater extraction bore is located approximately 95m southeast of the remediation area. The bore which was drilled to approximately 65 mbgl, had a water bearing zone logged at 14mbgl, however, no extraction from this depth was noted.

Bore drill logs for the site indicate the presence of weathered regolith (saprolite) recorded as clay lithology. This layer, where logged, is between 0.5 and 3 m thick approximately 2 m below the surface layer restricting downward migration of water into the groundwater system, immediately above competent basement rocks.

Numerous groundwater bore installations are proposed as part of the site development for extraction purposes. It is noted that the nearest purposed groundwater bore is approximately 800m north-west of the site, having an approximate constructed depth of approximately 180mbgl with uppermost 50m containing cement grout to prevent overlying aquifer intrusion.

The closest downgradient surface water body is 3.1 km to the west of the site and is unlikely to impacted by contamination contained on-site.

Mobilisation of the arsenic contamination is considered to be low, as analysis results included in the DSI indicated low leachability of the arsenic impacted soils. Arsenic leachability analysis indicated a mean of 0.57 mg/L and a maximum value of 4.80 mg/L, which is lower than the NSW EPA 2014 General Solid Waste TCLP1 (leached) criteria (5.0mg/L).

Additionally, SLR referred to the US EPA (EPA 2009) regulatory threshold for the toxicity characteristic of leachable arsenic of 5.00 mg/L. The leachability of arsenic is below 5.00 mg/L (as measured by the toxicity characteristic leaching procedure [TCLP]), which is a common treatment goal for soil and waste in accordance with Resource Conservation and Recovery Act (RCRA, 1976).

Given the low leachability of the arsenic impacted soil, the depth to groundwater, the distance to the nearest surface water body, the risk to groundwater from the arsenic impacted soil is considered to be low.

7.4 Remedial Options

A number of remedial options were considered for the arsenic contaminated soils at the site. In consideration of the proposed land use and fiscal viability, the remedial options outlined in the following options are considered appropriate to remediate the site.

7.4.1 Excavation and Off-Site Disposal

Off-site disposal to an appropriately licensed landfill facility was originally proposed and approved as part of the 2019 RAP to remediate the site. It has since been identified that the landfill at Kemps Creek on the western fringes of Sydney is the only landfill licensed in NSW to take the contaminated soil. Based on contractor pricing for the transport and disposal of the arsenic contaminated soil at Kemps Creek, this option is now the least fiscally viable due to the sites' remote location and the distance to Kemps Creek. The waste hierarchy, which underpins the objectives of the Waste Avoidance and Resource Recovery Act 2001, also promotes the diversion of waste from landfill disposal, therefore making disposal to landfill less preferable.

7.4.2 On-Site Management – Cap and Contain

Arsenic contaminated soil identified at the site could be managed using a cap and contain methodology, with the construction of a suitable barrier to reduce the likelihood of exposure of potential receptors to the underlying arsenic impacted soil. To achieve this remedial option, an adequately sized containment cap would need to be constructed at the site. Ongoing management of the cap, via an Environmental Management Plan (EMP), would be required.

The containment cap would provide a barrier between the impacted soil and site users. The cap would include a low permeability cover layer to reduce surface water infiltration, thus minimising the potential for arsenic to leach from the soils, providing additional protection to groundwater. However, given the low risk to groundwater (refer **Section 7.3**), groundwater protection is not the driver for remediation.

The onsite management option would include the creation of an exclusion perimeter with appropriate signage to further reduce the likelihood of exposure of potential receptors.

Additionally, mechanisms to prevent development and disturbance in the future would be required, such as identification/registration of the area on the following:

- The site's Section 10.7 council planning certificate
- Certificate of title
- Planning authority tools such as Council's GIS
- Dial Before You Dig and
- Other relevant planning/environmental databases.

A cap and contain methodology is considered to be the preferred remedial option based on human and ecological health risk potential, fiscal viability and the long-term site use.

7.5 Remedial Strategy

Based on the discussions with the client, consultation with the EPA, the risks posed to potential receptors including humans at the site and groundwater, and in consideration of the proposed development, the preferred alternative remedial strategy is on-site containment of arsenic contaminated soil.

8 Remedial Sequence of Works

8.1 Preparatory Works

8.1.1 Approvals and Notifications

The remediation of soil impacted with arsenic is considered Category 2 remediation works.

As outlined in the *State Environment Planning Policy No 55 – Remediation of Land*, where Category 2 remediation work is proposed to be carried out on any land, notice of the proposed work must be issued to the council for the local government area in which the land is situated.

The notice must be given at least 30 days before the commencement of the work and must include the following:

- be in writing, and provide the name, address and telephone number of the person who has the duty of ensuring that the notice is given
- briefly describe the remediation work
- show why the person considers that the work is Category 2 remediation work
- specify, by reference to its property description and street address (if any), the land on which the work is to be carried out
- provide a map of the location of the land and
- provide estimates of the dates for the commencement and completion of the work.

A notice of completion of remediation work on any land must be given to the council for the local government area in which the land is situated within 30 days after the completion of the work. A validation report, detailing the works undertaken will also be issued to the council within 30 days of completion of remediation work. Details to be included in the validation report have been outlined in **Section 8**.

8.1.2 Site Establishment

The remediation contractor will mobilise plant and equipment appropriate to the nature and extent of the project.

Site establishment will include the setup of remediation works zones with appropriate fencing, barriers and signage to delineate the zone from other work areas and set up and implementation of the environmental controls specified in this RAP.

8.1.3 Underground and Overhead Services

All services on the site will be required to be identified prior to remediation works and terminated or re-directed if required.

8.1.4 Demolition and Removal of Sheep Holding Shed

The demolition and removal of the existing sheep holding shed within the remedial area indicated on **Figure 6** in **Appendix A** is required to enable delineation of contamination within the shed area to determine extent of capping.

8.1.5 Delineation of Capping

The extent of the remedial area will be guided by laboratory analysis of delineation samples subsequent to demolition and removal of the sheep holding sheep. Samples are to be collected from near surface (0.0-0.1 mbgl) extending from west from TP15 (2 samples) and east from TP 17 (3 samples) as indicated in **Figure 6** in **Appendix A**. The remediation capping will be extended as required until the selected validation criteria are satisfied.

8.1.6 Site Surveying

Site survey is required to be conducted prior to the commencement of capping works to establish the base level and to mark out the extents of the cap. The base level survey would be used to determine the elevations and extents of each layer for use by the contractor.

Survey would also be required upon completion of each capping layer to validate the capping layers have achieved the desired thickness, grade and extent. The survey would need to show thickness of each layer perpendicular to the slope and take readings at a maximum of 10 m centres.

8.2 Remedial Works

A summary of the layers and stages included in the cap is provided in the following.

8.2.1 Vegetation removal

Prior to the placement of any material for the cap, vegetation in the remedial area needs to be removed to the extent practical without disturbing the impacted soil. This will include:

- mowing the area as close to ground level as possible and
- covering area with weed matting.

8.2.2 Capping Construction

The remedial area should be capped in accordance with **Figure 7** of **Appendix A**. Layers of the capping are summarised in **Table 8-1** and outlined in the sections below. The cap should be a minimum of 5 % grade to enable surface water runoff, and a maximum of 20% grade to reduce the likelihood of erosion.

Table 8-1 Remedial Area Capping Summary (from bottom to top)

Capping Layer No.	Description
Layer 1 – Earthen Cover Layer	Typically, a clay rich layer of cover soil and minimum of 0.30 m thick. This layer thickness is proposed to be increased in thickness to achieve final design grades.
Layer 2 – Low Permeability Compacted Clay	Typically, onsite silty clays without boulders and minimum of 0.30 m thick.
Layer 3 - Upper Subsoil	Typically, a sandy clay sub-base minimum 0.50 m thick
Layer 4 – Topsoil Layer	Typically, 0.20 m thick
Total	**1.30 m thick (min)**

8.2.2.1 Earth Cover Layer Construction

The earth cover layer will be placed over the weed mat and thickened as required to achieve final cap grades. It will act as a working platform for construction of the low permeability clay layer. The layer should include site won clay rich soils, with no material greater than 150 mm, and not more than 20% of the material having dimensions greater than 40 mm.

The layer shall be compacted in maximum 200 mm (compacted) layer thickness.

8.2.2.2 Low Permeability Compacted Clay Cover Layer Construction

The low permeability compacted clay layer will be placed over the earth cover layer to and will act to reduce surface water infiltration into the remedial area. The layer should include site won clay rich soils, capable of achieving a permeability of 1 $x10^{-8}$ or lower. The clay should be free of material greater than 40 mm. The layer should be a minimum of 0.3 m thickness.

The layer shall be compacted in maximum 200 mm (compacted) layer thickness. The soil should be moisture conditioned during placement to make it workable into a uniform layer. The lower layer shall be scarified prior to placement of the overlying layer to assist in developing a uniform clay layer. The layer shall be compacted using a vibrating pad foot roller or similar, , and each layer scarified prior to placement of the overlying layers.

The clay layers shall be covered soon after placement to ensure they do not dry out and crack.

8.2.2.3 Upper Subsoil Layer

The upper subsoil layer will be placed over the low permeability compacted clay layer. It will act as a protection layer over the compacted clay and provide additional thickness between receptors and the arsenic impacted soil. The layer should be a sandy clay or silt, with no material greater than 150 mm.

The layer shall be compacted in maximum 200 mm (compacted) layer thickness.

8.2.2.4 Topsoil layer Placement

The topsoil layer will be placed over the upper subsoil layer. It will accommodate shallow rooted vegetation. It could be a compost layer (in accordance with AS 4454), and must be free of material greater than 150 mm. It should be capable of supporting vegetation. The topsoil layer shall be a minimum of 0.2 m thick and be loosely placed and not compacted.

8.2.3 Vegetation Establishment

The entire topsoil layer shall be vegetated with grasses. Vegetation should not include species with roots that could penetrate the upper subsoil layer. Where possible, the grasses should be native and be similar to existing grasses at the Site.

8.2.4 Perimeter Fencing and Signage

The remedial area shall be secured with perimeter fencing and associated signage to be constructed to be:

- Vermin proof

- Outside of the remedial area
- Include signage identifying arsenic impacted soil and that no excavation can occur, and contact details of relevant authorities and parties should access be required.

The remedial area will require access for maintenance and mowing and should include a locked gate that can accommodate mowing equipment and plant that may be required for maintenance works in the future (if required).

8.3 Registration/Identification of Area

Given the presence of arsenic impacted soil, all efforts must be made to activate mechanisms that will prevent disturbance of the area. These include identification/registration of the area on the following:

- The site's Section 10.7 council planning certificate
- Certificate of title
- Planning authority tools such as Council's GIS
- Dial Before You Dig
- NSW EPA contaminated land register and
- Other relevant planning/environmental databases.

8.4 Imported Soil Material

Capping soil material can be virgin excavated natural material (VENM) sourced from within the site or from an off-site source. Imported VENM from an off-site source is to be accompanied by a certificate prepared by a suitably qualified consultant verifying that the material is VENM. The VENM certificate should be reviewed and approved by a suitably qualified environmental consultant and the VENM material should be inspected by a suitably qualified environmental consultant prior to placement.

8.5 Environmental Management Plan

An EMP will be required for the remedial area, and will be prepared at the completion of the remediation and validation work. It will include the validation report as an attachment and will document the necessary management requirements for the remedial area and associated responsible parties.

8.6 Unexpected Finds Protocol

The assessments to date have not indicated the presence of significant soil contamination that would preclude the proposed remedial activities and methodology. However, it is possible that, yet unidentified contamination is present within the fill material/subsurface of the site.

Potentially hazardous substances could include, but are not limited to:

- Underground storage tanks
- Buried containers and drums
- Phase separated hydrocarbons

- Asbestos containing materials
- Powders and other suspicious buried material and
- Evidence of contamination including significant staining, odours and discolouration.

SLR has prepared a detailed Unexpected Finds Procedure for inclusion in the Construction Environmental Management Plan (CEMP) for the poultry farm development in accordance with condition B50 of Development Consent SSD 7704. In summary, in the event that any material suspected of containing potentially hazardous substances is found during remediation works, the following steps will be followed:

1. The environmental consultant and relevant authorities will be consulted immediately for assessment and advice.
2. The area of concern will be cordoned off.
3. Appropriate environmental management measures will be implemented until the assessment is completed and further advice is received from the consultant.
4. The environmental consultant will undertake any necessary assessment and provide advice on a strategy to manage the identified unexpected contamination.
5. The RAP may require revision depending on the findings and proposed management strategy.

8.7 Remediation Contingency Plan

Based on potential uncertainties associated with soil remediation works of this nature, the situations and contingencies presented in **Table 8-2** will be considered during remediation works.

Table 8-2 Remediation Contingency Measures

Situation	Contingency Measure	Potential for Occurrence
Encountering yet unidentified contamination	The identified contamination (the nature and extent) will be assessed by a qualified and experienced environmental consultant, such that it can be appropriately remediated	Low potential to encounter yet unidentified contamination
Volumes of contaminated material being significantly greater than anticipated	Extension of capped area	Low potential to occur based on the delineation data from DSI (SLR 2019)

9 Validation

9.1 Validation Criteria

9.1.1 Health Screening Levels – Arsenic

To ensure that remaining soil following remedial works is considered suitable for the proposed development, reference will primarily be made to the NEPM 2013 HIL-A guideline as outlined in **Section 6.1**.

Soils exceeding the adopted RAC will require to be included in the remedial area.

9.1.2 Aesthetics

The NEPM (2013) requires that aesthetic quality of accessible soils be considered even if testing suggests that the concentrations of contaminants of concern are within acceptable limits.

No specific numerical guidelines have been assigned for aesthetics. However, NEPM (2013) indicates that professional judgement with regard to quantity, type and distribution of foreign material and/or odours in relation to the specific land use and its sensitivity will be employed.

The following circumstances are considered likely to trigger further aesthetic assessment:

- Highly malodorous soils (e.g. strong residual petroleum hydrocarbon odours, hydrogen sulphide in soil or extracted groundwater, organo-sulfur compounds)
- Discoloured chemical deposits or soil staining with chemical waste other than of a very minor nature
- Large monolithic deposits of otherwise low risk material, e.g. gypsum as powder or plasterboard, cement kiln dust
- Presence of putrescible refuse including material that may generate hazardous levels of methane and
- Soils containing residue from animal burial.
- Asbestos containing materials

In arriving at a balanced assessment, the presence of small quantities of non-hazardous inert material and low odour residue (for example, weak petroleum hydrocarbon odours) that will decrease over time, should not be a cause of concern or limit the use of a site in most circumstances. Similarly, sites with large quantities of well-covered known inert materials that present no health hazards such as brick fragments and cement wastes (for example, broken cement blocks) are usually of low concern for both non-sensitive and sensitive land uses.

Given the results from the DSI, it is considered unlikely that soil will require additional remediation based on aesthetic observations.

9.2 Construction Quality Assurance

Independent verification of construction by a suitably experience person is required throughout remedial activities. This should include:

- Survey (or other method) of each layer to demonstrate layer thickness, elevation and grade at maximum of 10m centres
- Preconstruction permeability testing of clay material for sue in the low permeability compacted clay layer
- Particle size distribution testing of each soil layer prior to construction
- Contamination testing of any imported soil
- Photographs of each layer following construction
- Inspection of the surface prior to placement of earth cover layer, during construction of low permeability clay layer, and following vegetation establishment
- Review of survey data for each layer to confirm layer thickness

- Review of clay testing results
- Preparation of construction validation report detailing all elements of construction, and detailing any variations to the design

9.3 Validation Reporting

Following the completion of all remediation activities, a validation report will be prepared in accordance with NSW EPA 2020, '*Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*'.

The validation report will include the following:

- Executive summary
- Scope of work
- Site identification
- Summary of site history
- Summary of site condition and surrounding environment
- Summary of geology and hydrogeology
- Construction validation report detailing all elements of construction, and detailing any variations to the design
- Information on remediation works, including site activities, waste documentation correlation and validation
- Results of field and laboratory work
- Field and laboratory quality assurance/control information and evaluation
- Site validation discussion
- Ongoing site monitoring requirements (if any) and
- Conclusions and recommendations.

10 Data Quality Objectives

Data quality objectives (DQO) have been developed using the seven step processes described in NSW EPA 2017, *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme* (*3rd edition*).

10.1 Step 1 – State the Problem

Elevated concentrations of arsenic in shallow soils require remediation and validation to confirm the suitability of the remediation area for the proposed land use.

10.2 Step 2 – Identify the Decision

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

- Is the field and laboratory analytical data suitable for assessing the quality of the media being assessed

- Does residual soil contamination remaining on site following remediation present an unacceptable exposure human health exposure risk for the proposed land use scenario.

10.3 Step 3 – Identify Inputs to the Decision

The primary inputs to assessing the above include:

- The site history
- Location, distribution and intervals of sampling at the site
- Data collected during previous assessments, including field measurements, field observations and laboratory analysis results
- Outcomes of the assessment of the quality of collected data
- Site inspections and observations during remediation.

Validation criteria will be adopted from NEPM (2013) as outlined in **Section 8**.

10.4 Step 4 – Define the Study Boundaries

The lateral extent of the soil requiring remediation has been defined in **Figure 6** in **Appendix A**. The vertical boundaries are the depth of arsenic impacted soils. The temporal boundaries include the results of the previous sampling and the remediation works.

10.5 Step 5 – Develop a Decision Rule

The decision rules for the project will be as follows:

- If the site inspections confirm that the capping layer has been installed as per the RAP, then the site will be considered suitable for the proposed land use.
    - Note if there is insufficient information to confirm the nature of the capping layer installed, further assessments may be required to confirm the suitability of the site for the proposed land use.
- Where laboratory analysis is required:
    - If the results of the laboratory analytical data and QAQC samples are acceptable, the data will be considered suitable for the purposes of the project. Data will be assessed for completeness, comparability, representativeness, precision and accuracy
    - If the results of the laboratory analytical data are below the RAC, then the level of contamination in the media assessed will be considered an acceptable exposure risk
    - If the results of laboratory analytical data exceed the RAC, then the level of contamination in the media assessed may require further assessment, management or remediation.

10.6 Step 6 – Specify Acceptable Limits on Decision Errors

There are two types of error:

- Deciding that contamination on the site is an acceptable risk for the proposed land use when it is not and
- Deciding that contamination on the site is not an acceptable risk for the proposed land use when it is.

Confidence in the reliability of assessment methods (e.g. field observations, laboratory analysis and data review) will be based on appropriate levels of qualification and/or experience in the personnel undertaking the relevant task.

10.7 Step 7 – Optimise the Design for Obtaining Data

10.7.1 Photographic Records

Photographs will be taken of the remediation activities and the finished capping.

10.7.2 Location Records

Each sampling location will be recorded using a handheld GPS unit with the depth of each sample to be recorded.

10.7.3 Sample Identification, Storage and Transport Procedures

Samples will be identified using unique sample identifiers and sample depths.

Samples will be placed in laboratory prepared containers and zip lock bags, as appropriate. The sample containers will then be placed directly into an insulated container with ice, for transportation to the NATA accredited analytical laboratory with the chain of custody (COC) form recording the following information:

- Project job number
- Date of sampling
- Sample identifier
- Sample matrix and container type
- Preservation methods used
- Analysis requirements for each sample
- Turnaround times required for analysis and
- Names and signatures of sender and receiving laboratory.

A copy of the COC will be kept in the job file. Samples will be transported to the laboratory with sufficient time to perform analysis within the applicable holding period.

10.8 Quality Assurance / Quality Control

10.8.1 Intra-laboratory Duplicates

Intra-laboratory field duplicates will be collected on an average frequency of one sample per twenty samples collected (5%), with a minimum of one per batch. The analytical results of the two split samples will be compared to assess the precision of the sampling protocol and provide an indication of variability in the sample source. The relative percentage difference (RPD) acceptance limits are as follows:

- No limit analytical results <10 times laboratory limit of reporting (LOR)
- 50% analytical results 10-20 times LOR
- 30% analytical results >20 times LOR

Any RPD exceedances are to be assessed to determine whether the project DQO's can still be addressed.

10.8.2 Inter-Laboratory Duplicates

Inter-laboratory field duplicates will be collected on an average frequency of one sample per twenty samples collected (5%) with a minimum of one per batch. The analytical results of the two split samples are to be compared to assess the precision of the sampling protocol and provide an indication of variability in the sample source. The RPD acceptance limits are as follows:

- No limit analytical results <10 times LOR
- 50% analytical results 10-20 times LOR
- 30% analytical results >20 times LOR

Any RPD exceedances are to be assessed to determine whether the project DQO's can still be addressed.

10.8.3 Laboratory Data Quality Indicators

The laboratory data quality will be assessed by checking the following:

- Laboratory methods used are NATA accredited
- Laboratory limits of reporting are less than adopted RAC
- Samples are extracted and analysed within holding times and
- Results of method blanks, surrogate, lab control sample, spike recoveries RPDs between primary and duplicate laboratory samples.

Where results of laboratory quality control samples exceed the relevant adopted control limit, the laboratory will be requested to assess the significance of the exceedance on the quality of the laboratory analytical data for the relevant batch. Based on the significance of the control limit exceedance, the data will be assessed against the project DQO's.

10.8.4 Decontamination Procedures

Non-disposable sampling equipment will be decontaminated before and between sampling locations to reduce the potential for cross contamination to occur between samples. Decontamination will include the following procedure:

- Washing non-disposable sampling equipment in a solution of phosphate free detergent (e.g. Decon 90) and potable water; and
- Rinsing with distilled water.

11 Site Management

11.1 Register of Contacts

A register of contacts for the remedial works is presented in **Table 11-1**.

Table 11-1 Register of Contacts

Project Role	Person Assigned	Company	Contact Details
Environmental Consultant implementing RAP	Jason Roesler	SLR Consulting Pty Ltd	+61 2 9427 8100 jroesler@slrconsulting.com
Project Site Manager	TBA	TBA	TBA
Remediation Contractor	TBA	TBA	TBA
Independent Construction Quality Assurance Officer	TBA	TBA	TBA
Environmental Regulator	TBA	NSW EPA	131 555 info@environment.nsw.gov.au
Planning Authority	Sally Munk	DPIE	9274 6431 sally.munk@planning.nsw.gov.au

11.2 Hours of Operation

The remediation works will be conducted between the hours of 7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm on Saturdays.

No work will be conducted on Sundays, public holidays or outside the hours specified above without approval from the appropriate regulatory authorities.

11.3 Site Signage and Contact Numbers

A sign displaying the contact details at which the remediation contractor may be contacted outside working hours (and site facilitator if different to the remediation contractor) will be displayed on the nominated remedial areas adjacent access to the areas. The signs will be displayed throughout the duration of the remediation works.

11.4 Site Security

The nominated remedial area will be secured with appropriate fencing to prevent unauthorised access.

11.5 Soil and Water Management

11.5.1 Site Access

Vehicle access to the remedial area will be stabilised to prevent tracking of sediment onto roads and footpaths. Soil, earth, mud or similar materials will be removed from the roadway by shovelling or a means other than washing, that isn't anticipated to generate dust, on a daily basis or as required.

Trucks will be unloaded within the remediation area.

Soil and sediment will be washed off vehicle/plant tyres and tracks, prior to vehicles/plant leaving the remediation area. This soil and sediment will be scraped / swept up and or disposed of depending on its contamination status.

A site-specific sediment and erosion control plan will be prepared and maintained by the remediation contractor. Erosion and sediment control measures will be maintained in a functional condition. Sediment laden stormwater runoff will be controlled using measures outlined in Landcom 2004, '*Managing Urban Stormwater - Soils and Construction*' (the Blue Book).

11.5.2 Stockpiles

It is not envisaged that stockpiling will be required. However, should stockpiling be undertaken as part of the remedial works, stockpiles of soil or other materials:

- Will be stored in a secure area
- Will be covered. Covering of the stockpiles will be undertaken by the contractor, subject to site conditions, expected inclement weather and duration the stockpile is expected to remain on site and
- Will be placed on a level area as a low elongated mound

11.5.3 Groundwater and Surface Water

Given the distance between the remediation area and closest surface water body, it is considered highly unlikely that any surface water from the remedial actions will discharge into a surface water receptor. There is also no reticulated stormwater or sewer infrastructure to receive surface water from the remedial area.

Given the likely depth of groundwater and underlaying clay, it is considered highly unlikely that groundwater will be impacted by the proposed remedial works.

11.6 Noise and Vibration

Noise levels from the site during the project will not exceed the limits indicated in AS2436-2010.

No 'offensive noise' as defined under the *Protection of the Environment Operations Act 1997* will be created during remediation works/activities.

11.7 Air Quality

11.7.1 Dust

Dust may be generated during demolition, transport and placement activities. To prevent excessive dust generation on site and emissions beyond the site boundary, if applicable, consideration will be given to implementing following procedures:

- Securely covering all loads entering or exiting the site. All trucks carrying soil to the site must be covered securely
- Use of water sprays across the site to suppress dust
- Keeping worked surfaces moist, where practical and deemed necessary
- Wetting down of placed fill material during spreading (if required)

- Minimising soil disturbance works during windy days and
- Maintaining stabilised site access/egress points for vehicles.

11.7.2 Odours

Given the findings of previous site assessments, generation of significant odours during the remediation works is considered to be highly unlikely.

11.8 Transport Vehicles

Haulage routes for trucks transporting soil, materials, equipment or machinery to and from the remedial area will be selected by the remediation contractor and will be meet the following objectives:

- Compliance with all traffic road rules
- Minimisation of noise, vibration and odour to adjacent premises
- Utilisation of State roads and minimisation of use of local roads.

The remediation contractor will ensure that all site vehicles:

- Carrying imported soil to the site must be securely covered
- Conduct deliveries of soil, materials, equipment or machinery during the hours of remediation work identified in **Section 11.2**
- Exit the site in a forward direction
- Do not track soil, mud or sediment onto the road.

11.9 Importation of Fill

Any soil to be imported to the site will under-go a visual inspection and validation through soil sampling. If material is to be imported to the site it is recommended that the material be certified as VENM. Imported VENM material with appropriate certification will be sampled at a rate of one sample per 100 m^3 and one sample per 25 m^3 of imported material that does not have appropriate certification for a general suite of contaminants of potential concern being TRH, BTEX, PAH, OCP/OPP, metals and asbestos (presence/absence).

11.10 Occupational Health and Safety

11.10.1 Hazard Identification and Risk Assessment

Each party working within the remediation area will prepare a project specific safe work method statement (SWMS) or job safety analysis (JSA), which will include:

- Identification of hazards associated with work tasks
- A risk assessment undertaken against each hazard identified
- Identification of control measures to mitigate or eliminate risks associated with the hazards identified.

11.10.2 Personnel Decontamination

Personnel working at the site are required to be decontaminated prior to leaving the remediation works zone. Decontamination will include:

- Cleaning down of boots
- Removal and discarding of all disposable personal protection equipment (PPE) items including the coveralls and masks
- Washing of hands.

11.10.3 Personal Protective Equipment

The minimum PPE required to be worn by persons entering the site during remediation works will comprise of the following:

- Hard hats
- Steel cap boots
- Hi-vis vest.

11.11 Emergency Preparedness

An emergency muster point will be established at the egress point of the site, to assemble workers in the event of an emergency. This muster point will be communicated to all workers during the project induction process.

Fire extinguishers and spill control kits will be available on site.

A register of contacts to be utilised in the event of an emergency is presented in **Table 11-2**.

Table 11-2 Emergency Response Contacts

Project Role	Person Assigned	Company	Contact Details
Emergency Services	-	Fire / Police / Ambulance	000
OH&S Regulatory Authority	-	SafeWork NSW	13 10 50
Environmental Regulatory Authority	-	NSW EPA Environment Line	131 500
Project Site Manager	TBA	TBA	TBA
Remediation Contractor	TBA	TBA	TBA
Environmental Consultant	TBA	TBA	TBA

11.12 Community Relations

Given the remote location of the remediation area, it is highly unlikely that the remediation will impact on adjoining neighbours. However, in-line with the commitments made in the EIS, the surrounding residents will be notified of the remediation works at least two days prior to the commencement via a letter drop. The letter will provide an overview of planned remediation activities, advise expected works duration and hours, and advise relevant site contacts.

Communication and complaints received for the remediation works will be reported to the Project Manager. All communications and complaints will be assessed and an appropriate response, corrective and/or preventative action implemented (as necessary).

A communication and complaints register will be operated on site to ensure that concerns of local residences and businesses are recorded and addressed.

12 Conclusion

SLR considers that soils on the site can be made suitable for the proposed development, subject to:

- Implementation of the measures outlined in this revised RAP
- Preparation of a site validation report
- Development of an EMP for the ongoing management of the remedial area.

13 Limitations

This RAP is for the exclusive use of ProTen Tamworth Pty Limited. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR Consulting.

This report has been prepared based on the scope of services (see below). SLR Consulting cannot be held responsible to the Client and/or others for any matters outside the agreed scope of services. Other parties should not rely upon this report and should make their own enquiries and obtain independent advice in relation to such matters.

This report has been prepared by SLR Consulting with reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected (data, surveys, analyses, designs, plans and other information), which has been accepted in good faith as being accurate and valid.

It should be noted that many investigations are based upon an assessment of potentially contaminating processes which may have occurred historically on the site. This assessment is based upon historical records associated with the site. Such records may be inaccurate, absent or contradictory. In addition documents may exist which are not readily available for public viewing.

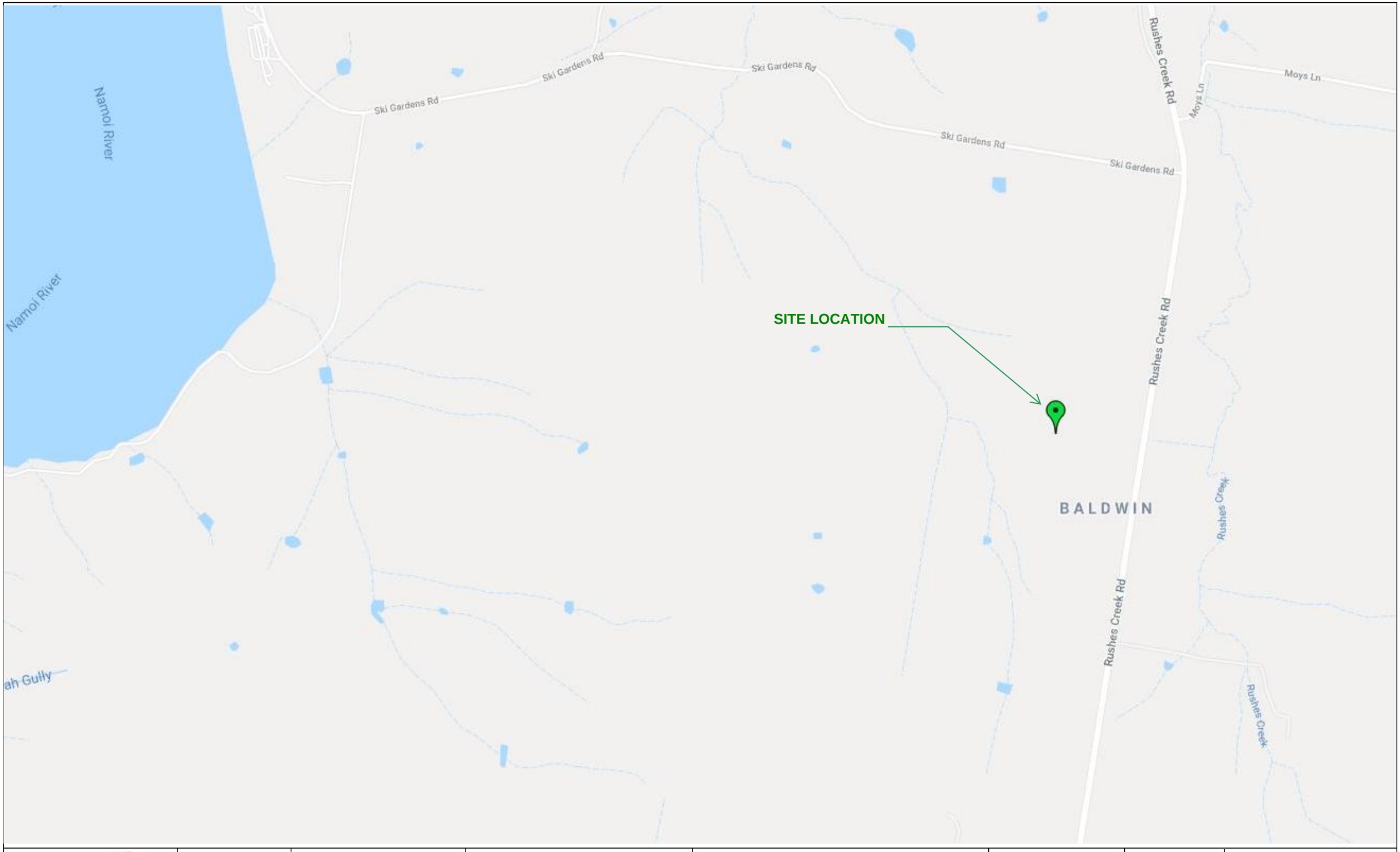
Except where it has been stated in this report, SLR Consulting has not verified the accuracy or completeness of the data relied upon. Statements, opinions, facts, information, conclusions and/or recommendations made in this report ("conclusions") are based in whole or part on the data obtained, those conclusions are contingent upon the accuracy and completeness of the data. SLR Consulting cannot be held liable should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to SLR Consulting leading to incorrect conclusions.

Should the report be reviewed for any reason, the report must be reviewed in its entirety and in conjunction with the associated Scope of Services. It should be understood that where a report has been developed for a specific purpose, for example a due diligence report for a property vendor, it may not be suitable for other purposes such as satisfying the needs of a purchaser or assessing contamination risks for classifying the site. The report should not be applied for any purpose other than that originally specified at the time the report was issued.

Report logs, figures, laboratory data, drawings, etc. are generated for this report by SLR consultants (unless otherwise stated) based on their individual interpretation of the site conditions at the time the site visit was undertaken. Although SLR consultants undergo training to achieve a standard of field reporting, individual interpretation still varies slightly. Information should not under any circumstances be redrawn for inclusion in other documents or separated from this report in any way.

APPENDIX A

Figure 1
..... Site Locality
Figure 2
.....Site Layout
Figure 3
.....Site Contamination Delineation (0.1-0.2 metres)
Figure 4
.....Site Contamination Delineation (0.6-0.8 metres)
Figure 5
.....Site Contamination Delineation (0.9-1.3 metres)
Figure 6
..... Site Contamination Delineation (preliminary remedial area)
Figure 7
.....Concept Capping System



SLR	202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Ref**: 610.30237.00000 Proposed Poultry Production Complex Rushes Creek Road, Rushes Creek, NSW	**Figure 1** Site Locality	April 2021	N Prepared: JR 09/04/2021 Checked: JE 09/04/2021



SLR	2 Lincoln Street, Lane Cove, NSW 2066 Australia	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Remedial Action Plan** Ref: 610.18456.00000	**Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW**	February 2019	N	**Figure 2** **Site Layout**

Arsenic concentrations (mg/kg) at depth 0.1 metres to 0.2 metres



SLR	2 Lincoln Street, Lane Cove, NSW 2066 Australia	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Remedial Action Plan** Ref: 610.18456.00100	**Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW**	February 2019	N	**Figure 3 Site Contamination Delineation (0.1-0.2 metres)**

Arsenic concentrations (mg/kg) at depth 0.6 metres to 0.8 metres

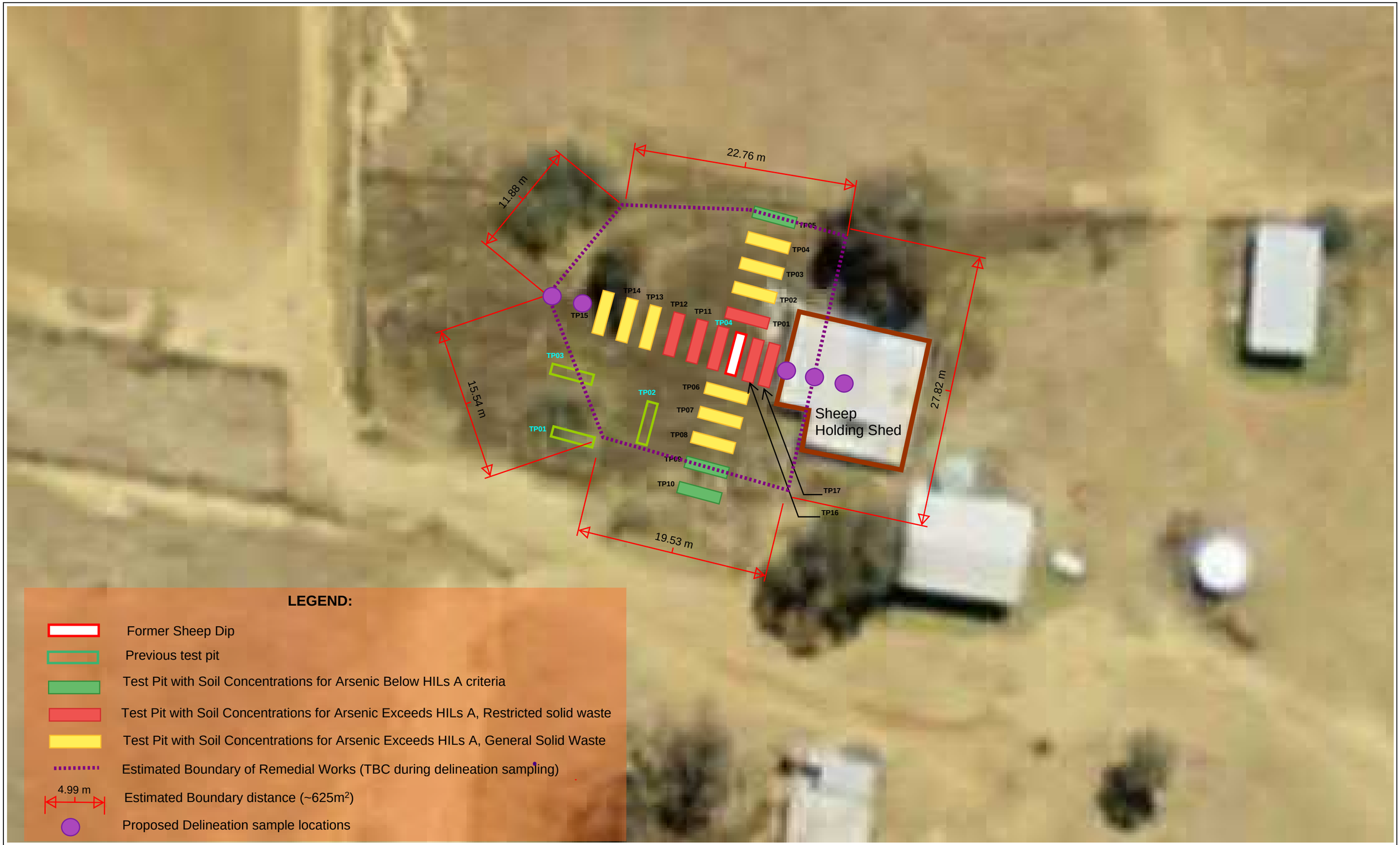


SLR	2 Lincoln Street, Lane Cove, NSW 2066 Australia	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Remedial Action Plan** Ref: 610.18456.00100	**Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW**	February 2019	N	**Figure 4 Site Contamination Delineation (0.6-0.8 metres)**

Arsenic concentrations (mg/kg) at depth 0.9 metres to 1.3 metres

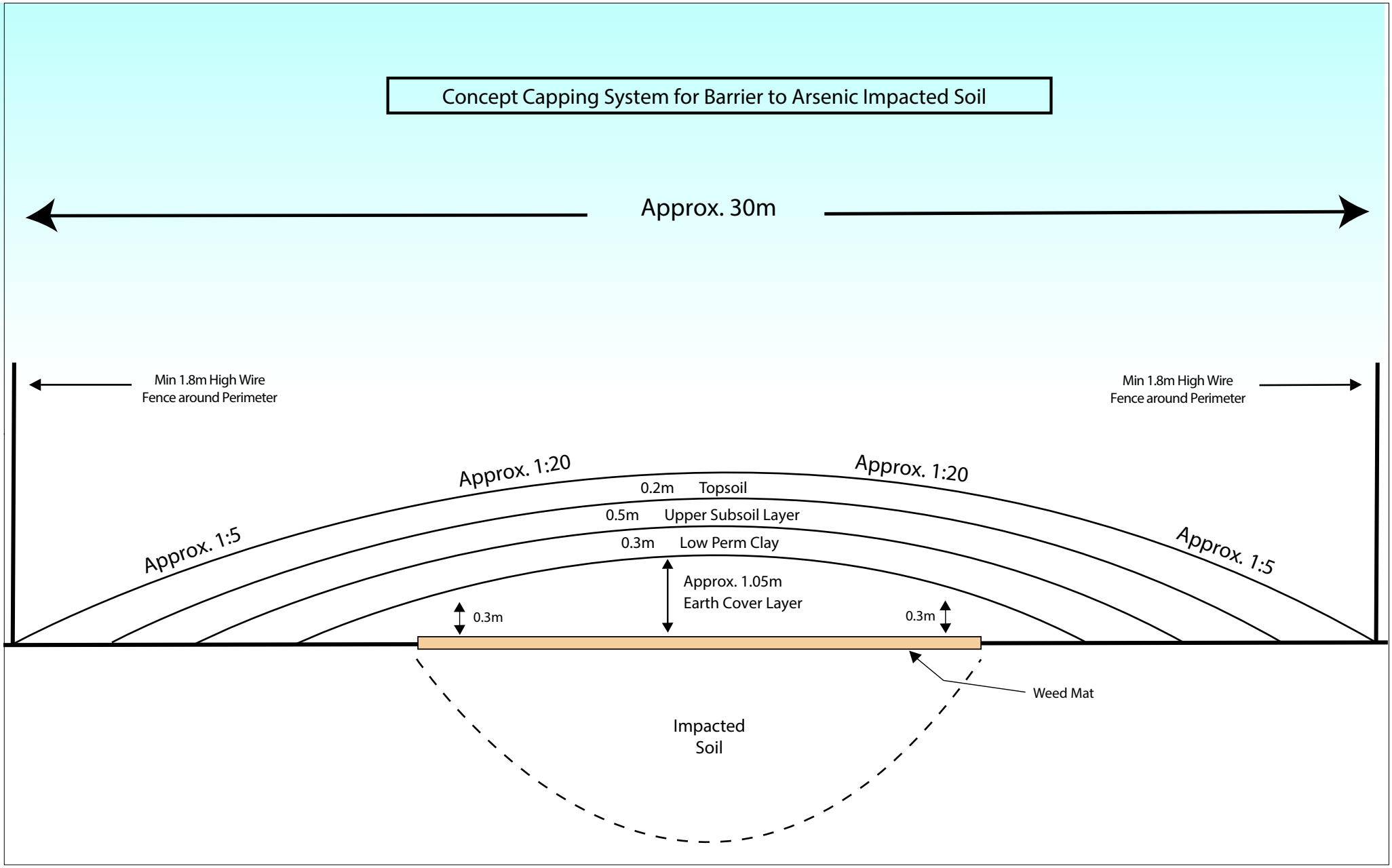


SLR	2 Lincoln Street, Lane Cove, NSW 2066 Australia	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Remedial Action Plan** Ref: 610.18456.00100	**Proposed Poultry Production Complex** **Rushes Creek Road, Rushes Creek, NSW**	February 2019	N	**Figure 5 Site Contamination Delineation (0.9-1.3 metres)**



SLR	202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Ref**: 610.30237.00000 Proposed Poultry Production Complex Rushes Creek Road, Rushes Creek, NSW	**Figure 6** Site Locality Capping Extent	April 2021	N	Prepared: JR 09/04/2021 Checked: JE 09/04/2021

Concept Capping System for Barrier to Arsenic Impacted Soil



SLR	202 Submarine School, Sub Base Platypus, North Sydney, NSW, 2060	T: +61 2 9428 8100 sydney@slrconsulting.com www.slrconsulting.com	**Remedial Action Plan** Ref: 610.30237.00000	Proposed Poultry Production Complex Rushes Creek Road, Rushes Creek, NSW	09 April 2021	North	Figure 7 Concept Capping System for Barrier to Arsenic Impacted Soil

APPENDIX B

Site Photographs



Photograph 1 –View of sheep holding shed



Photograph 2 – View of potential sheep dip



Photograph 3 – View of potential sheep dip with reference to sheep holding shed



Photograph 4 – View of test-pit



Photograph 5 – Backfilling of test-pit



Photograph 6 – View of shed near the sheep holding shed

Notes:

610.18456.00000 Soil Contamination Assessment

Site:	RUSHES CREEK ROAD, RUSHES CREEK
Project:	REMEDIAL ACTION PLAN
Date:	FEBRUARY 2019
Drawing:	**OBSERVATION PHOTOGRAPHS** — **Appendix B**



Photograph 7 – View of sheep dip location beside sheep holding shed



Photograph 8 – View of sheep dip



Photograph 9 – Test-pit to the west of sheep dip with high Arsenic concentration



Photograph 10 – Excavator working on test-pit between sheep dip and sheep holding shed



Photograph 11 – Excavated soil from test-pit



Photograph 12 – View of location of former sheep dip beside sheep holding shed after backfilling

Notes:		SLR 610.18456.00000 Soil Contamination Assessment	Site:	RUSHES CREEK ROAD, RUSHES CREEK
			Project:	REMEDIAL ACTION PLAN
			Date:	FEBRUARY 2019
			Drawing:	**OBSERVATION PHOTOGRAPHS** — **Appendix B**

APPENDIX C

Detailed Site Investigation Test Pit Logs

ENVIRONMENTAL BOREHOLE / TESTPIT TP01 (round 1)

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 30/10/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.5m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
				TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
	TP01_0.2-0.4	Y		SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP01_0.5-0.6	Y		SILTY CLAY (0.40 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
1	TP01_1.3-1.5	Y		Shale: (0.60 - 1.50 mBGL) Angular to sub-angular shale (20-80mm)	
1.5				Termination Depth at: 1.5m Mechanical refusal on very shale bed	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP02 (round 1)

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 30/10/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.0m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
				TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
	TP02_0.2-0.3	Y		SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
	TP02_0.4-0.5	Y		SILTY CLAY (0.30 - 0.50 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
0.5	TP02_0.9-1.0	Y		Shale: (0.50 - 1.0 mBGL) Angular to sub-angular shale (20-80mm)	
1				Termination Depth at: 1.0m Mechanical refusal on very stiff shale bed	

ENVIRONMENTAL BOREHOLE / TESTPIT TP03 (round 1)

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 30/10/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.0m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
				TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
	TP03_0.1-0.2	Y		SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
				SILTY CLAY (0.30 - 0.50 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-15mm)	
	TP03_0.4-0.5	Y			
0.5				Shale: (0.50 - 1.0 mBGL) Angular to sub-angular shale (20-50mm)	
	TP03_0.9-1.0	Y			
1				Termination Depth at: 1.0m Mechanical refusal on very stiff shale bed	

ENVIRONMENTAL BOREHOLE / TESTPIT TP04 (round 1)

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 30/10/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 0.20m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
				TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
	TP04_0.1-0.2	Y		SILTY CLAY (0.10 - 0.20 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5					
1					

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ENVIRONMENTAL BOREHOLE / TESTPIT TP01

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.3m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP01_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP01_0.7	Y		SILTY CLAY (0.40 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, bits of angular to sub-angular shale (5-15mm)	
				Shale: (0.60 - 1.20 mBGL) Angular to sub-angular shale (20-40mm)	
1	TP01_1.2	Y			
				Termination Depth at: 1.3m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP02

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.3m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP02_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP02_0.7	Y		SILTY CLAY (0.40 - 0.70 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
				Shale: (0.70 - 1.3 mBGL) Angular to sub-angular shale (20-40mm)	
1	TP02_1.2	Y			
				Termination Depth at: 1.3m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP03

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP03_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP03_0.6	Y		SILTY CLAY (0.40 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
				Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (20-50mm)	
1	TP03_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP04

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP04_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP04_0.7	Y		SILTY CLAY (0.40 - 0.70 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
				Shale: (0.70 - 1.2 mBGL) Angular to sub-angular shale (20-50mm)	
1	TP04_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP05

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP05_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP05_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
				Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (20-30mm)	
1	TP05_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP06

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP06_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP06_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-10mm)	
				Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (15-30mm)	
1	TP06_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP07

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP07_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP07_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-15mm)	
				Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (15-30mm)	
1	TP07_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP08

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.1m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP08_0.1	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
	TP08_0.5	Y		SILTY CLAY (0.30 - 0.50 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
0.5				Shale: (0.50 - 1.1 mBGL) Angular to sub-angular shale (20-30mm)	
1	TP08_1.0	Y			
				Termination Depth at: 1.1m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP09

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.0m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP09_0.1	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
	TP09_0.5	Y		SILTY CLAY (0.30 - 0.50 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
0.5				Shale: (0.50 - 1.0 mBGL) Angular to sub-angular shale (20-30mm)	
	TP09_0.9	Y			
1				Termination Depth at: 1.0m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP10

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 0.9m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP10_0.1	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
	TP10_0.4	Y		SILTY CLAY (0.30 - 0.40 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
0.5	TP10_0.8	Y		Shale: (0.40 - 0.90 mBGL) Angular to sub-angular shale (20-30mm)	
1				Termination Depth at: 0.90m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP11

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP11_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP11_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (5-15mm)	
				Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (10-30mm)	
1	TP11_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP12

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP12_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP12_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-15mm)	
	TP12_1.1	Y		Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (10-30mm)	
1				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP13

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.1m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP13_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP13_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-15mm)	
				Shale: (0.60 - 1.1 mBGL) Angular to sub-angular shale (15-30mm)	
1	TP13_1.0	Y			
				Termination Depth at: 1.1m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP14

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP14_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.30 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP14_0.6	Y		SILTY CLAY (0.30 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-15mm)	
				Shale: (0.60 - 1.2 mBGL) Angular to sub-angular shale (15-30mm)	
1	TP14_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP15

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.3m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
				TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
	TP15_0.2	Y		SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP15_0.7	Y		SILTY CLAY (0.40 - 0.70 mBGL) Red/brown, stiff, dry, low plasticity, angular to sub-angular shale (10-20mm)	
				Shale: (0.70 - 1.3 mBGL) Angular to sub-angular shale (20-40mm)	
1	TP15_1.2	Y			
				Termination Depth at: 1.3m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP16

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.2m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP16_0.2	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP16_0.6	Y		SILTY CLAY (0.40 - 0.60 mBGL) Red/brown, stiff, dry, low plasticity, bits of angular to sub-angular shale (5-15mm)	
				Shale: (0.60 - 1.20 mBGL) Angular to sub-angular shale (20-40mm)	
1	TP16_1.1	Y			
				Termination Depth at: 1.2m Mechanical refusal on very stiff shale	

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ENVIRONMENTAL BOREHOLE / TESTPIT TP17

PROJECT NUMBER 610.18456.00000	**DRILLING DATE** 06/12/2018	**COORDINATES**
PROJECT NAME ProTen Tamworth DSI	**DRILLING COMPANY** TPE Earthmoving & Civil	**COORD SYS**
CLIENT ProTen	**DRILLER**	**SURFACE ELEVATION**
ADDRESS Rushes Creek Road, Rushes Creek NSW	**DRILLING METHOD** Excavator	**LOGGED BY** Junaidi Ibrahim
	TOTAL DEPTH 1.3m	**CHECKED BY** Lachlan McWha

COMMENTS

Depth (m)	Samples	Is Analysed?	Graphic Log	Material Description	Additional Observations
	TP17_0.1	Y		TOPSOIL: (0.00 - 0.10 mBGL) Dark brown, soft, dry, low plasticity, vegetation	
				SILTY CLAY (0.10 - 0.40 mBGL) Brown to red/brown, soft, dry, low plasticity	
0.5	TP17_0.8	Y		SILTY CLAY (0.40 - 0.80 mBGL) Red/brown, stiff, dry, low plasticity, bits of angular to sub-angular shale (5-15mm)	
				Shale: (0.80 - 1.30 mBGL) Angular to sub-angular shale (20-40mm)	
1	TP17_1.2	Y			
				Termination Depth at: 1.3m Mechanical refusal on very stiff shale	

Disclaimer This log is intended for environmental not geotechnical purposes.

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APPENDIX D

Laboratory Reports

Certificate of Analysis

SLR Consulting
2 Lincoln St
Lane Cove West
NSW 2066

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Junaidi Ibrahim**

Report **625300-S**
Project name DSI PROTEN TAMWORTH
Project ID 610.18456
Received Date Oct 31, 2018

Client Sample ID			**TP01_0.2-0.4**	**TP01_0.5-0.6**	**TP02_0.2-0.3**	**TP02_0.4-0.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc38411**	**S18-Oc38412**	**S18-Oc38413**	**S18-Oc38414**
Date Sampled			**Oct 30, 2018**	**Oct 30, 2018**	**Oct 30, 2018**	**Oct 30, 2018**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	119	111	123	111
Tetrachloro-m-xylene (surr.)	1	%	114	100	105	101
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP01_0.2-0.4	TP01_0.5-0.6	TP02_0.2-0.3	TP02_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc38411	S18-Oc38412	S18-Oc38413	S18-Oc38414
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	72	97	75	95
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2

Client Sample ID			TP01_0.2-0.4	TP01_0.5-0.6	TP02_0.2-0.3	TP02_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc38411	S18-Oc38412	S18-Oc38413	S18-Oc38414
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	14	9.7	28	9.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	11	19	18
Copper	5	mg/kg	60	44	67	68
Lead	5	mg/kg	15	11	17	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	22	14	22	23
Zinc	5	mg/kg	80	70	91	100
% Moisture	1	%	18	7.4	16	12

Client Sample ID			TP02_0.9-1.0	TP03_0.1-0.2	TP03_0.4-0.5	TP03_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc38415	S18-Oc38416	S18-Oc38417	S18-Oc38418
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP02_0.9-1.0	TP03_0.1-0.2	TP03_0.4-0.5	TP03_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc38415	S18-Oc38416	S18-Oc38417	S18-Oc38418
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	90	125	115	135
Tetrachloro-m-xylene (surr.)	1	%	84	110	101	122
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	91	84	89	78
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP02_0.9-1.0	TP03_0.1-0.2	TP03_0.4-0.5	TP03_0.9-1.0
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc38415**	**S18-Oc38416**	**S18-Oc38417**	**S18-Oc38418**
Date Sampled			**Oct 30, 2018**	**Oct 30, 2018**	**Oct 30, 2018**	**Oct 30, 2018**
Test/Reference	LOR	Unit				
Triazines						
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	2.2	14	6.2	8.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	17	10	12
Copper	5	mg/kg	21	52	42	52
Lead	5	mg/kg	5.0	14	10	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	7.2	18	13	15
Zinc	5	mg/kg	35	70	68	81
% Moisture	1	%	5.6	16	10	7.8

Client Sample ID			TP04_0.1-0.2	QC1	TP01_1.3-1.5
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-Oc38419**	**S18-Oc38420**	**S18-Oc38429**
Date Sampled			**Oct 30, 2018**	**Oct 30, 2018**	**Oct 30, 2018**
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05

Client Sample ID			TP04_0.1-0.2	QC1	TP01_1.3-1.5
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc38419	S18-Oc38420	S18-Oc38429
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	135	141	113
Tetrachloro-m-xylene (surr.)	1	%	117	129	103
Organophosphorus Pesticides					
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2

Client Sample ID			TP04_0.1-0.2	QC1	TP01_1.3-1.5
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-Oc38419	S18-Oc38420	S18-Oc38429
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit			
Organophosphorus Pesticides					
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	94	82	80
Triazines					
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Carbamate Pesticides					
Aldicarb	2	mg/kg	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2
Synthetic Pyrethroids*					
Allethrin*	2	mg/kg	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2
Heavy Metals					
Arsenic	2	mg/kg	2600	17	7.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	17	20	11
Copper	5	mg/kg	55	67	49
Lead	5	mg/kg	25	16	12
Mercury	0.1	mg/kg	0.2	< 0.1	< 0.1
Nickel	5	mg/kg	14	23	15
Zinc	5	mg/kg	270	96	80
% Moisture	1	%	18	16	5.7

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Nov 02, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Nov 02, 2018	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Triazines	Melbourne	Nov 02, 2018	14 Day
- Method: LTM-ORG-2080			
Carbamate Pesticides	Melbourne	Nov 02, 2018	14 Day
- Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC			
Synthetic Pyrethroids*	Melbourne	Nov 02, 2018	14 Day
- Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV			
Metals M8	Melbourne	Nov 02, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Oct 31, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

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

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: DSI PROTEN TAMWORTH
Project ID: 610.18456

Order No.:
Report #: 625300
Phone: 02 9428 8100
Fax:

Received: Oct 31, 2018 9:45 AM
Due: Nov 7, 2018
Priority: 5 Day
Contact Name: Junaidi Ibrahim

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						HOLD	HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X						
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	TP01_0.2-0.4	Oct 30, 2018		Soil	S18-Oc38411			X	X	X	X	X	X
2	TP01_0.5-0.6	Oct 30, 2018		Soil	S18-Oc38412			X	X	X	X	X	X
3	TP02_0.2-0.3	Oct 30, 2018		Soil	S18-Oc38413			X	X	X	X	X	X
4	TP02_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38414			X	X	X	X	X	X
5	TP02_0.9-1.0	Oct 30, 2018		Soil	S18-Oc38415			X	X	X	X	X	X
6	TP03_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38416			X	X	X	X	X	X
7	TP03_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38417			X	X	X	X	X	X
8	TP03_0.9-1.0	Oct 30, 2018		Soil	S18-Oc38418			X	X	X	X	X	X
9	TP04_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38419			X	X	X	X	X	X

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Sample Detail						HOLD	HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X						
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
10	QC1	Oct 30, 2018		Soil	S18-Oc38420			X	X	X	X	X	X
11	R01	Oct 30, 2018		Water	S18-Oc38421			X	X	X	X	X	
12	TS	Oct 30, 2018		Water	S18-Oc38422	X							
13	TB	Oct 30, 2018		Water	S18-Oc38423	X							
14	TS	Oct 30, 2018		Soil	S18-Oc38424		X						
15	TB	Oct 30, 2018		Soil	S18-Oc38425		X						
16	LAB SPIKE	Oct 30, 2018		Soil	S18-Oc38426		X						
17	TP01_1.3-1.5	Oct 30, 2018		Soil	S18-Oc38429			X	X	X	X	X	X
Test Counts						5	5	12	12	12	12	12	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Triazines							
Ametryn	mg/kg	< 0.2			0.2	Pass	
Atraton	mg/kg	< 0.2			0.2	Pass	
Atrazine	mg/kg	< 0.2			0.2	Pass	
Prometon	mg/kg	< 0.2			0.2	Pass	
Prometryn	mg/kg	< 0.2			0.2	Pass	
Propazine	mg/kg	< 0.2			0.2	Pass	
Simazine	mg/kg	< 0.2			0.2	Pass	
Simetryn	mg/kg	< 0.2			0.2	Pass	
Terbuthylazine	mg/kg	< 0.2			0.2	Pass	
Terbutryne	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Carbamate Pesticides							
Aldicarb	mg/kg	< 2			2	Pass	
Bendiocarb	mg/kg	< 2			2	Pass	
Carbaryl	mg/kg	< 2			2	Pass	
Carbofuran	mg/kg	< 2			2	Pass	
Methomyl	mg/kg	< 2			2	Pass	
Oxamyl	mg/kg	< 2			2	Pass	
Thiobencarb	mg/kg	< 2			2	Pass	
Method Blank							
Synthetic Pyrethroids*							
Allethrin*	mg/kg	< 2			2	Pass	
Cyfluthrin*	mg/kg	< 2			2	Pass	
Cypermethrin (total)*	mg/kg	< 2			2	Pass	
Fenvalerate*	mg/kg	< 2			2	Pass	
Permethrin	mg/kg	< 2			2	Pass	
Phenothrin*	mg/kg	< 2			2	Pass	
Resmethrin*	mg/kg	< 2			2	Pass	
Tetramethrin*	mg/kg	< 2			2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	119			70-130	Pass	
4.4'-DDE	%	117			70-130	Pass	
4.4'-DDT	%	129			70-130	Pass	
a-BHC	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	%	110			70-130	Pass	
b-BHC	%	98			70-130	Pass	
d-BHC	%	101			70-130	Pass	
Dieldrin	%	114			70-130	Pass	
Endosulfan I	%	111			70-130	Pass	
Endosulfan II	%	114			70-130	Pass	
Endosulfan sulphate	%	110			70-130	Pass	
Endrin	%	125			70-130	Pass	
Endrin aldehyde	%	115			70-130	Pass	
Endrin ketone	%	116			70-130	Pass	
g-BHC (Lindane)	%	98			70-130	Pass	
Heptachlor	%	111			70-130	Pass	
Heptachlor epoxide	%	105			70-130	Pass	
Hexachlorobenzene	%	94			70-130	Pass	
Methoxychlor	%	115			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	83			70-130	Pass	
Dimethoate	%	71			70-130	Pass	
Ethion	%	106			70-130	Pass	
Fenitrothion	%	94			70-130	Pass	
Methyl parathion	%	92			70-130	Pass	
Mevinphos	%	103			70-130	Pass	
LCS - % Recovery							
Triazines							
Prometryn	%	92			75-125	Pass	
LCS - % Recovery							
Carbamate Pesticides							
Aldicarb	%	117			70-130	Pass	
Bendiocarb	%	119			70-130	Pass	
Carbaryl	%	124			70-130	Pass	
Carbofuran	%	119			70-130	Pass	
Methomyl	%	114			70-130	Pass	
Oxamyl	%	144			70-130	Fail	
Thiobencarb	%	115			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	111			80-120	Pass	
Cadmium	%	112			80-120	Pass	
Chromium	%	110			80-120	Pass	
Copper	%	118			80-120	Pass	
Lead	%	119			80-120	Pass	
Mercury	%	113			75-125	Pass	
Nickel	%	117			80-120	Pass	
Zinc	%	114			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	M18-No00361	NCP	%	103			70-130	Pass	
Dimethoate	M18-No00361	NCP	%	97			70-130	Pass	
Ethion	M18-No00361	NCP	%	101			70-130	Pass	
Fenitrothion	M18-No00361	NCP	%	83			70-130	Pass	
Methyl parathion	M18-No00361	NCP	%	73			70-130	Pass	
Mevinphos	M18-No00361	NCP	%	70			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Synthetic Pyrethroids*				Result 1					
Cyfluthrin*	M18-Oc20554	NCP	%	91			70-130	Pass	
Cypermethrin (total)*	M18-Oc20554	NCP	%	93			70-130	Pass	
Permethrin	M18-Oc20554	NCP	%	89			70-130	Pass	
Resmethrin*	M18-Oc20554	NCP	%	93			70-130	Pass	
Tetramethrin*	M18-Oc20554	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S18-Oc38412	CP	%	108			70-130	Pass	
4.4'-DDE	S18-Oc38412	CP	%	107			70-130	Pass	
4.4'-DDT	S18-Oc38412	CP	%	122			70-130	Pass	
a-BHC	S18-Oc38412	CP	%	90			70-130	Pass	
Aldrin	S18-Oc38412	CP	%	97			70-130	Pass	
b-BHC	S18-Oc38412	CP	%	90			70-130	Pass	
d-BHC	S18-Oc38412	CP	%	95			70-130	Pass	
Dieldrin	S18-Oc38412	CP	%	104			70-130	Pass	
Endosulfan I	S18-Oc38412	CP	%	101			70-130	Pass	
Endosulfan II	S18-Oc38412	CP	%	105			70-130	Pass	
Endosulfan sulphate	S18-Oc38412	CP	%	102			70-130	Pass	
Endrin	S18-Oc38412	CP	%	127			70-130	Pass	
Endrin aldehyde	S18-Oc38412	CP	%	104			70-130	Pass	
Endrin ketone	S18-Oc38412	CP	%	107			70-130	Pass	
g-BHC (Lindane)	S18-Oc38412	CP	%	90			70-130	Pass	
Heptachlor	S18-Oc38412	CP	%	108			70-130	Pass	
Heptachlor epoxide	S18-Oc38412	CP	%	97			70-130	Pass	
Hexachlorobenzene	S18-Oc38412	CP	%	85			70-130	Pass	
Methoxychlor	S18-Oc38412	CP	%	113			70-130	Pass	
Spike - % Recovery									
Carbamate Pesticides				Result 1					
Aldicarb	S18-Oc38412	CP	%	174			70-130	Fail	Q08
Bendiocarb	S18-Oc38412	CP	%	107			70-130	Pass	
Carbaryl	S18-Oc38412	CP	%	108			70-130	Pass	
Carbofuran	S18-Oc38412	CP	%	107			70-130	Pass	
Methomyl	S18-Oc38412	CP	%	110			70-130	Pass	
Oxamyl	S18-Oc38412	CP	%	118			70-130	Pass	
Thiobencarb	S18-Oc38412	CP	%	113			70-130	Pass	
Spike - % Recovery									
Synthetic Pyrethroids*				Result 1					
Allethrin*	S18-Oc38412	CP	%	90			70-130	Pass	
Fenvalerate*	S18-Oc38412	CP	%	79			70-130	Pass	
Phenothrin*	S18-Oc38412	CP	%	88			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Oc38412	CP	%	104			75-125	Pass	
Cadmium	S18-Oc38412	CP	%	106			75-125	Pass	
Chromium	S18-Oc38412	CP	%	105			75-125	Pass	
Copper	S18-Oc38412	CP	%	103			75-125	Pass	
Lead	S18-Oc38412	CP	%	106			75-125	Pass	
Mercury	S18-Oc38412	CP	%	113			70-130	Pass	
Nickel	S18-Oc38412	CP	%	106			75-125	Pass	
Zinc	S18-Oc38412	CP	%	97			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-Oc38411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-Oc38411	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S18-Oc38411	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ronnel	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Triazines				Result 1	Result 2	RPD			
Ametryn	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atraton	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atrazine	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometon	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometryn	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Propazine	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simazine	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simetryn	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbuthylazine	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbutryne	S18-Oc38411	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Carbamate Pesticides				Result 1	Result 2	RPD			
Aldicarb	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bendiocarb	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Carbaryl	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Carbofuran	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Methomyl	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Oxamyl	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Thiobencarb	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Duplicate									
Synthetic Pyrethroids*				Result 1	Result 2	RPD			
Allethrin*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cyfluthrin*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cypermethrin (total)*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Fenvalerate*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Permethrin	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phenothrin*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Resmethrin*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Tetramethrin*	S18-Oc38411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Oc38411	CP	mg/kg	14	13	7.0	30%	Pass	
Cadmium	S18-Oc38411	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Oc38411	CP	mg/kg	19	17	7.0	30%	Pass	
Copper	S18-Oc38411	CP	mg/kg	60	54	11	30%	Pass	
Lead	S18-Oc38411	CP	mg/kg	15	13	12	30%	Pass	
Mercury	S18-Oc38411	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Oc38411	CP	mg/kg	22	19	14	30%	Pass	
Zinc	S18-Oc38411	CP	mg/kg	80	73	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-Oc38411	CP	%	18	18	2.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Oc38412	CP	mg/kg	9.7	10.0	3.0	30%	Pass	
Cadmium	S18-Oc38412	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Oc38412	CP	mg/kg	11	11	2.0	30%	Pass	
Copper	S18-Oc38412	CP	mg/kg	44	45	2.0	30%	Pass	
Lead	S18-Oc38412	CP	mg/kg	11	11	<1	30%	Pass	
Mercury	S18-Oc38412	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Oc38412	CP	mg/kg	14	14	1.0	30%	Pass	
Zinc	S18-Oc38412	CP	mg/kg	70	71	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-Oc38429	CP	%	5.7	6.0	5.0	30%	Pass	

Comments

Sample Integrity

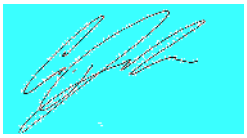
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted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

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

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Certificate of Analysis

SLR Consulting
2 Lincoln St
Lane Cove West
NSW 2066

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Junaidi Ibrahim**

Report **625300-W**
Project name DSI PROTEN TAMWORTH
Project ID 610.18456
Received Date Oct 31, 2018

Client Sample ID			**R01**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S18-Oc38421**
Date Sampled			**Oct 30, 2018**
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.001	mg/L	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001
Endrin	0.0001	mg/L	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001
Toxaphene	0.01	mg/L	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001
Dibutylchlorendate (surr.)	1	%	98
Tetrachloro-m-xylene (surr.)	1	%	62
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.02	mg/L	< 0.02

Client Sample ID			R01
Sample Matrix			Water
Eurofins | mgt Sample No.			S18-Oc38421
Date Sampled			Oct 30, 2018
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.002	mg/L	< 0.002
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	58
Triazines			
Ametryn	0.002	mg/L	< 0.002
Atraton	0.002	mg/L	< 0.002
Atrazine	0.002	mg/L	< 0.002
Prometon	0.002	mg/L	< 0.002
Prometryn	0.002	mg/L	< 0.002
Propazine	0.002	mg/L	< 0.002
Simazine	0.002	mg/L	< 0.002
Simetryn	0.002	mg/L	< 0.002
Terbuthylazine	0.002	mg/L	< 0.002
Terbutryne	0.002	mg/L	< 0.002
Carbamate Pesticides			
Aldicarb	0.01	mg/L	< 0.01
Bendiocarb	0.01	mg/L	< 0.1
Carbaryl	0.01	mg/L	< 0.01
Carbofuran	0.01	mg/L	< 0.1
Methomyl	0.01	mg/L	< 0.05
Oxamyl	0.01	mg/L	< 0.01
Thiobencarb	0.01	mg/L	< 0.01

Client Sample ID			R01
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S18-Oc38421**
Date Sampled			**Oct 30, 2018**
Test/Reference	LOR	Unit	
Synthetic Pyrethroids*			
Allethrin*	0.2	mg/L	< 0.2
Cyfluthrin*	0.2	mg/L	< 0.2
Cypermethrin (total)*	0.2	mg/L	< 0.2
Fenvalerate*	0.2	mg/L	< 0.2
Permethrin	0.2	mg/L	< 0.2
Phenothrin*	0.2	mg/L	< 0.2
Resmethrin*	0.2	mg/L	< 0.2
Tetramethrin*	0.2	mg/L	< 0.2
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Nov 01, 2018	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Nov 01, 2018	7 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Triazines	Melbourne	Nov 01, 2018	7 Day
- Method: LTM-ORG-2080			
Carbamate Pesticides	Melbourne	Nov 01, 2018	7 Day
- Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC			
Synthetic Pyrethroids*	Melbourne	Nov 01, 2018	7 Day
- Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV			
Metals M8	Melbourne	Nov 01, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Site # 1254 & 14271

Sydney
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NATA # 1261 Site # 18217

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

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

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: DSI PROTEN TAMWORTH
Project ID: 610.18456

Order No.:
Report #: 625300
Phone: 02 9428 8100
Fax:

Received: Oct 31, 2018 9:45 AM
Due: Nov 7, 2018
Priority: 5 Day
Contact Name: Junaidi Ibrahim

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						HOLD	HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X						
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	TP01_0.2-0.4	Oct 30, 2018		Soil	S18-Oc38411			X	X	X	X	X	X
2	TP01_0.5-0.6	Oct 30, 2018		Soil	S18-Oc38412			X	X	X	X	X	X
3	TP02_0.2-0.3	Oct 30, 2018		Soil	S18-Oc38413			X	X	X	X	X	X
4	TP02_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38414			X	X	X	X	X	X
5	TP02_0.9-1.0	Oct 30, 2018		Soil	S18-Oc38415			X	X	X	X	X	X
6	TP03_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38416			X	X	X	X	X	X
7	TP03_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38417			X	X	X	X	X	X
8	TP03_0.9-1.0	Oct 30, 2018		Soil	S18-Oc38418			X	X	X	X	X	X
9	TP04_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38419			X	X	X	X	X	X

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Sample Detail						HOLD	HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X						
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
10	QC1	Oct 30, 2018		Soil	S18-Oc38420			X	X	X	X	X	X
11	R01	Oct 30, 2018		Water	S18-Oc38421			X	X	X	X	X	
12	TS	Oct 30, 2018		Water	S18-Oc38422	X							
13	TB	Oct 30, 2018		Water	S18-Oc38423	X							
14	TS	Oct 30, 2018		Soil	S18-Oc38424		X						
15	TB	Oct 30, 2018		Soil	S18-Oc38425		X						
16	LAB SPIKE	Oct 30, 2018		Soil	S18-Oc38426		X						
17	TP01_1.3-1.5	Oct 30, 2018		Soil	S18-Oc38429			X	X	X	X	X	X
Test Counts						5	5	12	12	12	12	12	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Triazines							
Ametryn	mg/L	< 0.002			0.002	Pass	
Atraton	mg/L	< 0.002			0.002	Pass	
Atrazine	mg/L	< 0.002			0.002	Pass	
Prometon	mg/L	< 0.002			0.002	Pass	
Prometryn	mg/L	< 0.002			0.002	Pass	
Propazine	mg/L	< 0.002			0.002	Pass	
Simazine	mg/L	< 0.002			0.002	Pass	
Simetryn	mg/L	< 0.002			0.002	Pass	
Terbuthylazine	mg/L	< 0.002			0.002	Pass	
Terbutryne	mg/L	< 0.002			0.002	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	102			70-130	Pass	
4.4'-DDD	%	99			70-130	Pass	
4.4'-DDE	%	126			70-130	Pass	
4.4'-DDT	%	89			70-130	Pass	
a-BHC	%	121			70-130	Pass	
Aldrin	%	104			70-130	Pass	
b-BHC	%	123			70-130	Pass	
d-BHC	%	114			70-130	Pass	
Dieldrin	%	119			70-130	Pass	
Endosulfan I	%	125			70-130	Pass	
Endosulfan II	%	124			70-130	Pass	
Endosulfan sulphate	%	92			70-130	Pass	
Endrin	%	115			70-130	Pass	
Endrin aldehyde	%	82			70-130	Pass	
Endrin ketone	%	115			70-130	Pass	
g-BHC (Lindane)	%	113			70-130	Pass	
Heptachlor	%	115			70-130	Pass	
Heptachlor epoxide	%	105			70-130	Pass	
Hexachlorobenzene	%	120			70-130	Pass	
Methoxychlor	%	71			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	84			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dimethoate			%	74			70-130	Pass	
Ethion			%	78			70-130	Pass	
Fenitrothion			%	72			70-130	Pass	
Methyl parathion			%	78			70-130	Pass	
Mevinphos			%	90			70-130	Pass	
LCS - % Recovery									
Triazines									
Prometryn			%	80			75-125	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	95			80-120	Pass	
Cadmium			%	95			80-120	Pass	
Chromium			%	92			80-120	Pass	
Copper			%	94			80-120	Pass	
Lead			%	92			80-120	Pass	
Mercury			%	89			75-125	Pass	
Nickel			%	94			80-120	Pass	
Zinc			%	98			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M18-Oc34276	NCP	%	80			70-130	Pass	
4.4'-DDD	M18-Oc34276	NCP	%	73			70-130	Pass	
4.4'-DDE	M18-Oc34276	NCP	%	90			70-130	Pass	
4.4'-DDT	M18-Oc34276	NCP	%	74			70-130	Pass	
a-BHC	M18-Oc34276	NCP	%	81			70-130	Pass	
Aldrin	M18-Oc34276	NCP	%	72			70-130	Pass	
b-BHC	M18-Oc34276	NCP	%	80			70-130	Pass	
d-BHC	M18-Oc34276	NCP	%	91			70-130	Pass	
Dieldrin	M18-Oc34276	NCP	%	92			70-130	Pass	
Endosulfan I	M18-Oc34276	NCP	%	93			70-130	Pass	
Endosulfan II	M18-Oc34276	NCP	%	98			70-130	Pass	
Endosulfan sulphate	M18-Oc33704	NCP	%	85			70-130	Pass	
Endrin	M18-Oc34276	NCP	%	81			70-130	Pass	
Endrin aldehyde	M18-Oc34276	NCP	%	71			70-130	Pass	
Endrin ketone	M18-Oc34276	NCP	%	86			70-130	Pass	
g-BHC (Lindane)	M18-Oc34276	NCP	%	95			70-130	Pass	
Heptachlor	M18-Oc34276	NCP	%	71			70-130	Pass	
Heptachlor epoxide	M18-Oc34276	NCP	%	82			70-130	Pass	
Hexachlorobenzene	M18-Oc34276	NCP	%	75			70-130	Pass	
Methoxychlor	M18-Oc33704	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	M18-Oc37832	NCP	%	109			70-130	Pass	
Dimethoate	M18-Oc37832	NCP	%	79			70-130	Pass	
Ethion	M18-Oc37832	NCP	%	84			70-130	Pass	
Fenitrothion	M18-Oc37832	NCP	%	95			70-130	Pass	
Methyl parathion	M18-Oc37832	NCP	%	89			70-130	Pass	
Mevinphos	M18-Oc37832	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Oc37667	NCP	%	98			75-125	Pass	
Cadmium	M18-Oc37667	NCP	%	98			75-125	Pass	
Chromium	M18-Oc37667	NCP	%	97			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	M18-Oc37667	NCP	%	98			75-125	Pass	
Lead	M18-Oc37667	NCP	%	95			75-125	Pass	
Mercury	M18-Oc37667	NCP	%	93			70-130	Pass	
Nickel	M18-Oc37667	NCP	%	99			75-125	Pass	
Zinc	M18-Oc37667	NCP	%	101			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M18-Oc37831	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	M18-Oc37831	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	M18-Oc37831	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos-methyl	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	M18-Oc37831	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	M18-Oc37831	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-O	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Naled	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	M18-Oc37831	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Triazines				Result 1	Result 2	RPD			
Ametryn	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Atraton	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Atrazine	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Prometon	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Prometryn	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Propazine	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Simazine	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Simetryn	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbuthylazine	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbutryne	M18-Oc37831	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M18-Oc37667	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M18-Oc37667	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M18-Oc37667	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

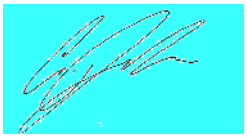
Comments

Sample Integrity

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

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson
National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

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Accreditation Number 1261
Site Number 18217

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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Junaidi Ibrahim**

Report **631838-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 07, 2018

Client Sample ID			**TP01_0.1**	**TP01_0.7**	**TP01_1.2**	**TP16_0.2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-De08338**	**S18-De08339**	**S18-De08340**	**S18-De08341**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	70	72	89	134
Tetrachloro-m-xylene (surr.)	1	%	110	116	66	77
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP01_0.1	TP01_0.7	TP01_1.2	TP16_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08338	S18-De08339	S18-De08340	S18-De08341
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	85	84	114	113
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2

Client Sample ID			TP01_0.1	TP01_0.7	TP01_1.2	TP16_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08338	S18-De08339	S18-De08340	S18-De08341
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	860	280	230	780
Cadmium	0.4	mg/kg	1.6	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	12	9.4	15
Copper	5	mg/kg	53	46	46	48
Lead	5	mg/kg	83	12	15	18
Mercury	0.1	mg/kg	0.6	< 0.1	< 0.1	0.3
Nickel	5	mg/kg	11	14	12	15
Zinc	5	mg/kg	940	97	160	330
% Moisture	1	%	20	12	8.6	16

Client Sample ID			TP16_0.6	TP16_1.1	TP02_0.2	TP02_0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08342	S18-De08343	S18-De08406	S18-De08407
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP16_0.6	TP16_1.1	TP02_0.2	TP02_0.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08342	S18-De08343	S18-De08406	S18-De08407
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	134	129	129	95
Tetrachloro-m-xylene (surr.)	1	%	70	78	90	66
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	103	111	119	127
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP16_0.6	TP16_1.1	TP02_0.2	TP02_0.7
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-De08342**	**S18-De08343**	**S18-De08406**	**S18-De08407**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Triazines						
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	250	180	380	43
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.4	< 0.4
Chromium	5	mg/kg	13	11	15	9.8
Copper	5	mg/kg	53	46	46	39
Lead	5	mg/kg	12	10	63	8.5
Mercury	0.1	mg/kg	0.2	< 0.1	0.3	< 0.1
Nickel	5	mg/kg	14	12	14	12
Zinc	5	mg/kg	95	81	390	62
% Moisture	1	%	11	7.9	11	9.0

Client Sample ID			TP02_1.2	TP06_0.2	TP06_0.6	TP06_1.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-De08408**	**S18-De08409**	**S18-De08410**	**S18-De08411**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	0.06	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP02_1.2	TP06_0.2	TP06_0.6	TP06_1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08408	S18-De08409	S18-De08410	S18-De08411
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	92	94	85	80
Tetrachloro-m-xylene (surr.)	1	%	59	116	114	116
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP02_1.2	TP06_0.2	TP06_0.6	TP06_1.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08408	S18-De08409	S18-De08410	S18-De08411
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	75	121	111	91
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	43	390	26	25
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.4	14	9.0	8.5
Copper	5	mg/kg	28	53	41	40
Lead	5	mg/kg	14	42	8.6	11
Mercury	0.1	mg/kg	< 0.1	0.3	< 0.1	< 0.1
Nickel	5	mg/kg	10	13	12	12
Zinc	5	mg/kg	52	220	68	73
% Moisture	1	%	9.9	14	6.4	6.1

Client Sample ID			TP07_0.2	TP07_0.6	TP07_1.1	TP11_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08412	S18-De08413	S18-De08414	S18-De08415
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	82	72	101	122
Tetrachloro-m-xylene (surr.)	1	%	117	114	99	110
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP07_0.2	TP07_0.6	TP07_1.1	TP11_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08412	S18-De08413	S18-De08414	S18-De08415
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	112	89	74	69
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	310	40	14	1400
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	13	9.4	18
Copper	5	mg/kg	56	47	46	53
Lead	5	mg/kg	47	12	12	22
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TP07_0.2	TP07_0.6	TP07_1.1	TP11_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08412	S18-De08413	S18-De08414	S18-De08415
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	15	14	13	14
Zinc	5	mg/kg	360	80	70	240
% Moisture	1	%	15	8.2	8.0	15

Client Sample ID			TP11_0.6	TP11_1.1	TP12_0.2	TP12_0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08416	S18-De08417	S18-De08418	S18-De08419
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	64	107	71	74
Tetrachloro-m-xylene (surr.)	1	%	91	107	109	123
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP11_0.6	TP11_1.1	TP12_0.2	TP12_0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08416	S18-De08417	S18-De08418	S18-De08419
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	95	83	83	83
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2

Client Sample ID			TP11_0.6	TP11_1.1	TP12_0.2	TP12_0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08416	S18-De08417	S18-De08418	S18-De08419
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	210	310	1000	120
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	11	16	9.4
Copper	5	mg/kg	53	46	49	42
Lead	5	mg/kg	12	15	22	10
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1
Nickel	5	mg/kg	23	13	13	15
Zinc	5	mg/kg	210	110	190	77
% Moisture	1	%	8.6	8.0	14	5.9

Client Sample ID			TP12_1.1	QC1	QC3	QC4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08420	S18-De08421	S18-De08422	S18-De08423
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP12_1.1	QC1	QC3	QC4
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-De08420**	**S18-De08421**	**S18-De08422**	**S18-De08423**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	114	93	106	111
Tetrachloro-m-xylene (surr.)	1	%	55	98	56	62
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	88	88	99	80
Triazines						
Ametryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP12_1.1	QC1	QC3	QC4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-De08420	S18-De08421	S18-De08422	S18-De08423
Date Sampled			Dec 06, 2018	Dec 06, 2018	Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit				
Triazines						
Simetryn	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Carbamate Pesticides						
Aldicarb	2	mg/kg	< 2	< 2	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2	< 2	< 2
Synthetic Pyrethroids*						
Allethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2	< 2	< 2
Heavy Metals						
Arsenic	2	mg/kg	460	770	1300	180
Cadmium	0.4	mg/kg	< 0.4	2.0	< 0.4	< 0.4
Chromium	5	mg/kg	12	14	17	9.8
Copper	5	mg/kg	45	56	50	43
Lead	5	mg/kg	12	110	19	11
Mercury	0.1	mg/kg	< 0.1	0.8	< 0.1	< 0.1
Nickel	5	mg/kg	13	11	13	17
Zinc	5	mg/kg	110	910	240	81
% Moisture	1	%	9.0	20	16	7.3

Client Sample ID			QC5	QC7
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S18-De08424	S18-De08425
Date Sampled			Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05

Client Sample ID			QC5	QC7
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S18-De08424	S18-De08425
Date Sampled			Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	96	82
Tetrachloro-m-xylene (surr.)	1	%	51	99
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2

Client Sample ID			QC5	QC7
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S18-De08424	S18-De08425
Date Sampled			Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	86	61
Triazines				
Ametryn	0.2	mg/kg	< 0.2	< 0.2
Atraton	0.2	mg/kg	< 0.2	< 0.2
Atrazine	0.2	mg/kg	< 0.2	< 0.2
Prometon	0.2	mg/kg	< 0.2	< 0.2
Prometryn	0.2	mg/kg	< 0.2	< 0.2
Propazine	0.2	mg/kg	< 0.2	< 0.2
Simazine	0.2	mg/kg	< 0.2	< 0.2
Simetryn	0.2	mg/kg	< 0.2	< 0.2
Terbuthylazine	0.2	mg/kg	< 0.2	< 0.2
Terbutryne	0.2	mg/kg	< 0.2	< 0.2
Carbamate Pesticides				
Aldicarb	2	mg/kg	< 2	< 2
Bendiocarb	2	mg/kg	< 2	< 2
Carbaryl	2	mg/kg	< 2	< 2
Carbofuran	2	mg/kg	< 2	< 2
Methomyl	2	mg/kg	< 2	< 2
Oxamyl	2	mg/kg	< 2	< 2
Thiobencarb	2	mg/kg	< 2	< 2
Synthetic Pyrethroids*				
Allethrin*	2	mg/kg	< 2	< 2
Cyfluthrin*	2	mg/kg	< 2	< 2
Cypermethrin (total)*	2	mg/kg	< 2	< 2
Fenvalerate*	2	mg/kg	< 2	< 2
Permethrin	2	mg/kg	< 2	< 2
Phenothrin*	2	mg/kg	< 2	< 2
Resmethrin*	2	mg/kg	< 2	< 2
Tetramethrin*	2	mg/kg	< 2	< 2
Heavy Metals				
Arsenic	2	mg/kg	400	36
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	14	11
Copper	5	mg/kg	50	43
Lead	5	mg/kg	36	9.8
Mercury	0.1	mg/kg	0.3	< 0.1
Nickel	5	mg/kg	13	12
Zinc	5	mg/kg	180	65
% Moisture	1	%	14	8.1

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Dec 13, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Dec 13, 2018	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Triazines	Melbourne	Dec 13, 2018	14 Day
- Method: LTM-ORG-2080			
Carbamate Pesticides	Melbourne	Dec 13, 2018	14 Day
- Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC			
Synthetic Pyrethroids*	Melbourne	Dec 13, 2018	14 Day
- Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV			
Metals M8	Melbourne	Dec 13, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Dec 07, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Site # 23736

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: PROTEN TAMWORTH SCA
Project ID: 610.18456.00100

Order No.:
Report #: 631838
Phone: 02 9428 8100
Fax:

Received: Dec 7, 2018 2:21 PM
Due: Dec 14, 2018
Priority: 5 Day
Contact Name: Junaidi Ibrahim

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	TP01_0.1	Dec 06, 2018		Soil	S18-De08338		X	X	X	X	X	X
2	TP01_0.7	Dec 06, 2018		Soil	S18-De08339		X	X	X	X	X	X
3	TP01_1.2	Dec 06, 2018		Soil	S18-De08340		X	X	X	X	X	X
4	TP16_0.2	Dec 06, 2018		Soil	S18-De08341		X	X	X	X	X	X
5	TP16_0.6	Dec 06, 2018		Soil	S18-De08342		X	X	X	X	X	X
6	TP16_1.1	Dec 06, 2018		Soil	S18-De08343		X	X	X	X	X	X
7	TP02_0.2	Dec 06, 2018		Soil	S18-De08406		X	X	X	X	X	X
8	TP02_0.7	Dec 06, 2018		Soil	S18-De08407		X	X	X	X	X	X
9	TP02_1.2	Dec 06, 2018		Soil	S18-De08408		X	X	X	X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
10	TP06_0.2	Dec 06, 2018		Soil	S18-De08409		X	X	X	X	X	X
11	TP06_0.6	Dec 06, 2018		Soil	S18-De08410		X	X	X	X	X	X
12	TP06_1.1	Dec 06, 2018		Soil	S18-De08411		X	X	X	X	X	X
13	TP07_0.2	Dec 06, 2018		Soil	S18-De08412		X	X	X	X	X	X
14	TP07_0.6	Dec 06, 2018		Soil	S18-De08413		X	X	X	X	X	X
15	TP07_1.1	Dec 06, 2018		Soil	S18-De08414		X	X	X	X	X	X
16	TP11_0.2	Dec 06, 2018		Soil	S18-De08415		X	X	X	X	X	X
17	TP11_0.6	Dec 06, 2018		Soil	S18-De08416		X	X	X	X	X	X
18	TP11_1.1	Dec 06, 2018		Soil	S18-De08417		X	X	X	X	X	X
19	TP12_0.2	Dec 06, 2018		Soil	S18-De08418		X	X	X	X	X	X
20	TP12_0.6	Dec 06, 2018		Soil	S18-De08419		X	X	X	X	X	X
21	TP12_1.1	Dec 06, 2018		Soil	S18-De08420		X	X	X	X	X	X

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Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
22	QC1	Dec 06, 2018		Soil	S18-De08421		X	X	X	X	X	X
23	QC3	Dec 06, 2018		Soil	S18-De08422		X	X	X	X	X	X
24	QC4	Dec 06, 2018		Soil	S18-De08423		X	X	X	X	X	X
25	QC5	Dec 06, 2018		Soil	S18-De08424		X	X	X	X	X	X
26	QC7	Dec 06, 2018		Soil	S18-De08425		X	X	X	X	X	X
27	R01	Dec 06, 2018		Water	S18-De08426					X		
28	R02	Dec 06, 2018		Water	S18-De08427		X	X	X		X	
29	TP17_0.1	Dec 06, 2018		Soil	S18-De08428	X						
30	TP17_0.8	Dec 06, 2018		Soil	S18-De08429	X						
31	TP17_1.2	Dec 06, 2018		Soil	S18-De08430	X						
32	TP03_0.2	Dec 06, 2018		Soil	S18-De08431	X						
33	TP03_0.6	Dec 06, 2018		Soil	S18-De08432	X						

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Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
34	TP03_1.1	Dec 06, 2018		Soil	S18-De08433	X						
35	TP04_0.2	Dec 06, 2018		Soil	S18-De08434	X						
36	TP04_0.7	Dec 06, 2018		Soil	S18-De08435	X						
37	TP04_1.1	Dec 06, 2018		Soil	S18-De08436	X						
38	TP05_0.2	Dec 06, 2018		Soil	S18-De08437	X						
39	TP05_0.6	Dec 06, 2018		Soil	S18-De08438	X						
40	TP05_1.1	Dec 06, 2018		Soil	S18-De08439	X						
41	TP08_0.1	Dec 06, 2018		Soil	S18-De08440	X						
42	TP08_0.5	Dec 06, 2018		Soil	S18-De08441	X						
43	TP08_1.0	Dec 06, 2018		Soil	S18-De08442	X						
44	TP09_0.1	Dec 06, 2018		Soil	S18-De08443	X						
45	TP09_0.5	Dec 06, 2018		Soil	S18-De08444	X						

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Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
46	TP09_0.9	Dec 06, 2018		Soil	S18-De08445	X						
47	TP10_0.1	Dec 06, 2018		Soil	S18-De08446	X						
48	TP10_0.4	Dec 06, 2018		Soil	S18-De08447	X						
49	TP10_0.8	Dec 06, 2018		Soil	S18-De08448	X						
50	TP13_0.2	Dec 06, 2018		Soil	S18-De08449	X						
51	TP13_0.6	Dec 06, 2018		Soil	S18-De08450	X						
52	TP13_1.0	Dec 06, 2018		Soil	S18-De08451	X						
53	TP14_0.2	Dec 06, 2018		Soil	S18-De08452	X						
54	TP14_0.6	Dec 06, 2018		Soil	S18-De08453	X						
55	TP14_1.1	Dec 06, 2018		Soil	S18-De08454	X						
56	TP15_0.2	Dec 06, 2018		Soil	S18-De08455	X						
57	TP15_0.7	Dec 06, 2018		Soil	S18-De08456	X						

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Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
58	TP15_1.2	Dec 06, 2018		Soil	S18-De08457	X						
59	TS	Dec 06, 2018		Soil	S18-De08522	X						
60	TB	Dec 06, 2018		Soil	S18-De08523	X						
61	LAB SPIKE	Dec 06, 2018		Soil	S18-De08524	X						
Test Counts						33	27	27	27	27	27	26

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Triazines							
Ametryn	mg/kg	< 0.2			0.2	Pass	
Atraton	mg/kg	< 0.2			0.2	Pass	
Atrazine	mg/kg	< 0.2			0.2	Pass	
Prometon	mg/kg	< 0.2			0.2	Pass	
Prometryn	mg/kg	< 0.2			0.2	Pass	
Propazine	mg/kg	< 0.2			0.2	Pass	
Simazine	mg/kg	< 0.2			0.2	Pass	
Simetryn	mg/kg	< 0.2			0.2	Pass	
Terbuthylazine	mg/kg	< 0.2			0.2	Pass	
Terbutryne	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Carbamate Pesticides							
Aldicarb	mg/kg	< 2			2	Pass	
Bendiocarb	mg/kg	< 2			2	Pass	
Carbaryl	mg/kg	< 2			2	Pass	
Carbofuran	mg/kg	< 2			2	Pass	
Methomyl	mg/kg	< 2			2	Pass	
Oxamyl	mg/kg	< 2			2	Pass	
Thiobencarb	mg/kg	< 2			2	Pass	
Method Blank							
Synthetic Pyrethroids*							
Allethrin*	mg/kg	< 2			2	Pass	
Cyfluthrin*	mg/kg	< 2			2	Pass	
Cypermethrin (total)*	mg/kg	< 2			2	Pass	
Fenvalerate*	mg/kg	< 2			2	Pass	
Permethrin	mg/kg	< 2			2	Pass	
Phenothrin*	mg/kg	< 2			2	Pass	
Resmethrin*	mg/kg	< 2			2	Pass	
Tetramethrin*	mg/kg	< 2			2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	77			70-130	Pass	
4.4'-DDD	%	71			70-130	Pass	
4.4'-DDE	%	119			70-130	Pass	
4.4'-DDT	%	73			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
a-BHC	%	124			70-130	Pass	
Aldrin	%	112			70-130	Pass	
b-BHC	%	101			70-130	Pass	
d-BHC	%	123			70-130	Pass	
Dieldrin	%	115			70-130	Pass	
Endosulfan I	%	121			70-130	Pass	
Endosulfan II	%	123			70-130	Pass	
Endosulfan sulphate	%	113			70-130	Pass	
Endrin	%	104			70-130	Pass	
Endrin aldehyde	%	118			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-BHC (Lindane)	%	117			70-130	Pass	
Heptachlor	%	86			70-130	Pass	
Heptachlor epoxide	%	116			70-130	Pass	
Hexachlorobenzene	%	128			70-130	Pass	
Methoxychlor	%	99			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	86			70-130	Pass	
Dimethoate	%	76			70-130	Pass	
Ethion	%	104			70-130	Pass	
Fenitrothion	%	100			70-130	Pass	
Methyl parathion	%	100			70-130	Pass	
Mevinphos	%	84			70-130	Pass	
LCS - % Recovery							
Carbamate Pesticides							
Aldicarb	%	110			70-130	Pass	
Bendiocarb	%	98			70-130	Pass	
Carbaryl	%	125			70-130	Pass	
Carbofuran	%	98			70-130	Pass	
Methomyl	%	110			70-130	Pass	
Oxamyl	%	98			70-130	Pass	
Thiobencarb	%	107			70-130	Pass	
LCS - % Recovery							
Synthetic Pyrethroids*							
Allethrin*	%	88			70-130	Pass	
Cyfluthrin*	%	93			70-130	Pass	
Cypermethrin (total)*	%	95			70-130	Pass	
Fenvalerate*	%	96			70-130	Pass	
Permethrin	%	103			70-130	Pass	
Phenothrin*	%	119			70-130	Pass	
Resmethrin*	%	125			70-130	Pass	
Tetramethrin*	%	104			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	112			80-120	Pass	
Copper	%	110			80-120	Pass	
Lead	%	113			80-120	Pass	
Mercury	%	99			75-125	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	105			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Hexachlorobenzene	S18-De11597	NCP	%	130			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M18-De14369	NCP	%	74			70-130	Pass	
4.4'-DDE	M18-De10670	NCP	%	79			70-130	Pass	
4.4'-DDT	M18-De10670	NCP	%	79			70-130	Pass	
Dieldrin	M18-De10670	NCP	%	96			70-130	Pass	
Heptachlor	M18-De10670	NCP	%	98			70-130	Pass	
Methoxychlor	M18-De10670	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	M18-De16675	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S18-De08343	CP	%	96			70-130	Pass	
Ethion	S18-De08343	CP	%	114			70-130	Pass	
Fenitrothion	S18-De08343	CP	%	86			70-130	Pass	
Methyl parathion	S18-De08343	CP	%	75			70-130	Pass	
Mevinphos	S18-De08343	CP	%	91			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S18-De08409	CP	%	120			70-130	Pass	
a-BHC	S18-De08409	CP	%	116			70-130	Pass	
Aldrin	S18-De08409	CP	%	101			70-130	Pass	
b-BHC	S18-De08409	CP	%	111			70-130	Pass	
d-BHC	S18-De08409	CP	%	110			70-130	Pass	
Endosulfan I	S18-De08409	CP	%	116			70-130	Pass	
Endosulfan II	S18-De08409	CP	%	122			70-130	Pass	
Endosulfan sulphate	S18-De08409	CP	%	103			70-130	Pass	
Endrin	S18-De08409	CP	%	109			70-130	Pass	
Endrin aldehyde	S18-De08409	CP	%	108			70-130	Pass	
Endrin ketone	S18-De08409	CP	%	92			70-130	Pass	
g-BHC (Lindane)	S18-De08409	CP	%	112			70-130	Pass	
Heptachlor epoxide	S18-De08409	CP	%	98			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-De08409	CP	%	113			75-125	Pass	
Cadmium	S18-De08409	CP	%	95			75-125	Pass	
Chromium	S18-De08409	CP	%	108			75-125	Pass	
Copper	S18-De08409	CP	%	110			75-125	Pass	
Lead	S18-De08409	CP	%	111			75-125	Pass	
Mercury	S18-De08409	CP	%	102			70-130	Pass	
Nickel	S18-De08409	CP	%	107			75-125	Pass	
Zinc	S18-De08409	CP	%	130			75-125	Fail	Q08
Spike - % Recovery									
Carbamate Pesticides				Result 1					
Aldicarb	S18-De08412	CP	%	98			70-130	Pass	
Bendiocarb	S18-De08412	CP	%	93			70-130	Pass	
Carbaryl	S18-De08412	CP	%	118			70-130	Pass	
Carbofuran	S18-De08412	CP	%	93			70-130	Pass	
Methomyl	S18-De08412	CP	%	97			70-130	Pass	
Oxamyl	S18-De08412	CP	%	81			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Thiobencarb	S18-De08412	CP	%	103			70-130	Pass	
Spike - % Recovery									
Synthetic Pyrethroids*				Result 1					
Cyfluthrin*	S18-De08412	CP	%	92			70-130	Pass	
Cypermethrin (total)*	S18-De08412	CP	%	94			70-130	Pass	
Permethrin	S18-De08412	CP	%	98			70-130	Pass	
Resmethrin*	S18-De08412	CP	%	99			70-130	Pass	
Tetramethrin*	S18-De08412	CP	%	110			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-De08419	CP	%	113			75-125	Pass	
Cadmium	S18-De08419	CP	%	93			75-125	Pass	
Chromium	S18-De08419	CP	%	107			75-125	Pass	
Copper	S18-De08419	CP	%	115			75-125	Pass	
Lead	S18-De08419	CP	%	104			75-125	Pass	
Mercury	S18-De08419	CP	%	97			70-130	Pass	
Nickel	S18-De08419	CP	%	113			75-125	Pass	
Zinc	S18-De08419	CP	%	116			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-De08558	NCP	%	13	13	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-De08342	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-De08342	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S18-De08342	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Diazinon	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S18-De08342	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S18-De08342	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Triazines				Result 1	Result 2	RPD			
Ametryn	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atraton	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atrazine	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometon	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometryn	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Propazine	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simazine	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simetryn	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbuthylazine	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbutryne	S18-De08342	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-De08408	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin ketone	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-De08408	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S18-De08408	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S18-De08408	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S18-De08408	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Triazines				Result 1	Result 2	RPD			
Ametryn	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atraton	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atrazine	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometon	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometryn	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Propazine	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simazine	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simetryn	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbuthylazine	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbutryne	S18-De08408	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-De08408	CP	mg/kg	43	36	18	30%	Pass	
Cadmium	S18-De08408	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-De08408	CP	mg/kg	9.4	8.9	5.0	30%	Pass	
Copper	S18-De08408	CP	mg/kg	28	34	17	30%	Pass	
Lead	S18-De08408	CP	mg/kg	14	12	14	30%	Pass	
Mercury	S18-De08408	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-De08408	CP	mg/kg	10	11	9.0	30%	Pass	
Zinc	S18-De08408	CP	mg/kg	52	60	14	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-De08409	CP	mg/kg	390	400	2.0	30%	Pass	
Cadmium	S18-De08409	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-De08409	CP	mg/kg	14	14	2.0	30%	Pass	
Copper	S18-De08409	CP	mg/kg	53	54	1.0	30%	Pass	
Lead	S18-De08409	CP	mg/kg	42	43	1.0	30%	Pass	
Mercury	S18-De08409	CP	mg/kg	0.3	0.3	6.0	30%	Pass	
Nickel	S18-De08409	CP	mg/kg	13	14	1.0	30%	Pass	
Zinc	S18-De08409	CP	mg/kg	220	220	1.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-De08410	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-De08410	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S18-De08410	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
EPN	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S18-De08410	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S18-De08410	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Triazines				Result 1	Result 2	RPD			
Ametryn	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atraton	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Atrazine	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometon	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Prometryn	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Propazine	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simazine	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Simetryn	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbuthylazine	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbutryne	S18-De08410	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Carbamate Pesticides				Result 1	Result 2	RPD			
Aldicarb	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Bendiocarb	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Carbaryl	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Carbofuran	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Methomyl	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Oxamyl	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Thiobencarb	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Duplicate									
Synthetic Pyrethroids*				Result 1	Result 2	RPD			
Allethrin*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cyfluthrin*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cypermethrin (total)*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Fenvalerate*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Permethrin	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phenothrin*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Resmethrin*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Tetramethrin*	S18-De08411	CP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-De08418	CP	mg/kg	1000	1100	4.0	30%	Pass	
Cadmium	S18-De08418	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-De08418	CP	mg/kg	16	16	<1	30%	Pass	
Copper	S18-De08418	CP	mg/kg	49	47	5.0	30%	Pass	
Lead	S18-De08418	CP	mg/kg	22	23	2.0	30%	Pass	
Mercury	S18-De08418	CP	mg/kg	0.3	0.3	14	30%	Pass	
Nickel	S18-De08418	CP	mg/kg	13	13	1.0	30%	Pass	
Zinc	S18-De08418	CP	mg/kg	190	190	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-De08419	CP	mg/kg	120	120	3.0	30%	Pass	
Cadmium	S18-De08419	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-De08419	CP	mg/kg	9.4	9.9	6.0	30%	Pass	
Copper	S18-De08419	CP	mg/kg	42	45	6.0	30%	Pass	
Lead	S18-De08419	CP	mg/kg	10	11	5.0	30%	Pass	
Mercury	S18-De08419	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-De08419	CP	mg/kg	15	16	6.0	30%	Pass	
Zinc	S18-De08419	CP	mg/kg	77	81	5.0	30%	Pass	

Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

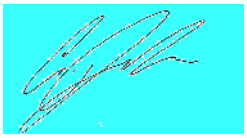
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted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

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

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SLR Consulting
2 Lincoln St
Lane Cove West
NSW 2066

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Junaidi Ibrahim**

Report **631838-W**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 07, 2018

Client Sample ID			**R01**	**R02**
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**S18-De08426**	**S18-De08427**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Chlordanes - Total	0.001	mg/L	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	< 0.0001
a-BHC	0.0001	mg/L	-	< 0.0001
Aldrin	0.0001	mg/L	-	< 0.0001
b-BHC	0.0001	mg/L	-	< 0.0001
d-BHC	0.0001	mg/L	-	< 0.0001
Dieldrin	0.0001	mg/L	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	< 0.0001
Endrin	0.0001	mg/L	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	< 0.0001
Heptachlor	0.0001	mg/L	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	< 0.0001
Toxaphene	0.01	mg/L	-	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	-	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	-	< 0.001
Dibutylchlorendate (surr.)	1	%	-	53
Tetrachloro-m-xylene (surr.)	1	%	-	91
Organophosphorus Pesticides				
Azinphos-methyl	0.002	mg/L	-	< 0.002
Bolstar	0.002	mg/L	-	< 0.002
Chlorfenvinphos	0.002	mg/L	-	< 0.002
Chlorpyrifos	0.02	mg/L	-	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	-	< 0.002
Coumaphos	0.02	mg/L	-	< 0.02
Demeton-S	0.02	mg/L	-	< 0.02

Client Sample ID			R01	R02
Sample Matrix			Water	Water
Eurofins | mgt Sample No.			S18-De08426	S18-De08427
Date Sampled			Dec 06, 2018	Dec 06, 2018
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Demeton-O	0.002	mg/L	-	< 0.002
Diazinon	0.002	mg/L	-	< 0.002
Dichlorvos	0.002	mg/L	-	< 0.002
Dimethoate	0.002	mg/L	-	< 0.002
Disulfoton	0.002	mg/L	-	< 0.002
EPN	0.002	mg/L	-	< 0.002
Ethion	0.002	mg/L	-	< 0.002
Ethoprop	0.002	mg/L	-	< 0.002
Ethyl parathion	0.002	mg/L	-	< 0.002
Fenitrothion	0.002	mg/L	-	< 0.002
Fensulfothion	0.002	mg/L	-	< 0.002
Fenthion	0.002	mg/L	-	< 0.002
Malathion	0.002	mg/L	-	< 0.002
Merphos	0.002	mg/L	-	< 0.002
Methyl parathion	0.002	mg/L	-	< 0.002
Mevinphos	0.002	mg/L	-	< 0.002
Monocrotophos	0.002	mg/L	-	< 0.002
Naled	0.002	mg/L	-	< 0.002
Omethoate	0.002	mg/L	-	< 0.002
Phorate	0.002	mg/L	-	< 0.002
Pirimiphos-methyl	0.02	mg/L	-	< 0.02
Pyrazophos	0.002	mg/L	-	< 0.002
Ronnel	0.002	mg/L	-	< 0.002
Terbufos	0.002	mg/L	-	< 0.002
Tetrachlorvinphos	0.002	mg/L	-	< 0.002
Tokuthion	0.002	mg/L	-	< 0.002
Trichloronate	0.002	mg/L	-	< 0.002
Triphenylphosphate (surr.)	1	%	-	58
Triazines				
Ametryn	0.002	mg/L	-	< 0.002
Atraton	0.002	mg/L	-	< 0.002
Atrazine	0.002	mg/L	-	< 0.002
Prometon	0.002	mg/L	-	< 0.002
Prometryn	0.002	mg/L	-	< 0.002
Propazine	0.002	mg/L	-	< 0.002
Simazine	0.002	mg/L	-	< 0.002
Simetryn	0.002	mg/L	-	< 0.002
Terbuthylazine	0.002	mg/L	-	< 0.002
Terbutryne	0.002	mg/L	-	< 0.002
Carbamate Pesticides				
Aldicarb	0.01	mg/L	-	< 0.01
Bendiocarb	0.01	mg/L	-	< 0.01
Carbaryl	0.01	mg/L	-	< 0.01
Carbofuran	0.01	mg/L	-	< 0.01
Methomyl	0.01	mg/L	-	< 0.01
Oxamyl	0.01	mg/L	-	< 0.01
Thiobencarb	0.01	mg/L	-	< 0.01

Client Sample ID			R01	R02
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**S18-De08426**	**S18-De08427**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit		
Synthetic Pyrethroids*				
Allethrin*	0.2	mg/L	-	< 0.2
Cyfluthrin*	0.2	mg/L	-	< 0.2
Cypermethrin (total)*	0.2	mg/L	-	< 0.2
Fenvalerate*	0.2	mg/L	-	< 0.2
Permethrin	0.2	mg/L	-	< 0.2
Phenothrin*	0.2	mg/L	-	< 0.2
Resmethrin*	0.2	mg/L	-	< 0.2
Tetramethrin*	0.2	mg/L	-	< 0.2
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	-
Copper	0.001	mg/L	< 0.001	-
Lead	0.001	mg/L	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	-
Zinc	0.005	mg/L	< 0.005	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B14			
Organochlorine Pesticides	Melbourne	Dec 12, 2018	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Dec 12, 2018	7 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Triazines	Melbourne	Dec 12, 2018	7 Day
- Method: LTM-ORG-2080			
Carbamate Pesticides	Melbourne	Dec 18, 2018	7 Day
- Method: LTM-ORG-2290 Carbamates in waters and soils by HPLC			
Synthetic Pyrethroids*	Melbourne	Dec 08, 2018	7 Day
- Method: LTM-ORG-2170 Synthetic Pyrethroids by HPLC-UV			
Metals M8	Melbourne	Dec 08, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Site # 23736

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: PROTEN TAMWORTH SCA
Project ID: 610.18456.00100

Order No.:
Report #: 631838
Phone: 02 9428 8100
Fax:

Received: Dec 7, 2018 2:21 PM
Due: Dec 14, 2018
Priority: 5 Day
Contact Name: Junaidi Ibrahim

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	TP01_0.1	Dec 06, 2018		Soil	S18-De08338		X	X	X	X	X	X
2	TP01_0.7	Dec 06, 2018		Soil	S18-De08339		X	X	X	X	X	X
3	TP01_1.2	Dec 06, 2018		Soil	S18-De08340		X	X	X	X	X	X
4	TP16_0.2	Dec 06, 2018		Soil	S18-De08341		X	X	X	X	X	X
5	TP16_0.6	Dec 06, 2018		Soil	S18-De08342		X	X	X	X	X	X
6	TP16_1.1	Dec 06, 2018		Soil	S18-De08343		X	X	X	X	X	X
7	TP02_0.2	Dec 06, 2018		Soil	S18-De08406		X	X	X	X	X	X
8	TP02_0.7	Dec 06, 2018		Soil	S18-De08407		X	X	X	X	X	X
9	TP02_1.2	Dec 06, 2018		Soil	S18-De08408		X	X	X	X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
10	TP06_0.2	Dec 06, 2018		Soil	S18-De08409		X	X	X	X	X	X
11	TP06_0.6	Dec 06, 2018		Soil	S18-De08410		X	X	X	X	X	X
12	TP06_1.1	Dec 06, 2018		Soil	S18-De08411		X	X	X	X	X	X
13	TP07_0.2	Dec 06, 2018		Soil	S18-De08412		X	X	X	X	X	X
14	TP07_0.6	Dec 06, 2018		Soil	S18-De08413		X	X	X	X	X	X
15	TP07_1.1	Dec 06, 2018		Soil	S18-De08414		X	X	X	X	X	X
16	TP11_0.2	Dec 06, 2018		Soil	S18-De08415		X	X	X	X	X	X
17	TP11_0.6	Dec 06, 2018		Soil	S18-De08416		X	X	X	X	X	X
18	TP11_1.1	Dec 06, 2018		Soil	S18-De08417		X	X	X	X	X	X
19	TP12_0.2	Dec 06, 2018		Soil	S18-De08418		X	X	X	X	X	X
20	TP12_0.6	Dec 06, 2018		Soil	S18-De08419		X	X	X	X	X	X
21	TP12_1.1	Dec 06, 2018		Soil	S18-De08420		X	X	X	X	X	X

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Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
22	QC1	Dec 06, 2018		Soil	S18-De08421		X	X	X	X	X	X
23	QC3	Dec 06, 2018		Soil	S18-De08422		X	X	X	X	X	X
24	QC4	Dec 06, 2018		Soil	S18-De08423		X	X	X	X	X	X
25	QC5	Dec 06, 2018		Soil	S18-De08424		X	X	X	X	X	X
26	QC7	Dec 06, 2018		Soil	S18-De08425		X	X	X	X	X	X
27	R01	Dec 06, 2018		Water	S18-De08426					X		
28	R02	Dec 06, 2018		Water	S18-De08427		X	X	X		X	
29	TP17_0.1	Dec 06, 2018		Soil	S18-De08428	X						
30	TP17_0.8	Dec 06, 2018		Soil	S18-De08429	X						
31	TP17_1.2	Dec 06, 2018		Soil	S18-De08430	X						
32	TP03_0.2	Dec 06, 2018		Soil	S18-De08431	X						
33	TP03_0.6	Dec 06, 2018		Soil	S18-De08432	X						

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Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
34	TP03_1.1	Dec 06, 2018		Soil	S18-De08433	X						
35	TP04_0.2	Dec 06, 2018		Soil	S18-De08434	X						
36	TP04_0.7	Dec 06, 2018		Soil	S18-De08435	X						
37	TP04_1.1	Dec 06, 2018		Soil	S18-De08436	X						
38	TP05_0.2	Dec 06, 2018		Soil	S18-De08437	X						
39	TP05_0.6	Dec 06, 2018		Soil	S18-De08438	X						
40	TP05_1.1	Dec 06, 2018		Soil	S18-De08439	X						
41	TP08_0.1	Dec 06, 2018		Soil	S18-De08440	X						
42	TP08_0.5	Dec 06, 2018		Soil	S18-De08441	X						
43	TP08_1.0	Dec 06, 2018		Soil	S18-De08442	X						
44	TP09_0.1	Dec 06, 2018		Soil	S18-De08443	X						
45	TP09_0.5	Dec 06, 2018		Soil	S18-De08444	X						

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Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
46	TP09_0.9	Dec 06, 2018		Soil	S18-De08445	X						
47	TP10_0.1	Dec 06, 2018		Soil	S18-De08446	X						
48	TP10_0.4	Dec 06, 2018		Soil	S18-De08447	X						
49	TP10_0.8	Dec 06, 2018		Soil	S18-De08448	X						
50	TP13_0.2	Dec 06, 2018		Soil	S18-De08449	X						
51	TP13_0.6	Dec 06, 2018		Soil	S18-De08450	X						
52	TP13_1.0	Dec 06, 2018		Soil	S18-De08451	X						
53	TP14_0.2	Dec 06, 2018		Soil	S18-De08452	X						
54	TP14_0.6	Dec 06, 2018		Soil	S18-De08453	X						
55	TP14_1.1	Dec 06, 2018		Soil	S18-De08454	X						
56	TP15_0.2	Dec 06, 2018		Soil	S18-De08455	X						
57	TP15_0.7	Dec 06, 2018		Soil	S18-De08456	X						

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Sample Detail						HOLD	Triazines	Carbamate Pesticides	Synthetic Pyrethroids*	Metals M8	Eurofins | mgt Suite B14	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
58	TP15_1.2	Dec 06, 2018		Soil	S18-De08457	X						
59	TS	Dec 06, 2018		Soil	S18-De08522	X						
60	TB	Dec 06, 2018		Soil	S18-De08523	X						
61	LAB SPIKE	Dec 06, 2018		Soil	S18-De08524	X						
Test Counts						33	27	27	27	27	27	26

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Triazines							
Ametryn	mg/L	< 0.002			0.002	Pass	
Atraton	mg/L	< 0.002			0.002	Pass	
Atrazine	mg/L	< 0.002			0.002	Pass	
Prometon	mg/L	< 0.002			0.002	Pass	
Prometryn	mg/L	< 0.002			0.002	Pass	
Propazine	mg/L	< 0.002			0.002	Pass	
Simazine	mg/L	< 0.002			0.002	Pass	
Simetryn	mg/L	< 0.002			0.002	Pass	
Terbuthylazine	mg/L	< 0.002			0.002	Pass	
Terbutryne	mg/L	< 0.002			0.002	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	90			70-130	Pass	
4.4'-DDD	%	91			70-130	Pass	
4.4'-DDE	%	113			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-BHC	%	101			70-130	Pass	
Aldrin	%	104			70-130	Pass	
b-BHC	%	104			70-130	Pass	
d-BHC	%	108			70-130	Pass	
Dieldrin	%	95			70-130	Pass	
Endosulfan I	%	98			70-130	Pass	
Endosulfan II	%	89			70-130	Pass	
Endosulfan sulphate	%	71			70-130	Pass	
Endrin	%	83			70-130	Pass	
Endrin aldehyde	%	77			70-130	Pass	
Endrin ketone	%	72			70-130	Pass	
g-BHC (Lindane)	%	106			70-130	Pass	
Heptachlor	%	84			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	112			70-130	Pass	
Methoxychlor	%	77			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dimethoate	%	73			70-130	Pass	
Ethion	%	109			70-130	Pass	
Fenitrothion	%	94			70-130	Pass	
Methyl parathion	%	94			70-130	Pass	
Mevinphos	%	83			70-130	Pass	
LCS - % Recovery							
Triazines							
Prometryn	%	113			75-125	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	87			80-120	Pass	
Cadmium	%	83			80-120	Pass	
Chromium	%	85			80-120	Pass	
Copper	%	87			80-120	Pass	
Lead	%	86			80-120	Pass	
Mercury	%	102			75-125	Pass	
Nickel	%	87			80-120	Pass	
Zinc	%	88			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-De10416	NCP	%	89			75-125	Pass	
Cadmium	M18-De10416	NCP	%	94			75-125	Pass	
Chromium	M18-De10416	NCP	%	93			75-125	Pass	
Copper	M18-De10416	NCP	%	92			75-125	Pass	
Lead	M18-De10416	NCP	%	94			75-125	Pass	
Mercury	M18-De10416	NCP	%	92			70-130	Pass	
Nickel	M18-De10416	NCP	%	92			75-125	Pass	
Zinc	M18-De10416	NCP	%	94			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-De10416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M18-De10416	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M18-De10416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M18-De10416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M18-De10416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M18-De10416	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M18-De10416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M18-De10416	NCP	mg/L	0.028	0.030	5.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-De04616	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan sulphate	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	S18-De04616	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	B18-De12402	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos-methyl	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	B18-De12402	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	B18-De12402	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-O	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	B18-De12402	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Triazines				Result 1	Result 2	RPD			
Ametryn	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Atraton	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Atrazine	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Prometon	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Prometryn	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Propazine	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Simazine	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Triazines				Result 1	Result 2	RPD			
Simetryn	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbuthylazine	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbutryne	B18-De12402	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Comments

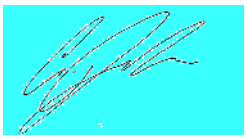
Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

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

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

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NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Ben Dewhurst**

Report **633738-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 19, 2018

Client Sample ID			**TP03_0.2**	**TP03_0.6**	**TP03_1.1**	**TP08_0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-De25159**	**M18-De25160**	**M18-De25161**	**M18-De25162**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	290	17	17	130
% Moisture	1	%	14	12	8.5	16

Client Sample ID			**TP08_0.5**	**TP08_1.0**	**TP13_0.2**	**TP13_0.6**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-De25163**	**M18-De25164**	**M18-De25165**	**M18-De25166**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	30	13	790	100
% Moisture	1	%	9.2	9.7	16	7.8

Client Sample ID			**TP13_1.0**	**TP17_0.1**	**TP17_0.8**	**TP17_1.2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-De25167**	**M18-De25168**	**M18-De25169**	**M18-De25170**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	130	570	35	15
% Moisture	1	%	7.8	12	7.7	7.3

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Dec 19, 2018	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Dec 19, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

eurofins | mgt

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Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: PROTEN TAMWORTH SCA
Project ID: 610.18456.00100

Order No.:
Report #: 633738
Phone: 02 9428 8100
Fax:

Received: Dec 19, 2018 10:43 AM
Due: Dec 21, 2018
Priority: 2 Day
Contact Name: Ben Dewhurst

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TP03_0.2	Dec 06, 2018		Soil	M18-De25159	X	X
2	TP03_0.6	Dec 06, 2018		Soil	M18-De25160	X	X
3	TP03_1.1	Dec 06, 2018		Soil	M18-De25161	X	X
4	TP08_0.1	Dec 06, 2018		Soil	M18-De25162	X	X
5	TP08_0.5	Dec 06, 2018		Soil	M18-De25163	X	X
6	TP08_1.0	Dec 06, 2018		Soil	M18-De25164	X	X
7	TP13_0.2	Dec 06, 2018		Soil	M18-De25165	X	X
8	TP13_0.6	Dec 06, 2018		Soil	M18-De25166	X	X
9	TP13_1.0	Dec 06, 2018		Soil	M18-De25167	X	X

eurofins | mgt

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: PROTEN TAMWORTH SCA
Project ID: 610.18456.00100

Order No.:
Report #: 633738
Phone: 02 9428 8100
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Received: Dec 19, 2018 10:43 AM
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Contact Name: Ben Dewhurst

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
10	TP17_0.1	Dec 06, 2018		Soil	M18-De25168	X	X
11	TP17_0.8	Dec 06, 2018		Soil	M18-De25169	X	X
12	TP17_1.2	Dec 06, 2018		Soil	M18-De25170	X	X
Test Counts						12	12

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	93			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-De25162	CP	%	94			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-De25159	CP	%	14	13	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-De25161	CP	mg/kg	17	17	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-De25162	CP	mg/kg	130	130	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-De25169	CP	%	7.7	7.3	5.0	30%	Pass	

Comments

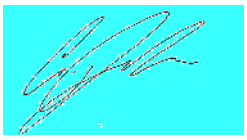
Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

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

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

SLR Consulting
2 Lincoln St
Lane Cove West
NSW 2066

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Ben Dewhurst**

Report **634417-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Dec 21, 2018

Client Sample ID			**TP04_0.2**	**TP04_0.7**	**TP04_1.1**	**TP09_0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-De30955**	**M18-De30956**	**M18-De30957**	**M18-De30958**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	140	20	3.6	39
% Moisture	1	%	14	12	5.6	16

Client Sample ID			**TP09_0.5**	**TP09_0.9**	**TP14_0.2**	**TP14_0.6**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M18-De30959**	**M18-De30960**	**M18-De30961**	**M18-De30962**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	7.2	2.3	490	140
% Moisture	1	%	8.8	6.1	13	6.2

Client Sample ID			**TP14_1.1**
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**M18-De30963**
Date Sampled			**Dec 06, 2018**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	21
% Moisture	1	%	6.7

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Dec 27, 2018	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Dec 27, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

eurofins | mgt

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: PROTEN TAMWORTH SCA
Project ID: 610.18456.00100

Order No.:
Report #: 634417
Phone: 02 9428 8100
Fax:

Received: Dec 21, 2018 11:45 AM
Due: Jan 2, 2019
Priority: 3 Day
Contact Name: Ben Dewhurst

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TP04_0.2	Dec 06, 2018		Soil	M18-De30955	X	X
2	TP04_0.7	Dec 06, 2018		Soil	M18-De30956	X	X
3	TP04_1.1	Dec 06, 2018		Soil	M18-De30957	X	X
4	TP09_0.1	Dec 06, 2018		Soil	M18-De30958	X	X
5	TP09_0.5	Dec 06, 2018		Soil	M18-De30959	X	X
6	TP09_0.9	Dec 06, 2018		Soil	M18-De30960	X	X
7	TP14_0.2	Dec 06, 2018		Soil	M18-De30961	X	X
8	TP14_0.6	Dec 06, 2018		Soil	M18-De30962	X	X
9	TP14_1.1	Dec 06, 2018		Soil	M18-De30963	X	X

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NATA # 1261 Site # 20794

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

Company Name:	SLR Consulting (Sydney)	**Order No.:**		**Received:**	Dec 21, 2018 11:45 AM
Address:	2 Lincoln St Lane Cove West NSW 2066	**Report #:**	634417	**Due:**	Jan 2, 2019
		Phone:	02 9428 8100	**Priority:**	3 Day
		Fax:		**Contact Name:**	Ben Dewhurst
Project Name:	PROTEN TAMWORTH SCA				
Project ID:	610.18456.00100				

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail	Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X
Sydney Laboratory - NATA Site # 18217		
Brisbane Laboratory - NATA Site # 20794		
Perth Laboratory - NATA Site # 23736		
Test Counts	9	9

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	114			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-De30959	CP	%	133			75-125	Fail	Q08
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-De30957	CP	%	5.6	6.2	10	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-De30958	CP	mg/kg	39	40	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-De30959	CP	mg/kg	7.2	7.8	8.0	30%	Pass	

Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

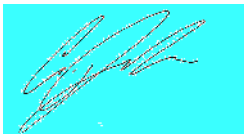
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted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

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis

SLR Consulting
2 Lincoln St
Lane Cove West
NSW 2066

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Ben Dewhurst**

Report **634849-S**
Project name PROTEN TAMWORTH SCA
Project ID 610.18456.00100
Received Date Jan 07, 2019

Client Sample ID			**TP05_0.2**	**TP05_0.6**	**TP05_1.1**	**TP15_0.2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**M19-Ja01585**	**M19-Ja01586**	**M19-Ja01587**	**M19-Ja01588**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	62	6.3	5.0	190
% Moisture	1	%	15	9.0	6.9	11

Client Sample ID			**TP15_0.7**	**TP15_1.2**
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**M19-Ja01589**	**M19-Ja01590**
Date Sampled			**Dec 06, 2018**	**Dec 06, 2018**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	19	19
% Moisture	1	%	8.3	7.9

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Jan 08, 2019	180 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jan 07, 2019	14 Day
- Method: LTM-GEN-7080 Moisture			

eurofins | mgt

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NATA # 1261
Site # 23736

Company Name: SLR Consulting (Sydney)
Address: 2 Lincoln St
Lane Cove West
NSW 2066

Project Name: PROTEN TAMWORTH SCA
Project ID: 610.18456.00100

Order No.:
Report #: 634849
Phone: 02 9428 8100
Fax:

Received: Jan 7, 2019 9:54 AM
Due: Jan 10, 2019
Priority: 3 Day
Contact Name: Ben Dewhurst

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TP05_0.2	Dec 06, 2018		Soil	M19-Ja01585	X	X
2	TP05_0.6	Dec 06, 2018		Soil	M19-Ja01586	X	X
3	TP05_1.1	Dec 06, 2018		Soil	M19-Ja01587	X	X
4	TP15_0.2	Dec 06, 2018		Soil	M19-Ja01588	X	X
5	TP15_0.7	Dec 06, 2018		Soil	M19-Ja01589	X	X
6	TP15_1.2	Dec 06, 2018		Soil	M19-Ja01590	X	X
Test Counts						6	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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

QC Data General Comments

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

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	100			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M19-Ja01588	CP	%	173			75-125	Fail	Q08
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M19-Ja01559	NCP	%	26	27	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M19-Ja01587	CP	mg/kg	5.0	5.0	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M19-Ja01588	CP	mg/kg	190	200	2.0	30%	Pass	

Comments

Eurofins | mgt accreditation number 1261, corporate site 1254 and 14271 is currently in progress of a controlled transition to a new custom built location at 6 Monterey Road, Dandenong South, Victoria 3175. All results on this report denoted as being performed by Eurofins | mgt 2-5 Kingston Town Close, Oakleigh Victoria 3166 corporate site 1254, will have been performed on either Oakleigh or new Dandenong South site.

Sample Integrity

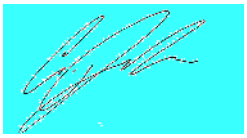
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted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

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Andrew Black	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1837035**	Page	: 1 of 6
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: JUNAIDI IBRAHIM	Contact	: Tyler Cachia
Address	: PO BOX 176 2/2 LINCOLN ST LANECOVE NSW, AUSTRALIA 1595	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 610.18456.00100 PoTen Tamworth SCA	Date Samples Received	: 10-Dec-2018 11:18
Order number	:	Date Analysis Commenced	: 21-Dec-2018
C-O-C number	: ----	Issue Date	: 03-Jan-2019 15:42
Sampler	: ----		
Site	: ----		
Quote number	: EN/333 Secondary work BQ		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

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.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Diana Mesa	2IC Organic Chemist	Brisbane Organics, Stafford, QLD
Ivan Taylor	Analyst	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.
~ = Indicates an estimated value.

- EP094: The LOR for 'QC6' has been raised due to spectral interference.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC2	QC6	----	----	----
			Client sampling date / time	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1837035-001	ES1837035-002	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**19.4**	**13.3**	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**623**	**354**	----	----	----
Cadmium	7440-43-9	1	mg/kg	**2**	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	**11**	**11**	----	----	----
Copper	7440-50-8	5	mg/kg	**44**	**43**	----	----	----
Lead	7439-92-1	5	mg/kg	**107**	**43**	----	----	----
Nickel	7440-02-0	2	mg/kg	**8**	**11**	----	----	----
Zinc	7440-66-6	5	mg/kg	**839**	**243**	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.8**	**0.3**	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC2	QC6	----	----	----
				Client sampling date / time	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1837035-001	ES1837035-002	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	----	----
EP094A: Synthetic Pyrethroids									
Bioresmethrin	28434-01-07	0.05	mg/kg		<0.05	<0.05	----	----	----
Bifenthrin	82657-04-3	0.05	mg/kg		<0.05	<0.05	----	----	----
Phenothrin	26002-80-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Lambda-cyhalothrin	68085-85-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Permethrin	52645-53-1	0.05	mg/kg		<0.05	<0.05	----	----	----
Cyfluthrin	68359-37-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Cypermethrin	52315-07-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenvalverate & Esfenvalerate	51630-58-1/66230-04-	0.05	mg/kg		<0.05	<0.18	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC2	QC6	----	----	----
				Client sampling date / time	06-Dec-2018 00:00	06-Dec-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1837035-001	ES1837035-002	--------	--------	--------
					Result	Result	----	----	----
EP094A: Synthetic Pyrethroids - Continued									
Deltamethrin & Tralomethrin	62229-77-0/66841-25-	0.05	mg/kg		<0.05	<0.05	----	----	----
Allethrin	584-79-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Transfluthrin	118712-89-3	0.05	mg/kg		<0.05	<0.05	----	----	----
Tetramethrin	7696-12-0	0.05	mg/kg		<0.05	<0.05	----	----	----
Tau-fluvalinate	102851-06-9	0.05	mg/kg		<0.05	<0.05	----	----	----
EP094B: Synergist									
Piperonyl Butoxide	63993-73-7	0.05	mg/kg		<0.05	<0.05	----	----	----
EP201: Carbamate Pesticides by LCMS									
Oxamyl	23135-22-0	0.02	mg/kg		<0.02	<0.02	----	----	----
Methomyl	16752-77-5	0.02	mg/kg		<0.02	<0.02	----	----	----
3-Hydroxy Carbofuran	16655-82-6	0.02	mg/kg		<0.02	<0.02	----	----	----
Aldicarb	116-06-3	0.02	mg/kg		<0.02	<0.02	----	----	----
Bendiocarb	22781-23-3	0.02	mg/kg		<0.02	<0.02	----	----	----
Thiodicarb	59669-26-0	0.02	mg/kg		<0.02	<0.02	----	----	----
Carbofuran	1563-66-2	0.02	mg/kg		<0.02	<0.02	----	----	----
Carbaryl	63-25-2	0.02	mg/kg		<0.02	<0.02	----	----	----
Methiocarb	2032-65-7	0.02	mg/kg		<0.02	<0.02	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**64.8**	**85.2**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**62.9**	**83.8**	----	----	----
EP094S: Pesticide Surrogate									
DEF	78-48-8	0.05	%		**108**	**108**	----	----	----
EP201S: Carbamate Surrogate									
4-Bromo-3.5-dimethylphenyl-N-methylcarbamate	672-99-1	0.02	%		**82.5**	**92.1**	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP094S: Pesticide Surrogate			
DEF	78-48-8	10	110
EP201S: Carbamate Surrogate			
4-Bromo-3.5-dimethylphenyl-N-methylcarbamate	672-99-1	59	137

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1832597**	Page	: 1 of 6
Client	: **SLR Consulting Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: JUNAIDI IBRAHIM	Contact	: Tyler Cachia
Address	: PO BOX 176 2/2 LINCOLN ST LANECOVE NSW, AUSTRALIA 1595	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 610.18456 DSI ProTen Tamworth	Date Samples Received	: 01-Nov-2018 15:23
Order number	:	Date Analysis Commenced	: 05-Nov-2018
C-O-C number	: ----	Issue Date	: 08-Nov-2018 16:30
Sampler	: Junaidi Ibrahim		
Site	:		
Quote number	: EN/032/17		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

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.

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Diana Mesa	2IC Organic Chemist	Brisbane Organics, Stafford, QLD
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
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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.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC2	----	----	----	----
				Client sampling date / time	30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832597-001	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**16.3**	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**7**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**17**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**48**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**13**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**16**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**63**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
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	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC2	----	----	----	----
				Client sampling date / time	30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832597-001	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
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**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
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	----	----	----	----
EP068C: Triazines									
Atrazine	1912-24-9	0.05	mg/kg		<0.05	----	----	----	----
Simazine	122-34-9	0.05	mg/kg		<0.05	----	----	----	----
EP094A: Synthetic Pyrethroids									
Bioresmethrin	28434-01-07	0.05	mg/kg		<0.05	----	----	----	----
Bifenthrin	82657-04-3	0.05	mg/kg		<0.05	----	----	----	----
Phenothrin	26002-80-2	0.05	mg/kg		<0.05	----	----	----	----
Lambda-cyhalothrin	68085-85-8	0.05	mg/kg		<0.05	----	----	----	----
Permethrin	52645-53-1	0.05	mg/kg		<0.05	----	----	----	----
Cyfluthrin	68359-37-5	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC2	----	----	----	----
				Client sampling date / time	30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832597-001	--------	--------	--------	--------
					Result	----	----	----	----
EP094A: Synthetic Pyrethroids - Continued									
Cypermethrin	52315-07-8	0.05	mg/kg		<0.05	----	----	----	----
Fenvalverate & Esfenvalerate	51630-58-1/66230-04-	0.05	mg/kg		<0.05	----	----	----	----
Deltamethrin & Tralomethrin	62229-77-0/66841-25-	0.05	mg/kg		<0.05	----	----	----	----
Allethrin	584-79-2	0.05	mg/kg		<0.05	----	----	----	----
Transfluthrin	118712-89-3	0.05	mg/kg		<0.05	----	----	----	----
Tetramethrin	7696-12-0	0.05	mg/kg		<0.05	----	----	----	----
Tau-fluvalinate	102851-06-9	0.05	mg/kg		<0.05	----	----	----	----
EP094B: Synergist									
Piperonyl Butoxide	63993-73-7	0.05	mg/kg		<0.05	----	----	----	----
EP201: Carbamate Pesticides by LCMS									
Oxamyl	23135-22-0	0.02	mg/kg		<0.02	----	----	----	----
Methomyl	16752-77-5	0.02	mg/kg		<0.02	----	----	----	----
3-Hydroxy Carbofuran	16655-82-6	0.02	mg/kg		<0.02	----	----	----	----
Aldicarb	116-06-3	0.02	mg/kg		<0.02	----	----	----	----
Bendiocarb	22781-23-3	0.02	mg/kg		<0.02	----	----	----	----
Thiodicarb	59669-26-0	0.02	mg/kg		<0.02	----	----	----	----
Carbofuran	1563-66-2	0.02	mg/kg		<0.02	----	----	----	----
Carbaryl	63-25-2	0.02	mg/kg		<0.02	----	----	----	----
Methiocarb	2032-65-7	0.02	mg/kg		<0.02	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**71.6**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**74.8**	----	----	----	----
EP094S: Pesticide Surrogate									
DEF	78-48-8	0.05	%		**117**	----	----	----	----
EP201S: Carbamate Surrogate									
4-Bromo-3.5-dimethylphenyl-N-m ethylcarbamate	672-99-1	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP094S: Pesticide Surrogate			
DEF	78-48-8	10	110
EP201S: Carbamate Surrogate			
4-Bromo-3.5-dimethylphenyl-N-methylcarbamate	672-99-1	59	137

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Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix E

Unexpected Contamination Procedure

Unexpected Finds Procedure - Contamination
Rushes Creek Poultry Production Farm
Rushes Creek Road, Rushes Creek, NSW

1 Introduction

This Unexpected Finds Procedure (UFP – contamination) forms part of the Construction Environmental Management Plan (CEMP) for the proposed poultry production farm located at Rushes Creek Road, Rushes Creek, NSW (the site).

1.1 Background

The DSI titled 'Detailed Site Investigation Proposed Poultry Production Farm Rushes Creek Road, Rushes Creek NSW' dated February 2019 (SLR 2019) identified a small, localised area of arsenic impacted shallow soils at the site. The arsenic impacted soils were considered to be associated with the former sheep dip at the site and required management in accordance with the Remedial Action Plan (RAP) approved by the NSW Department of Planning, Industry and Environment.

1.2 Purpose

This procedure details the actions to be taken in the event that potentially contaminated soil or material is unexpectedly encountered during the construction of the poultry farm (the Project). This procedure has been prepared to address the requirements of Condition B50 of the project approval (SSD 7704) granted by the Minister for Planning and Public Spaces on 16 April 2020, which states:

"*Prior to the commencement of earthworks, the Applicant must revise the unexpected contamination procedure in consultation with the Site Auditor to ensure that potentially contaminated material (including the Sheep Holding Shed) is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition C2 and must ensure appropriate management of any material that is identified as contaminated*".

1.3 Scope

This procedure applies to all work undertaken as part of the Project, where examples of Unexpected Finds may include:

- Buried metal drums
- Redundant services made or treated with hazardous materials
- Potential Asbestos Containing Material
- Building and demolition waste

2 Procedure

If any suspected or potentially contaminated material (excluding the known arsenic impacted soil being remediated under the approved RAP) is encountered during the works, then the steps presented in **Figure 1** must be implemented as detailed below.

2.1 Step 1 – Stop Work

1. Immediately STOP ALL WORK within the vicinity of the actual or potentially contaminated land. Further to the examples of potentially contaminated material in Section 1.3, this may also include stained or discoloured or odorous soils.
    - Stopping works allows effective risk assessment (of potential risks to human health, potential for environmental pollution, potential changes to the construction methodology and changes to the environmental management procedures) and appropriate control review to take place (in consultation with the Construction Site Supervisor to review if the procedures in the CEMP adequate to address the identified risks)
2. Immediately notify the Construction Site Supervisor, who will promptly notify the National Construction Manager and where appropriate the relevant Authorities of the find.
    - Once works have stopped, an environmental consultant experienced in contaminated land management should be contacted within 2 hours to discuss inspecting the material/work area
3. Establish an exclusion zone around the area within 24 hours. The exclusion zone should include fencing (orange barrier mesh or temporary fencing) setback from the actual or potentially contaminated land so that workers cannot enter the area to touch or smell the material. The exclusion zone should be marked as an Exclusion Zone.
4. Recommence works in an alternate area, where practicable.

2.2 Step 2 – Assess

1. The Construction Site Supervisor will evaluate the situation and, if considered necessary, commission a suitably qualified contamination specialist to undertake a contamination investigation in the area of the find. The Site Auditor should also be notified if a contamination investigation is required.
2. A report of the investigation will be prepared to determine the nature, extent and degree of any contamination, and to advise on the need for remediation or other action.
    - The level of reporting must be appropriate for the identified contamination in accordance with relevant NSW Environment Protection Authority (EPA) guidelines, including Contaminated Land Guidelines: Consultants Reporting on Contaminated Land (EPA, 2020). The report should also assess the requirement to notify the EPA.

2.3 Step 3 - Act

Depending on the findings of the Contamination Investigation:

1. Following discussion with the Site Auditor. Manage the unexpected find if the Contamination Investigation confirms the presence of contamination. This may include:
    - Classification of the material for offsite disposal at a licensed facility as per the Waste Classification Guidelines (EPA 2014).

- Preparation of an addendum to the existing Remedial Action Plan for the site, in order to treat the material onsite. Carry out remediation of the contaminated material including validation of the material in accordance with NSW EPA guidelines.
- Recommence works once remedial works have been implemented and validation received.

2. Recommence works if the Contamination Investigation confirms that the contamination does not to pose a risk to human health and / or the environment.

2.4 Step 4 - Monitor

Incorporate remedial actions into specific Safe Work Method Statements (SWMS), Environmental Work Method Statements (EWMS) and included in Toolbox discussions with the project team and subcontractors.

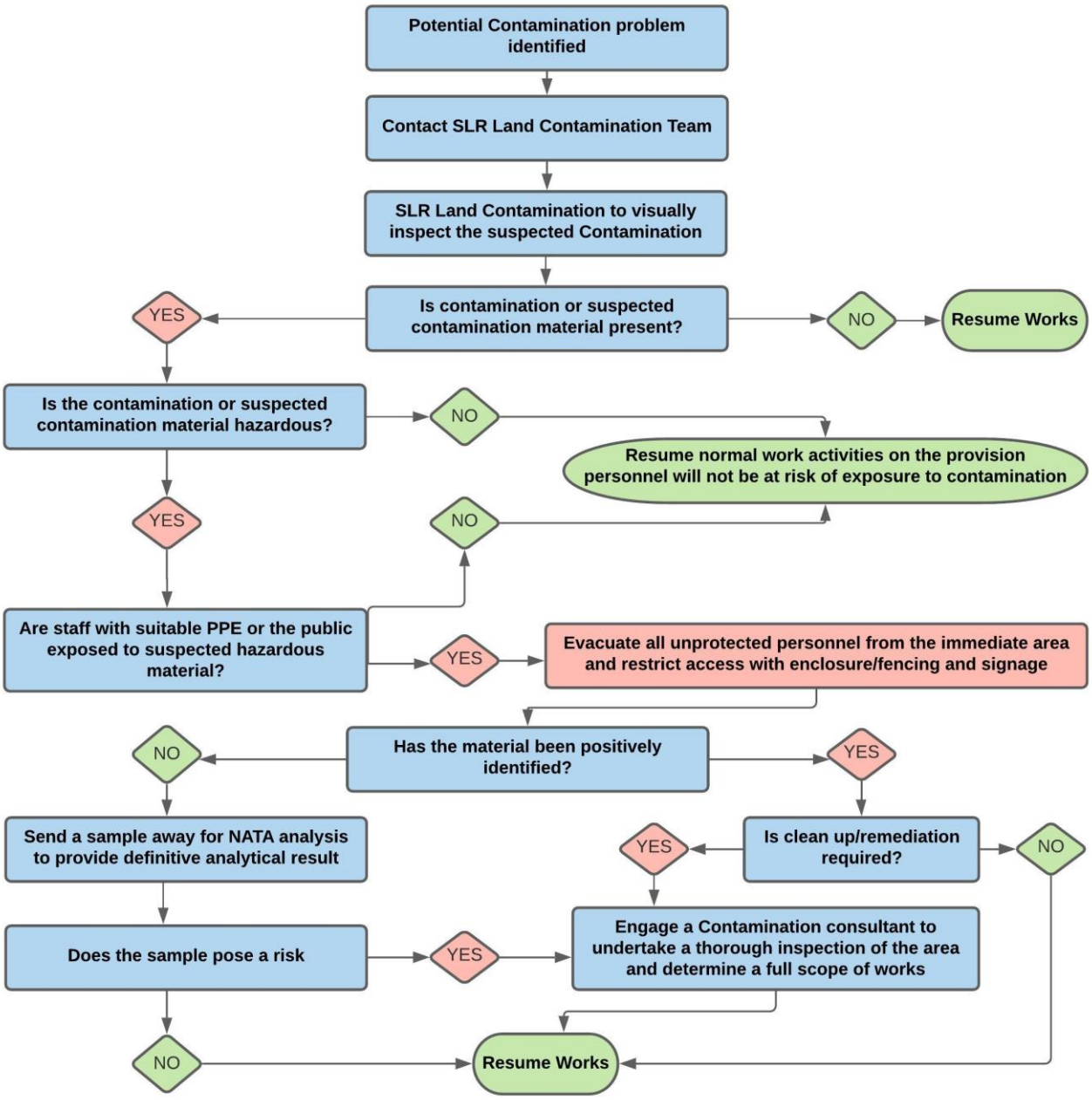
3 PPE

PPE will be required to be worn when managing the Unexpected Find. The type of PPE will depend on the nature of the Unexpected Find, but as a minimum will include:

- Steel Cap Boots
- Long Pants
- Long Sleeve Shirt
- Hard Hat
- Nitrile Gloves
- Eye Protection.

The need for additional PPE such as disposable overalls, half or full face masks would be determined as part of the risk assessment.

Figure 1: Unexpected Finds Procedure – Contamination



4 Document Control

Reference	Date	Prepared	Checked	Comment / Change
610.30237.00000-L01-v1.2	19/08/2021	JR	HS	Updated based on Auditor comments
610.30237.00000-L01-v1.1	11/08/2021	JR	HS	Update to Condition B50 for Auditor review
610.30237.00000-L01-v1.0	06/04/2021	JR	HS	Final
610.30237.00000-L01-v0.2	31/03/2021	JR	HS	First Issued

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix F

Aboriginal Cultural Heritage Management Plan



View northeast across Poultry Production Unit 1 location.

ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN

RUSHES CREEK POULTRY FARM

RUSHES CREEK, NSW

JUNE 2021

Report prepared by

OzArk Environment & Heritage

for EME Advisory

on behalf of ProTen Tamworth Pty Ltd

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DOCUMENT CONTROLS

Proponent	ProTen Tamworth Pty Ltd
Client	EME Advisory
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FINAL V3.0 = Final report	V3.0 OzArk to Client 4/5/21 V3.1 OzArk updates with approval 18/6/21 V3.2 OzArk updates Section 6.1.3.1 30/6/21
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Enquiries should be addressed to OzArk Environment & Heritage.

Acknowledgement

OzArk acknowledge Traditional Owners of the area to which this plan applies and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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1 INTRODUCTION

This Aboriginal Cultural Heritage Management Plan (ACHMP) for the Rushes Creek Poultry Production Farm (herein referred to as the Development) has been prepared by OzArk Environment & Heritage (OzArk) on behalf of ProTen Tamworth Pty Ltd (ProTen; the Proponent).

The Development, approved as State Significant Development (SSD) 7704 on 16 April 2020, comprises a poultry farm which will be located on 1016 hectares (ha) of rural land in an area known as Rushes Creek (the Development Site), approximately 12 kilometres (km) southwest of Manilla, NSW (**Figure 1-1**).

1.1 SCOPE

This ACHMP has been prepared as a tool to give consideration to and to manage Aboriginal heritage related issues during the construction and operation of the Development. It will be used by all Development employees, contractors, sub-contractors and visitors as the first point of reference for Aboriginal cultural heritage related issues.

This ACHMP synthesises the recommendations made during the preparation of an Environmental Impact Statement (EIS) for the Development, and subsequent assessment and approval of SSD-7704 (**Section 2**).

1.2 PURPOSE

The primary purpose of the ACHMP is to define management of Aboriginal heritage values in accordance with the Development Consent (refer to **Section 2** and **Table 2-1**). In order to achieve this, the ACHMP:

- details the management procedures for known Aboriginal heritage within the Development Site
- details reporting requirements
- outlines and describes ongoing Aboriginal consultation
- outlines the obligations of construction personnel to protect Aboriginal sites
- describes the roles and responsibilities of project staff in managing Aboriginal heritage sites before and after salvage works
- provides for continuous improvement through auditing and modification of the ACHMP.

1.3 DEVELOPMENT OVERVIEW

The Development, approved as SSD-7704, comprises four individual poultry production units (PPUs), which are identified as Farms 1 to 4, where broiler birds will be grown for the purpose of producing poultry meat (for human consumption). Each farm will contain between 10 and 18 tunnel-ventilated fully-enclosed climate-controlled poultry sheds, which will each have the

capacity to house 56,500 birds, along with associated support and servicing infrastructure. The Development will comprise a total of 54 poultry sheds, housing a combined site population of 3,051,000 birds.

Table 1-1 provides a summary of the various components of the Development and **Figure 1-2** shows the impact footprint of Development.

Table 1-1: Development description summary.

Aspect	Details
Purpose	Birds grown for the purpose of producing poultry meat
Number of PPUs	Four - Farms 1, 2, 3 and 4
Total disturbance footprint	Approximately 87.78 ha
Number of poultry sheds	Farm 1 – 10 sheds Farm 2 – 18 sheds Farm 3 – 10 sheds Farm 4 – 16 sheds
Type of poultry sheds	Tunnel-ventilated, fully-enclosed, climate-controlled
Poultry shed dimensions	160 metres (m) long by 18 m wide by 4.7 m high (to roof ridge)
Poultry shed areas	Each shed – 2,880 square metres (m^2) Total – 155,520 m^2
Bird numbers	Each shed - 56,500 birds Farm 1 – 565,000 birds Farm 2 – 1,017,000 birds Farm 3 – 565,000 birds Farm 4 – 904,000 birds Total – 3,051,000 birds
Maximum bird density within sheds	34 kilograms per square metre (kg/m^2)
Hours of operation	24 hours a day, 7 days a week
Production cycle length	Approximately 65 days, comprising a maximum bird occupation of 55 days and a cleaning phase of 10 days
Production cycles per year	Approximately 5.6 on average
Support/servicing infrastructure	* Eight houses to accommodate farm managers • Two access driveways from Rushes Creek Road and internal access roads • Water supply infrastructure to extract, transfer, treat and store water from the Namoi River • Reticulated electrical supply infrastructure • Bedding material storage shed • Two dead bird freezers • At each PPU: staff amenities and workshop (office, change rooms, toilets, workshop, chemical store and pump room); feed silos; water storage tanks; solar panels; fuel and gas storage facilities; generators; vehicle wheel wash; ring roads; surface water management system, including upstream diversions; and aerated wastewater treatment system (AWTS)
Vehicle access	Two access driveways from Rushes Creek Road constructed to accommodate a basic left turn (BAL) treatment. Internal access roads and ring roads around each PPU constructed as all-weather rural-type roads

Figure 1-1: Location map of the Development Site in relation to Manilla.

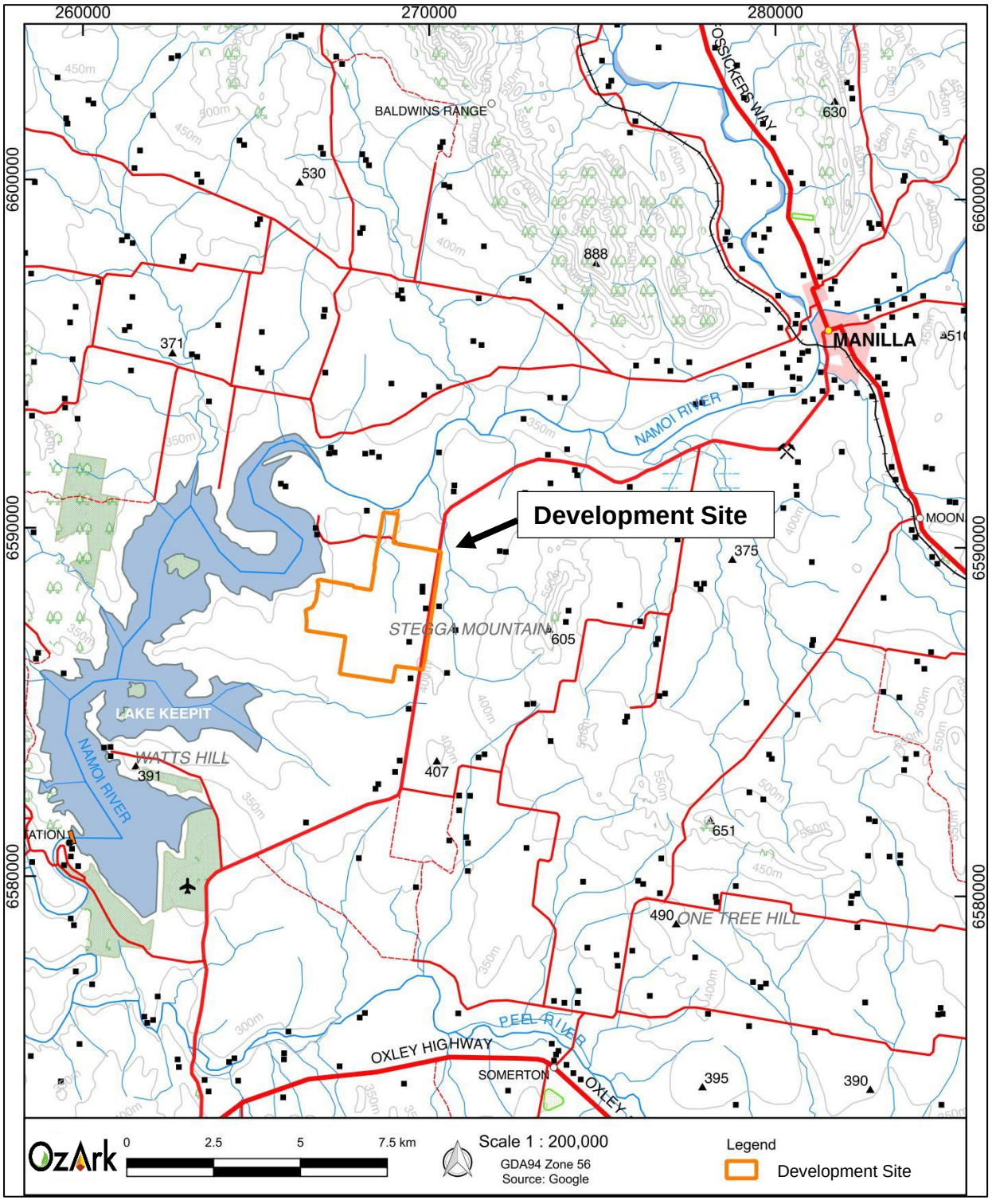
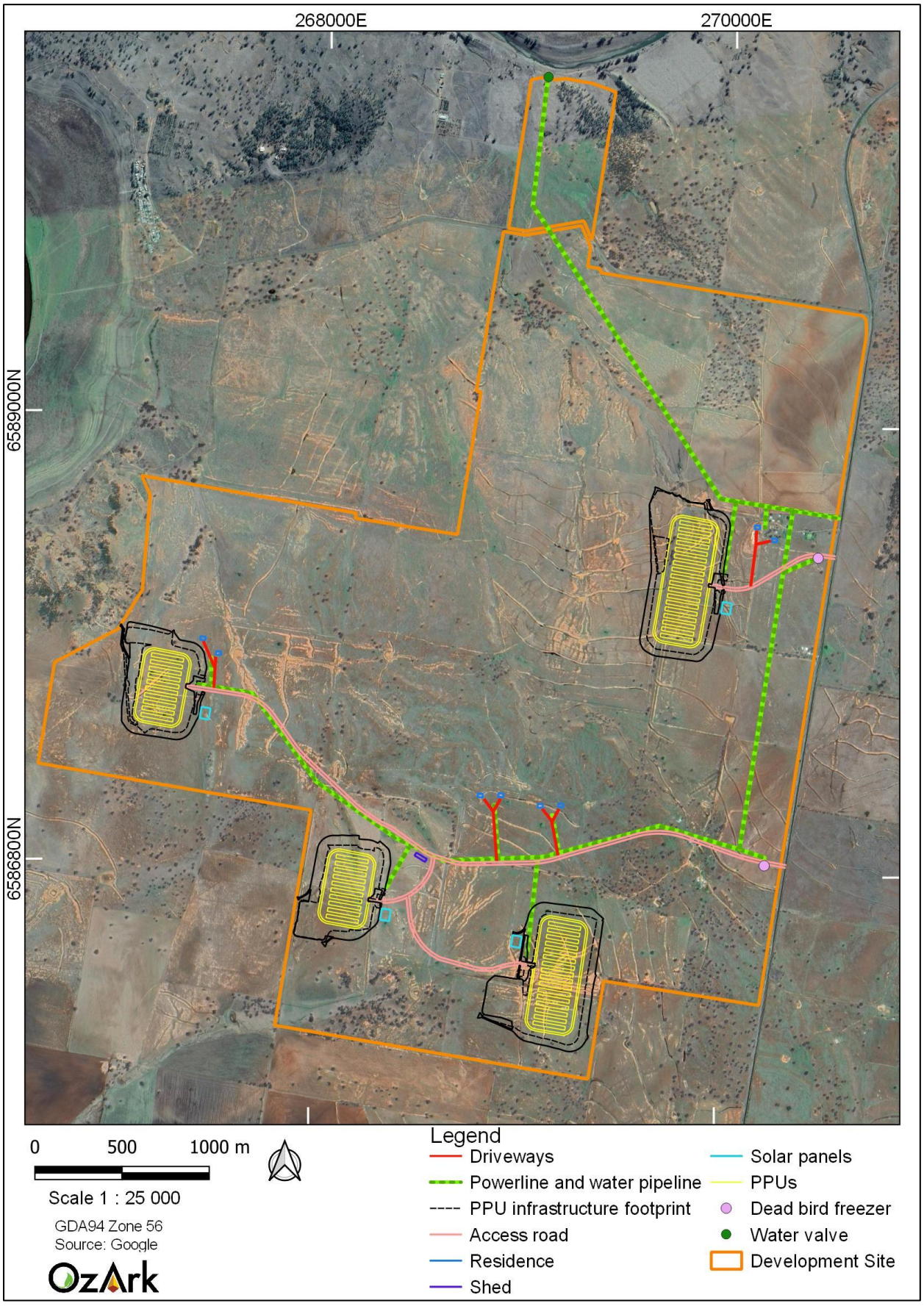


Figure 1-2: The Development Site and infrastructure layout.



2 LEGAL AND OTHER REGULATORY REQUIREMENTS

2.1 DEVELOPMENT CONSENT CONDITIONS

The Development is an SSD and an EIS was completed (SLR Consulting Australia Pty Ltd 2018) in accordance with clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* to assess the environmental impacts (including Aboriginal cultural heritage) of the Development Site.

Development Consent SSD-7704 was granted from the Minister for Planning and Public Spaces on 16 April 2020, with *Condition B33* requiring the preparation of an ACHMP. **Table 2-1** identifies all the conditional requirements relating to Aboriginal heritage and identifies where in the ACHMP individual requirements have been addressed.

Appendix 1 includes a copy of the 'relevant conditions' for which this ACHMP provides measures to ensure compliance, namely *Condition B33* to *B36*.

Table 2-1: Conditional requirements of SSD-7704 for an ACHMP.

Condition	Section in this ACHMP
B33. Before the commencement of any clearing or construction works, the Applicant must prepare an ACHMP for the development. The plan must form part of the CEMP required by condition C2 and must: a) be prepared by a suitably qualified and experienced expert in consultation with the Registered Aboriginal Parties and the Environment, Energy and Science Group b) be submitted to the satisfaction of the Planning Secretary prior to construction of any part of the development c) describe the management actions of all Aboriginal sites within the development site d) describe the measures to salvage the artefacts at Happy Hills-IF3, Bondah-IF1, Bondah-IF2, Bondah-IF7, Bondah-IF8, Happy Hills-OS3 and Bondah-OS11, including mapping, analysis and collection, and protect them in perpetuity e) include a program of excavation and reporting of the feature known as Bondah-H1, in consultation with the Registered Aboriginal Parties (RAPs).	a) **Section 3** b) **Section 3.1** c) **Section 6** d) **Section 6.1.2** e) **Section 2.2**
B34. The Applicant must: a) not commence construction until the Aboriginal Cultural Heritage Management Plan is approved by the Planning Secretary b) implement the most recent version of the Aboriginal Cultural Heritage Management Plan approved by the Planning Secretary for the duration of the development.	This ACHMP accords with the condition.
B35. If any item or object of Aboriginal heritage significance is identified on site: a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately b) a 10 metre wide buffer area around the suspected item or object must be cordoned off c) the Heritage Division of the Department of Premier and Cabinet must be contacted immediately.	**Section 7**
B36. Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.	**Section 7.1** and **7.2.2**

2.2 CONDITION B33 (E): EXCAVATION OF BONDAH-H1

Bondah-H1 is a hearth located in the north of the Development Site (**Figure 4-1**). The hearth is located approximately 455 metres (m) from the nearest Development impact: the water pipeline and powerline. As such, no management measures were recommended for the site within the ACHAR prepared by OzArk (2018).

Despite this, excavation of the hearth has been included as a condition by Heritage NSW in the Development Consent. Condition B33 (e) states the ACHMP must:

> *include a program of excavation and reporting of the feature known as Bondah-H1, in consultation with the Registered Aboriginal Parties (RAPs).*

Consultation was undertaken with the RAPs to determine whether they supported the partial excavation of the hearth for dating purposes. As part of the draft ACHMP which was distributed to RAPs for their review, a proposed methodology was included for the excavation and reconstruction of the hearth following retrieval of a suitable sample for dating.

The majority of RAPs who provided feedback regarding the excavation of Bondah-H1 have stated that they do not support the excavation of the site (**Section 3.2.2.1** and **Table 3-1**). As such, OzArk prepared a letter which was sent to Heritage NSW requesting Condition B33 (e) be retracted from the Development Consent as per the request of the RAPs. A letter from Heritage NSW dated 4 May 2021 stating that “Heritage NSW supports the decision not to excavate site ‘Bondah-H1’ (**Appendix 2**).

3 CONSULTATION

3.1 GOVERNMENT CONSULTATION

As outlined in *Condition B33(a)* of the Development Consent, the ACHMP must be prepared in conjunction with the Environment, Energy and Science Group (henceforth Heritage NSW) and be submitted to the Department of Planning, Industry and Environment (DPIE) prior to any construction to satisfy *Condition B33(b)* (**Table 1-1**).

Accordingly, a copy of this ACHMP was provided to Heritage NSW on 8 March 2021 for their review and comments. Endorsement of the ACHMP was received from Heritage NSW on 4 May 2021 and is presented in **Appendix 2**.

Endorsement of the ACHMP was received from DPIE on 14 May 2021 (**Appendix 2**).

3.2 ABORIGINAL COMMUNITY CONSULTATION

3.2.1 Aboriginal parties consulted

Details of Aboriginal community consultation undertaken for *the Aboriginal Cultural Heritage Assessment Report* is detailed in OzArk 2018. The assessment followed the guidelines contained in the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010b). In summary, the following RAPs were identified and consulted with respect to proposed management of Aboriginal sites.

- Tamworth Local Aboriginal Land Council (LALC)
- T&G Culture Consultants
- Richard Slater
- DFTV Enterprises
- Gomery Cultural Consultant
- Brian Draper
- White Cockatoo Aboriginal Corporation
- Gomeroi People NC2011/006
- Natasha Rodgers
- AT Gomilaroi Cultural Consultancy
- Veronica Talbott.

3.2.2 Consultation in developing this ACHMP

During the drafting of this ACHMP, the RAPs listed in **Section 3.2.1** were consulted.

A log regarding the consultation is provided in **Appendix 3 Figure 1**.

3.2.2.1 Hearth excavation and long-term management of artefacts

A letter was initially sent to all RAPs to provide some background on the approval of the Development on 13 November 2020 (**Appendix 3 Figure 2**). The letter also requested feedback on the following:

- Whether RAPs supported the partial excavation Bondah-H1 for dating purposes (as requested by Heritage NSW)
- The preferred option for the long-term management of salvaged artefacts.

Feedback received from RAPs on the excavation of Bondah-H1 and the long-term management of salvaged artefacts is tabulated in **Table 3-1**. RAPs not listed in **Table 3-1** were unable to be contacted for their response.

Table 3-1: Reponses from RAPs regarding the excavation of Bondah-H1 and the long-term management of salvaged artefacts.

RAP Group	Hearth to be excavated (yes or no)	Artefact management (Care Agreement or reburial / relocation)	Date of feedback	Feedback method
Tamworth LALC	No	Care Agreement	26 November 2020	Email
Gomery Cultural Consultation	Yes	Care Agreement	7 December 2020	Phone
Veronica Talbott	No	Reburial / relocation	7 December 2020	Phone
White Cockatoo Aboriginal Corporation	No	Reburial / relocation	8 December 2020	Phone
Gomeroi People NC2011/006 (Steve Talbott)	No	Reburial / relocation	12 December 2020	Phone

3.2.2.2 AFGM

Responses were received from two RAP groups (Gomeroi People NC2011/006 and White Cockatoo Aboriginal Corporation) requesting a meeting to discuss the ACHMP and proposed salvage. As such, an invitation to attend an Aboriginal Focus Group Meeting (AFGM) was sent to all RAPs on 22 January 2021 (**Appendix 3 Figure 4**).

The AFGM was held on Thursday 4 February 2021 at the Gunnedah Services and Bowling Club. The AFGM was attended by the following people (**Appendix 3 Figure 6**):

- Stephanie Rusden (OzArk)
- Julian Johnson (ProTen)
- Chris Fermon (Tamworth LALC)
- Kerry Morgan (White Cockatoo Aboriginal Corporation)

The meeting minutes are provided in **Appendix 3 Figure 7**.

3.2.2.3 ACHMP review

A draft copy of the ACHMP was sent to all RAPs on 22 January 2021 for their review (**Appendix 3 Figure 5**). Comments on the draft ACHMP were requested by Friday 19 February 2021.

Comments of the ACHMP were received from White Cockatoo Aboriginal Corporation and AT Gomilaroi Cultural Consultancy (**Appendix 3 Figure 8**).

OzArk's response to White Cockatoo Aboriginal Corporation is provided in **Appendix 3 Figure 9**.

3.2.3 Ongoing consultation protocols

RAPs will be kept informed with respect to activities and operations which may impact on Aboriginal heritage management.

Notification within a reasonably prompt timeframe will be issued to all Aboriginal parties where:

- significant changes to the Development may have implications for Aboriginal heritage management
- there is a discovery in the course of construction or operation of the Development, e.g. unexpected finds of Aboriginal ancestral remains or object(s)
- significant land management actions are required in Aboriginal site protection areas not envisaged by this ACHMP.

Issues raised by RAPs in conversations whether by telephone or in person in the course of ongoing consultation will be documented in writing by the Proponent or the Archaeologist involved in the correspondence. Only documented issues will be followed up.

RAPs will be consulted as part of any formal review of the ACHMP.

4 THE ABORIGINAL HERITAGE RESOURCE

4.1 IDENTIFIED ABORIGINAL CULTURAL HERITAGE

As a result of the archaeological assessment (OzArk 2018), 35 sites were identified within the Development Site. No previously recorded Aboriginal sites were present within the Development Site.

Table 4-1 lists the Aboriginal site types known to exist within the Development Site and **Table 4-2** provides details of the 35 sites within the Development Site. **Figure 4-1** and **Figure 4-2** show the location of the recorded Aboriginal sites within the Development Site.

Detailed descriptions and images of each site are provided in Section 5.4 of OzArk 2018.

Table 4-1: Aboriginal site types within the Development Site.

Site type	Number	Percentage of total (% rounded)
Isolated finds	17	49
Artefact scatters	13	37
Scarred trees	3	8
Artefact scatter with potential archaeological deposit (PAD)	1	3
Hearth	1	3

Table 4-2: Recorded Aboriginal sites within the Development Site.

AHIMS ID	Site Name	Site coordinates (GDA Zone 56)	Site Type	Site Description
20-5-0133	Happy Hills-IF1	269741E, 6586383N	Isolated find	Volcanic flake located on a contour bank, approximately 144 m) north of the Happy Hills southern property boundary.
20-5-0102	Happy Hills-IF2	268635E, 6586196N	Isolated find	Fine-grained siliceous flake located 60 m south of Plain Gully and 120 m west of a dam.
20-5-0101	Happy Hills-IF3	268267E, 6586496N	Isolated find	Volcanic flake located to the south of a contour bank, approximately 420 m east of the Happy Hills property boundary.
20-5-0100	Happy Hills-IF4	268641E, 6586796N	Isolated find	Fine-grained siliceous flake located on a farm track, approximately 1.4 km west of the more recent Happy Hills house.
20-5-0126	Bondah-IF1	269923E, 6588309N	Isolated find	Volcanic flake located on a contour bank, 180 m north of a dam and 12 m west of a drainage feature.
20-5-0127	Bondah-IF2	269837E, 6588361N	Isolated find	Fine-grained siliceous flake in a previously ploughed paddock, located 442 m southwest of the Bondah infrastructure complex.
20-5-0128	Bondah-IF3	269641E, 6587816N	Isolated find	Mudstone flake located on a contour bank, 330 m southeast of a dam and 25m west of a drainage feature.
20-5-0129	Bondah-IF4	268212E, 6587644N	Isolated find	Chert flake located within an eroding exposure along the edge of a drainage feature.
20-5-0122	Bondah-IF5	267996E, 6587325N	Isolated find	Mudstone flake located within an eroding exposure along the edge of a drainage feature.
20-5-0123	Bondah-IF6	267931E, 6587218N	Isolated find	Chert flake located within an eroding exposure along the edge of a drainage feature.

AHIMS ID	Site Name	Site coordinates (GDA Zone 56)	Site Type	Site Description
20-5-0124	Bondah-IF7	267260E, 6587726N	Isolated find	Chert flake located on a contour bank, 216 m northwest of a dam.
20-5-0125	Bondah-IF8	267098E, 6587759N	Isolated find	Basalt flake located within a previously ploughed paddock, 94 m northeast of a dam.
20-5-0121	Bondah-IF9	267425E, 6588036N	Isolated find	Basalt flake on a livestock track located 350 m south of a dam and 930 m southeast of the Namoi River.
20-5-0120	Bondah-IF10	267652E, 6587944N	Isolated find	Fine-grained siliceous flake with usewear on a contour bank located 2.6 km southwest of the Bondah infrastructure complex, 102 m north of a dam.
20-5-0119	Bondah-IF11	267549E, 6587933N	Isolated find	Chert flake located within an erosion scald along a drainage feature, 65 m north of a dam.
20-5-0118	Bondah-IF12	269195E, 6590574N	Isolated find	Chert flake on an ant nest located 640 m north of Ski Gardens Road and 115 m south of the Namoi River.
20-5-0116	Bondah-IF13	269157E, 6588907N	Isolated find	Mudstone flake located within an erosion scald along a drainage feature, 931 m south of Ski Gardens Road.
20-5-0105	Happy Hills-OS1	268294E, 6586054N	Artefact scatter	Nine stone artefacts manufactured from volcanic materials, chert and fine-grained siliceous materials. The site extent measures 126 m x 87 m and is located 124 m, north of the Happy Hills southern property boundary.
20-5-0104	Happy Hills-OS2	268144E, 6586277N	Artefact scatter	Five stone artefacts manufactured from fine-grained siliceous materials and chalcedony. The site extent measures 18 m x 59 m and is located 370 m west southwest of a dam and 295 m north of the Happy Hills southern property boundary.
20-5-0103	Happy Hills-OS3	268303E, 6586677N	Artefact scatter	Four stone artefacts manufactured from volcanic and fine-grained siliceous materials. The site extent measures 127 m x 42 m and is located 1.6 km west southwest of the more recent Happy Hills homestead, 560 m southeast of a dam.
20-5-0117	Bondah-OS1	269358E, 6590634N	Artefact scatter	Six stone artefacts manufactured from a fine-grained siliceous material located 670 m north of Ski Gardens Road and 130 m south of the Namoi River. The site extent measures 109 m x 38 m.
20-5-0115	Bondah-OS2	269042E, 6590711N	Artefact scatter	Four stone artefacts manufactured from chert, quartz and fine-grained siliceous material situated on a gentle to moderately sloped bank of the Namoi River. The site extent measures 12 m x 21 m.
20-5-0107	Bondah-OS3	269140E, 6589451N	Artefact scatter with PAD	Artefact scatter consisting of 12 separate artefact location areas with artefacts manufactured from a variety of materials including fine-grained siliceous materials, silcrete, jasper, basalt and quartz. The site is located at the confluence of two second order tributaries of the Namoi River. The site extent measure 978 m x 326 m.
20-5-0110	Bondah-OS4	268883E, 6589353N	Artefact scatter	Artefact scatter consisting of more than 10 stone artefacts manufactured largely from fine-grained siliceous materials and a possible manuport. Artefacts are present along the banks of a drainage line to the south of Bondah-OS3. The site extent measures 398 m x 84 m.
20-5-0111	Bondah-OS5	269259E, 6589134N	Artefact scatter	Artefact scatter consisting of 17 stone artefacts manufactured from basalt, chert, fine-grained siliceous materials and jasper. Artefacts are present along the banks of a

AHIMS ID	Site Name	Site coordinates (GDA Zone 56)	Site Type	Site Description
				drainage line to the south of Bondah-OS3. The site extent measures 80 m x 122 m.
20-5-0112	Bondah-OS6	267419E, 6588351N	Artefact scatter	Artefact scatter consisting of nine stone artefacts manufactured from basalt, fine-grained siliceous material and chalcedony located on a gentle to moderately sloped creek bank. The site extent measures 33 m x 17 m.
20-5-0113	Bondah-OS7	267707E, 6587821N	Artefact scatter	Artefact scatter consisting of two flakes manufactured from volcanic materials located on the bank of a drainage line. The site extent measures 36 m x 50 m.
20-5-0114	Bondah-OS8	267956E, 6587767N	Artefact scatter	Artefact scatter consisting of three flakes manufactured from a volcanic material, a fine-grained siliceous material and quartzite. The site comprises two areas of exposure either side of the drainage line. The site extent measures 140 m x 38 m.
20-5-0109	Bondah-OS9	267638E, 658532N	Artefact scatter	Artefact scatter consisting of two flakes manufactured from chert and mudstone located on the edges of a heavily eroded drainage line. The site extent measures 183 m x 91 m.
20-5-0108	Bondah-OS10	267505E, 6587166N	Artefact scatter	Artefact scatter consisting of two flakes manufactured from mudstone recorded within an area of exposure at the base of an area of basalt outcropping. The site extent measures 13 m x 11 m.
20-5-0106	Bondah-OS11	267123E, 6587441N	Artefact scatter	Artefact scatter consisting of two stone artefacts manufactured from a fine-grained siliceous material located 218m south east of a dam. The site extent measures 22 m x 4 m.
20-5-0134	Bondah-H1	269169E, 6589145N	Hearth	A hearth comprised of heat fractured rocks, however, no evidence of burning or charcoal was evident on the surface. The site is located 1.7 km south of the Namoi River and 650 m south of Ski Gardens Road and west of Bondah-OS5.
20-5-0131	Happy Hills-ST1	268684E, 6586958N	Scarred tree	Scarred tree located adjacent to an ephemeral first order tributary of Plain Gully on a mid to lower slope landform within a vegetated corridor between an existing ploughed paddock and access road. The scar is 105 centimetres (cm) long and is 33 cm wide. The scar is orientated to the southwest.
20-5-0132	Happy Hills-ST2	268363E, 6587137N	Scarred tree	Scarred tree located adjacent to an ephemeral first order tributary of Plain Gully on a mid to lower slope landform within a vegetated corridor between an existing ploughed paddock and access road. The scar is 140 cm long and is 38 cm wide. The scar is orientated to the northwest.
20-5-0130	Happy Hills-ST3	268207E, 6585970N	Scarred tree	Scarred tree located within a grassed paddock surrounded by a number of mature isolated trees on a lower slope landform. The scar is 132 cm long and is 28 cm wide. The scar is orientated to the south.

Figure 4-1: Location of recorded isolated finds, scarred trees, and the hearth within the Development Site.

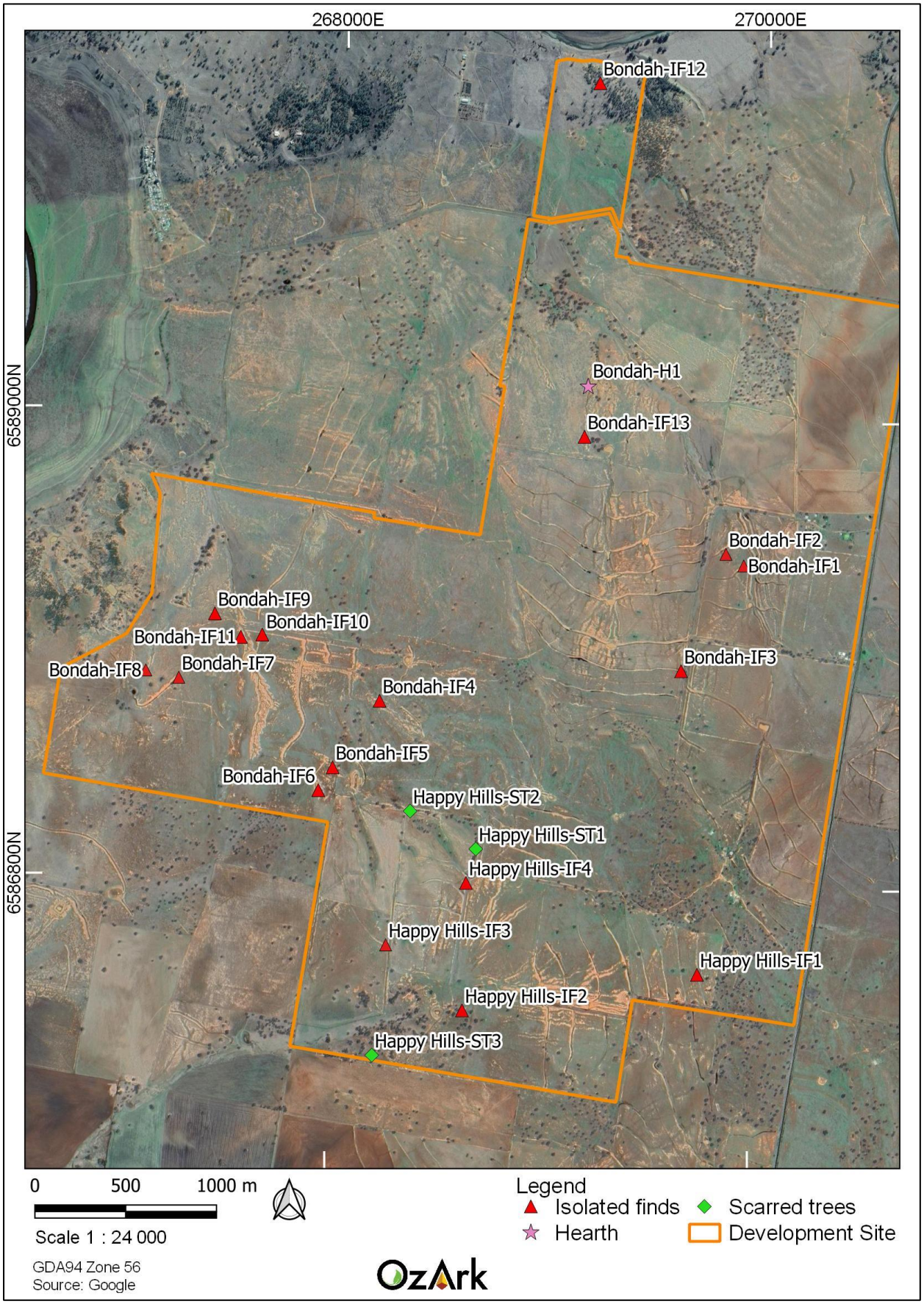
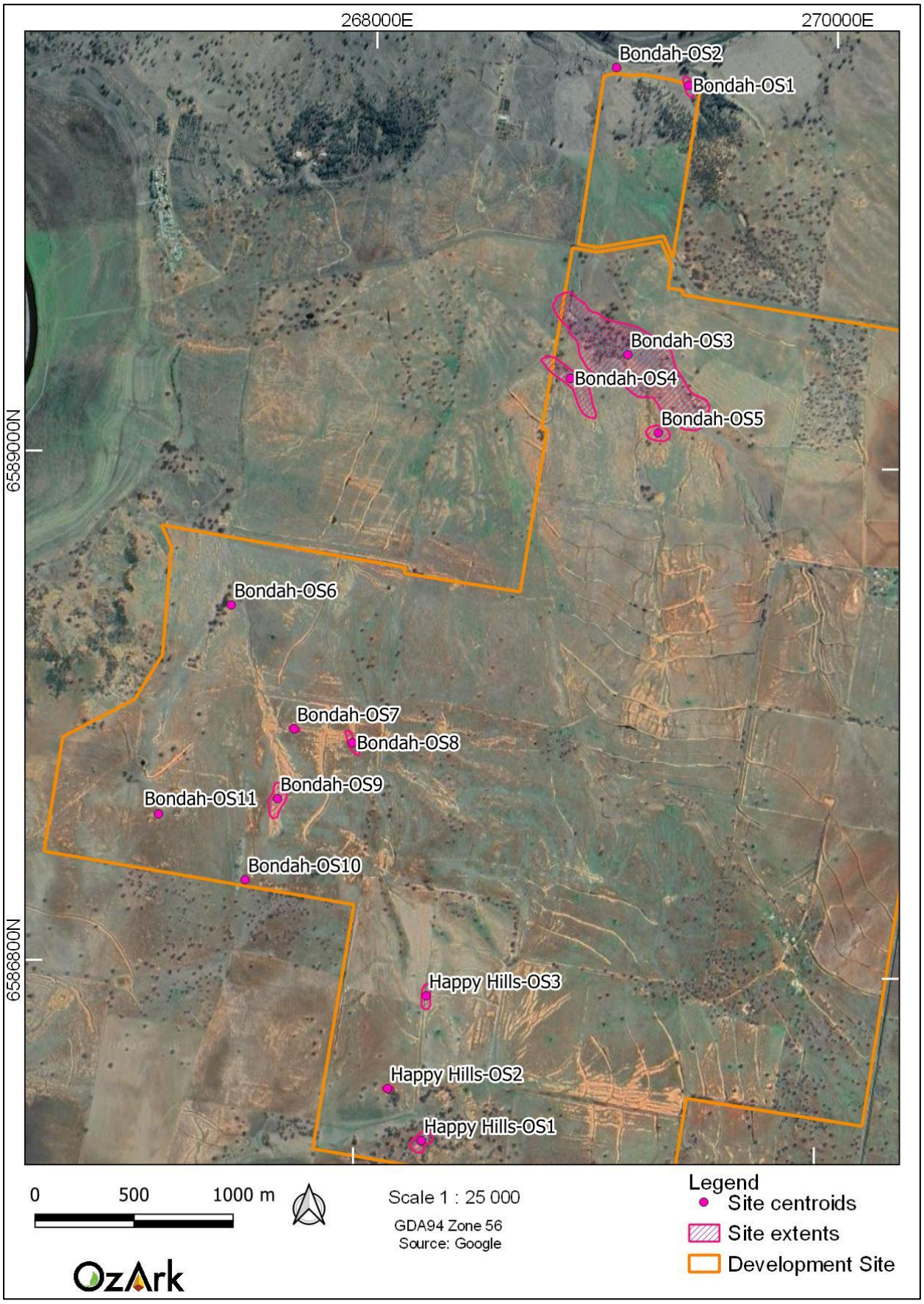


Figure 4-2: Location of recorded artefact scatters within the Development Site.



4.2 CULTURAL VALUES

Social or cultural value refers to the spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them.

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always consensus about a place's social or cultural value. Because people experience places and events differently, expressions of social or cultural value do vary and, in some instances, will be in direct conflict. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural value can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival documentation and specific information provided by Aboriginal people specifically for the investigation.

A copy of the ACHAR was sent to the RAPs on 29 August 2017. No feedback was received relating to the social or cultural value of the newly recorded sites. As such, for the purposes of assessing the potential impact to Aboriginal cultural heritage, all recorded sites were accorded high social and cultural values. This is because Aboriginal sites are seen by the community as a marker of ancient occupation across the region, as well as being a tangible link to their ancestors.

5 MANAGEMENT STRATEGY

5.1 IDENTIFYING ABORIGINAL HERITAGE IMPACTS

Development impacts will occur to Aboriginal objects both at Aboriginal sites where objects are visible, as well as potentially below the ground surface where they are not readily apparent. The impacts to Aboriginal sites through the Development were identified and assessed as part EIS.

The findings of the archaeological survey confirm that Aboriginal stone artefacts are broadly distributed within the soil across the Development Site and that vegetation cover and soil exposure conditions can change to reveal previously obscured artefacts. Such exposed artefacts are referred to as “sites” which means the site where Aboriginal objects may be observed in the present. Similarly changing environmental conditions can obscure previously visible Aboriginal objects. The phenomenon of previously recorded “sites” not being discoverable at a later time is also common.

The management strategy addresses the recorded sites of Aboriginal objects, as well as the inferred broad distributions of Aboriginal stone artefacts reflecting past Aboriginal activity in all parts of the landscape. Because Aboriginal objects occur within the topsoil in parts of the Development Site, impacts to undiscovered Aboriginal objects may occur. The management strategy is provided as mitigation of all Aboriginal heritage impacts, including impacts to those Aboriginal objects that have been recorded and Aboriginal objects which may occur unrecorded within the topsoil.

5.2 OBLIGATION TO PROTECT ABORIGINAL CULTURAL HERITAGE

5.2.1 Obligation to avoid harm

All employees, contractors, sub-contractors and visitors to the Development Site have an obligation to avoid harming Aboriginal heritage unless engaged in approved development activity in an area where Aboriginal salvage obligations have been met as described in this ACHMP.

The definition of harm used in this ACHMP stems from the definition in Section 5 of the *National Parks and Wildlife Act 1974* (NPW Act). The examples used below are for illustrative purposes and are not exhaustive.

Harm to an Aboriginal object or Aboriginal site means:

- Moving or collecting stone artefacts (although picking up artefacts and inspecting them is acceptable as long as they are immediately returned to their original location.
- Disturbing the earth where stone artefacts are located, e.g. by earthworks for drains, roads, etc.
- Breaking stone artefacts, e.g. by running over them in a vehicle.

- Cutting down, disturbing or otherwise marking scarred trees.

Trivial or negligible impacts to Aboriginal objects are not regarded as harm.

5.2.2 Obligation to protect harm

All employees, contractors and sub-contractors of the Development Site having responsibility for land management, construction or operation have an obligation to protect Aboriginal heritage within their area of work responsibility.

Protection means active recognition of known Aboriginal heritage and active measures to avoid Aboriginal heritage.

5.2.3 Obligation to implement impact management measures

All employees, contractors and sub-contractors of the Development Site have a responsibility to ensure that the appropriate Aboriginal heritage salvage has been conducted prior to or in association with their activities which impact Aboriginal objects.

5.3 ABORIGINAL HERITAGE INDUCTIONS

All employees, contractors, sub-contractors, and visitors to the Development Site should be made aware of the obligation to avoid harm to Aboriginal heritage through an Aboriginal heritage component of a general site induction.

The induction will include the following points expressed in plain language.

- Aboriginal sites occur across the Development Site
- Aboriginal sites are of great significance to the Aboriginal community, are important to the wider community and must be treated with respect
- Aboriginal sites are protected by law. The Development Consent for the Development includes conditions allowing impact to certain specified Aboriginal sites described in the EIS and this ACHMP
- Aboriginal sites include stone tool artefacts, hearths, and scarred trees
- Many Aboriginal artefacts are hidden within the topsoil and are not readily visible. The apparent absence of a site does not mean it is no longer in existence.

5.4 GENERAL STRATEGIES

Aboriginal sites within the Development Site, but outside of impact areas, will not be harmed. The following management strategy will apply to these sites:

- Previously recorded Aboriginal sites not impacted by Development will be protected by fencing on an as needed basis. For example, if it is considered that a site may be inadvertently harmed, such as being located near an access road, it should be fenced.

Sites located away (i.e. more than 55 m) from any activity area may not require fencing (refer to **Section 6.1.3**).

Any sites within impact areas are likely to be harmed. All known sites within impact areas will be salvaged under the terms of this ACHMP (refer to **Section 6.1**). However, before an area is impacted by approved activities, a previously unknown Aboriginal object(s) may be noted. The following management strategy relates to new discoveries within impact areas:

- Information, such as location and photographs, should first be sent to an archaeologist to gain a preliminary determination of whether the discovery is an Aboriginal object
- If it is determined to be an Aboriginal object, the object(s) should be recorded and assessed by an archaeologist to determine the management group of the site comprising the objects
- Any Aboriginal objects identified within impact areas will be salvaged following the methodology set out in **Section 6.1.2.1**
- All findings will be described in a technical report.

The procedures for the discovery of additional Aboriginal objects and/or human skeletal material at the Development Site are detailed in **Section 7**.

6 SALVAGE AND MANAGEMENT OF ABORIGINAL SITES

6.1 MANAGEMENT GROUPS

Based on the approved disturbance footprint of the Development, seven sites are within impact areas. 28 sites occur in non-impact areas although some require additional management to ensure that they are not harmed. Management of these sites falls under three management groups, namely:

- Group 1: Avoidance. These sites are at no direct risk of harm from the Development.
- Group 2: Sites Requiring Salvage. This group includes sites directly within or adjacent to impact areas. Sites within this group will be subject to surface collection.
- Group 3: Sites Requiring Management. This group includes sites within 55 m of a ground disturbing impact associated with the Development and the scarred trees.

Table 6-1 identifies all sites and nominates the management group to which each is assigned. The locations of sites in relation to the impact footprint of the Development are shown on **Figure 6-1** and **Figure 6-2**.

The following sub-sections describe the specific salvage and management measures to be applied to the sites within each group.

Table 6-1: Site impact and management assessment.

AHIMS ID	Site Name	Assessed Scientific Significance	Degree of Harm (Total/Partial/None)	Management Strategy
20-5-0133	Happy Hills-IF1	Low	None	**Group 1**: No management required. The site is located 425 m east of a PPU.
20-5-0102	Happy Hills-IF2	Low	None	**Group 1**: No management required. The site is located 260 m west of a PPU.
20-5-0101	Happy Hills-IF3	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0100	Happy Hills-IF4	Low	None	**Group 3**: The site is located within 50 m of the access road to the north. It should be permanently fenced with a 10 m buffer during both the construction and operational phases of the Development. The fencing should be clearly visible and signed with 'Do Not Enter".
20-5-0126	Bondah-IF1	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0127	Bondah-IF2	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0128	Bondah-IF3	Low	None	**Group 1**: No management required. The site is located 100 m south of a PPU.
20-5-0129	Bondah-IF4	Low	None	**Group 1**: No management required. The site is located 470 m northeast of the proposed water pipeline and powerline, and proposed access road.
20-5-0122	Bondah-IF5	Low	None	**Group 3**: The site is located within 30 m northeast of the proposed access road. It should be permanently fenced with a 10 m buffer during both the construction and operational phases of the Development. The

AHIMS ID	Site Name	Assessed Scientific Significance	Degree of Harm (Total/Partial/None)	Management Strategy
				fencing should be clearly visible and signed with 'Do Not Enter".
20-5-0123	Bondah-IF6	Low	None	**Group 1**: No management required. The site is located 60 m southwest of a proposed water pipeline and powerline.
20-5-0124	Bondah-IF7	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0125	Bondah-IF8	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0121	Bondah-IF9	Low	None	**Group 1**: No management required. The site is located 150 m north of a proposed residence.
20-5-0120	Bondah-IF10	Low	None	**Group 1**: No management required. The site is located 200 m northeast of a proposed residence.
20-5-0119	Bondah-IF11	Low	None	**Group 1**: No management required. The site is located 115 m northeast of a proposed residence.
20-5-0118	Bondah-IF12	Low	None	**Group 1**: No management required. The site is located 155 m east of the proposed water pipeline and powerline.
20-5-0116	Bondah-IF13	Low	None	**Group 1**: No management required. The site is located 600 m southwest of the proposed water pipeline and powerline
20-5-0105	Happy Hills-OS1	Low	None	**Group 1**: No management required. The site is located 540 m south of a PPU.
20-5-0104	Happy Hills-OS2	Low	None	**Group 1**: No management required. The site is located 220 m southeast of a PPU.
20-5-0103	Happy Hills-OS3	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0117	Bondah-OS1	Low	None	**Group 1**: No management required. The site is located 330 m east of the proposed water pipeline and powerline.
20-5-0115	Bondah-OS2	Low	None	**Group 3**: The site is located within 50 m of the proposed water pipeline and powerline to the southeast. It should be fenced with a 10 m buffer during the construction phase of the Development. The fencing should be clearly visible and signed with "Do Not Enter". As the site is distant to operational activities, permanent fencing is not required.
20-5-0107	Bondah-OS3	Moderate	None	**Group 3**: The site is located 55 m southwest of the proposed water pipeline and powerline to the northeast. It should be fenced along its eastern extents during the construction phase of the Development. The fencing should be clearly visible and signed with "Do Not Enter". As the site is distant to operational activities, permanent fencing is not required.
20-5-0110	Bondah-OS4	Low	None	**Group 1**: No management required. The site is located 670 m west of the proposed water pipeline and powerline.
20-5-0111	Bondah-OS5	Low	None	**Group 1**: No management required. The site is located 425 m west of the proposed water pipeline and powerline.
20-5-0112	Bondah-OS6	Low	None	**Group 1**: No management required. The site is located 530 m north of a PPU.
20-5-0113	Bondah-OS7	Low	None	**Group 1**: No management required. The site is located 225 m east of a proposed residence and 215 m north of the proposed water pipeline and powerline.

AHIMS ID	Site Name	Assessed Scientific Significance	Degree of Harm (Total/Partial/None)	Management Strategy
20-5-0114	Bondah-OS8	Low	None	**Group 1**: No management required. The site is located 330 m northeast of a proposed access road.
20-5-0109	Bondah-OS9	Low	None	**Group 3**: The site is located within 20 m of a proposed access road to the north. It should be permanently fenced with a 10 m buffer around the northern extent during both the construction and operational phases of the Development. The fencing should be clearly visible and signed “Do Not Enter”.
20-5-0108	Bondah-OS10	Low	None	**Group 1**: No management required. The site is located 375 m southeast of a proposed PPU.
20-5-0106	Bondah-OS11	Low	Total	**Group 2**: Mapping, recording and collection of surface artefacts.
20-5-0134	Bondah-H1	Moderate to high	Total	**Group 1**: No management required. The site is located 455 m southwest of the proposed water pipeline and powerline.
20-5-0131	Happy Hills-ST1	Low	None	**Group 3**: The site is located 135 m north of the proposed water pipeline and powerline however RAPs have requested the tree be fenced to ensure it is not impacted by livestock.
20-5-0132	Happy Hills-ST2	Low	None	**Group 3**: The site is located 135 m north of a proposed access road however RAPs have requested the tree be fenced to ensure it is not impacted by livestock.
20-5-0130	Happy Hills-ST3	Low	None	**Group 3**: The site is located 750 m southwest of a PPU however RAPs have requested the tree be fenced to ensure it is not impacted by livestock.

*Sites are colour categorised to their corresponding management strategy as follows:

- Red – salvage surface collection
- Orange – requires fencing

Figure 6-1: Location of recorded Aboriginal sites in relation to the Development impacts in the north of the Development Site.

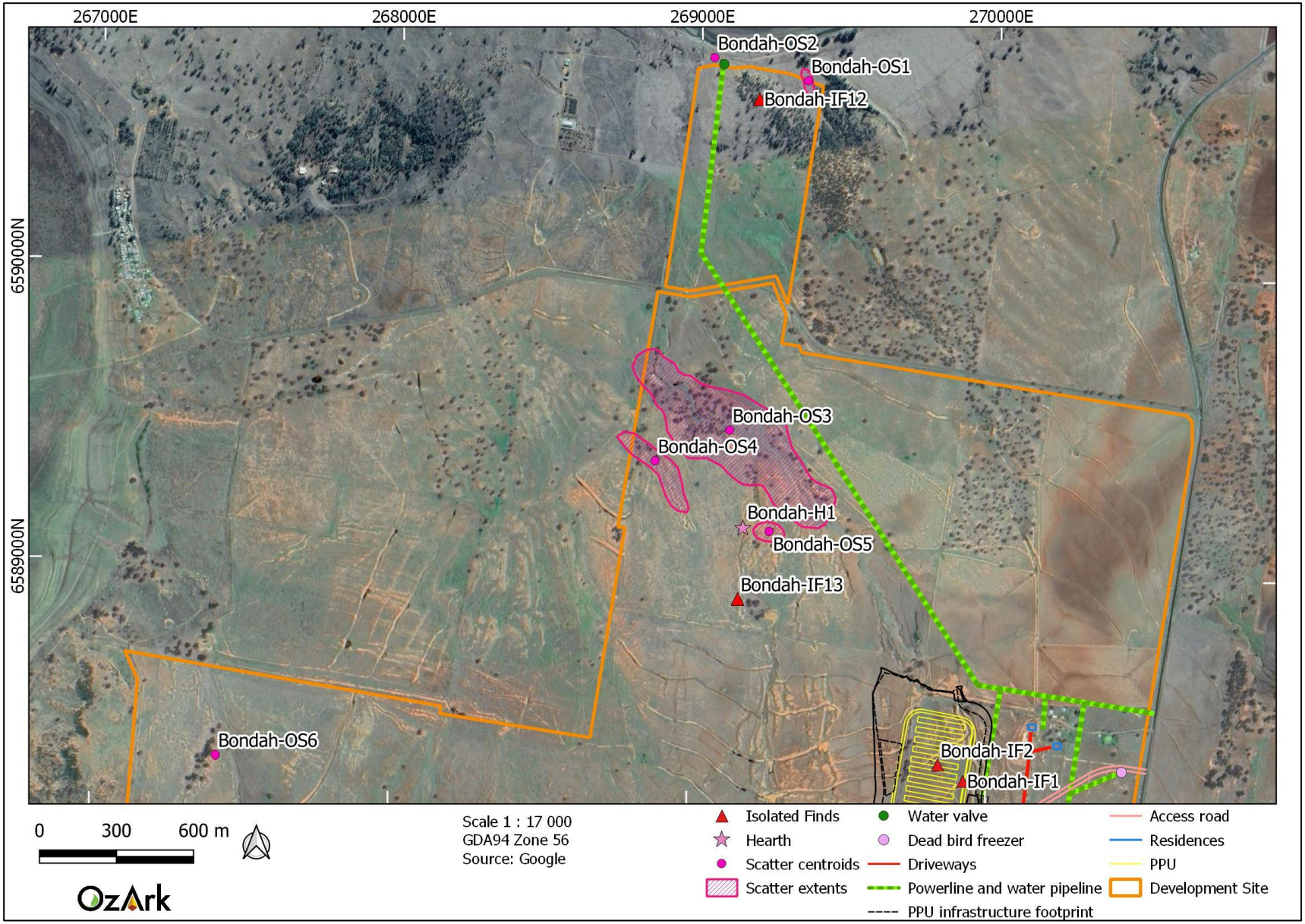
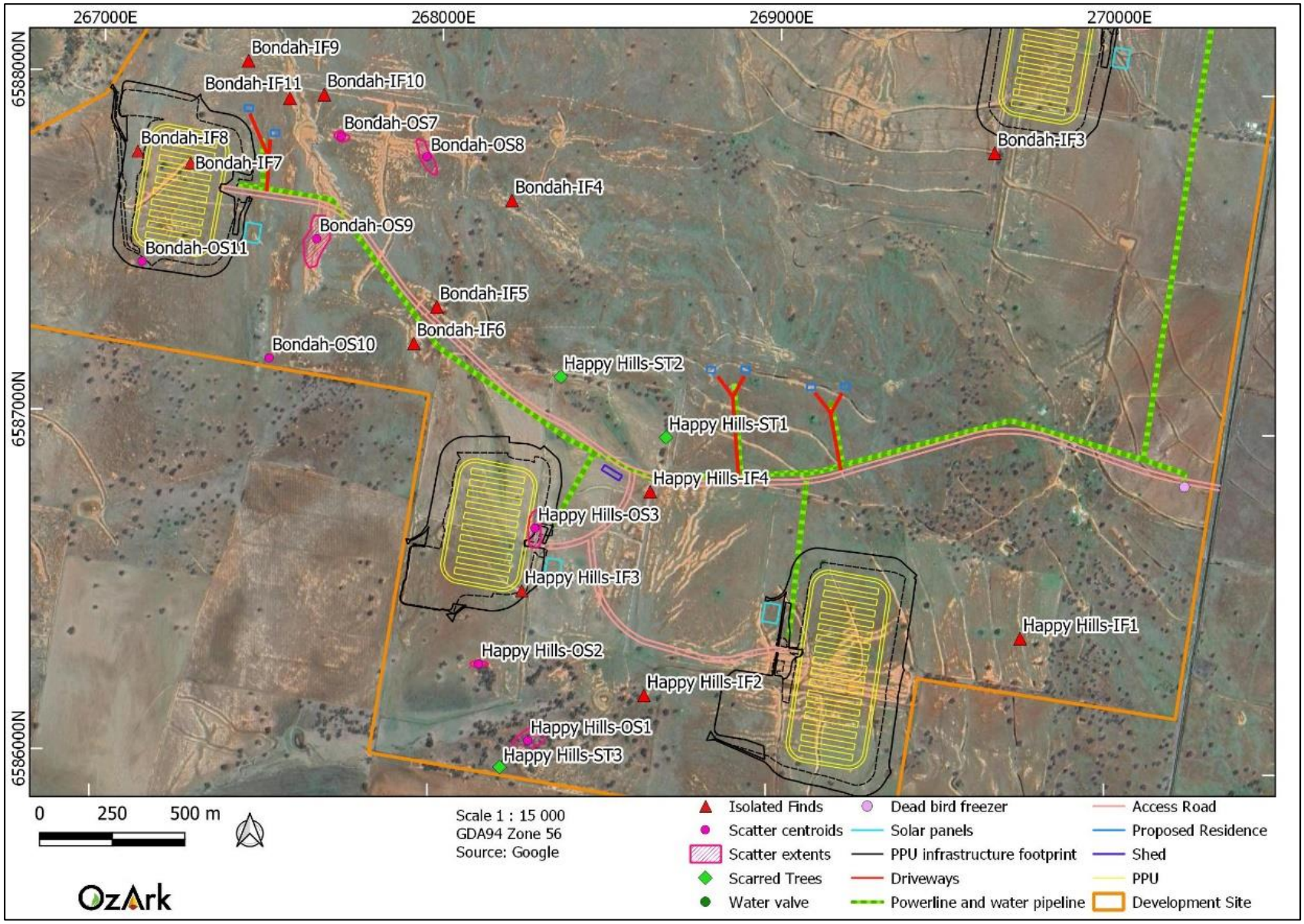


Figure 6-2: Location of recorded Aboriginal sites in relation to the Development impacts in the south of the Development Site.



6.1.1 Group 1: Avoidance

This group currently includes 22 sites which occur outside the impact area and are at no direct risk of harm from the Development. These sites are listed below:

- Happy Hills-IF1
- Happy Hills-IF2
- Bondah-IF3
- Bondah-IF4
- Bondah-IF6
- Bondah-IF9
- Bondah-IF10
- Bondah-IF11
- Bondah-IF12
- Bondah-IF13
- Happy Hills-OS1
- Happy Hills-OS2
- Bondah-OS1
- Bondah-OS4
- Bondah-OS5
- Bondah-OS6
- Bondah-OS7
- Bondah-OS8
- Bondah-OS10
- Happy Hills-ST1
- Happy Hills-ST2
- Happy Hills-ST3

6.1.2 Group 2: Sites requiring salvage

Seven sites currently fall into this group:

- Happy Hills-IF3
- Bondah-IF1
- Bondah-IF2
- Bondah-IF7
- Bondah-IF8
- Happy Hills-OS3
- Bondah-OS11

Detailed recording and collection of surface artefacts will be the primary management approach for sites in this category.

6.1.2.1 Archaeological salvage: surface collection of artefacts

The following methodology will apply to all Group 2 sites:

- All visible artefacts at a site should be flagged in the field
- The site should be photographed after flagging and before recording
- All artefacts should have the following artefact information entered directly into a GPS unit:
    - Location
    - Artefact type
    - Size
    - Reduction level
    - Integrity

- Raw material
- Notes.

- A selection of indicative and / or unusual artefacts from each site will be photographed
- Once all recording is complete, the artefacts will be collected according to site zones (if the site is large) with artefacts from each zone being kept separate
- Should the collection team encounter a human burial, all work should cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought (refer to **Section 7.1**)
- The recording of the artefacts recovered will be completed in the field and this data would be incorporated into a report
- The supervising archaeologist would be responsible for submitting an Aboriginal Site Impact Recording Form (ASIRF) to the Aboriginal Heritage Information Management System (AHIMS) to update the register with the results of the salvage works.

6.1.3 Group 3: Sites requiring management

There are five sites that are located within 55 m of the Disturbance Area and may be unintentionally harmed by the Development unless specific management (fencing) is undertaken to avoid impacts. Due to their proximity to proposed works, these sites are at greater risk of unintentional impact when compared to sites located further away.

Further, RAPs have requested that the scarred trees be fenced with a 5 m buffer to ensure the scars are not impacted by any livestock which will be kept on the property.

6.1.3.1 Site requiring permanent fencing

Three sites (Happy Hills-IF4, Bondah-IF5 and Bondah-OS9) require permanent fencing given their proximity to the access road which will be utilised during the operation of the Development. These sites should be permanently fenced with a 10 m buffer and signed prior to works beginning to provide adequate protection. Permanent fencing, at a minimum, can consist of star pickets with clearly visible and durable bunting. A sign should be attached to the fence noting that the area is an ‘environmental zone’ (it is preferred not to call it a ‘heritage site’ as this could encourage vandalism/theft) and providing a contact number should assistance be required.

Three sites (Happy Hills ST-1 to ST-3) do not require permanent fencing as they are distant from the Development impacts, however, the proponent has elected to fence the trees with a 5 m buffer at the request of the RAPs to ensure they are not impacted by any livestock which will be kept on the property.

6.1.3.2 Sites requiring temporary fencing

Sites Bondah-OS2 and Bondah-OS3 also require fencing, but only during the construction of the powerline and water pipeline. These sites should also be fenced with a 10 m buffer and signed prior to works beginning to provide adequate protection.

6.2 MANAGEMENT OF SALVAGE ARTEFACTS

6.2.1 Intermediate provisions for artefact storage

Until the long-term management of the artefacts can be enacted, OzArk will undertake to store any artefacts retrieved in a locked cupboard at the OzArk office: 145 Wingewarra Street, Dubbo, NSW.

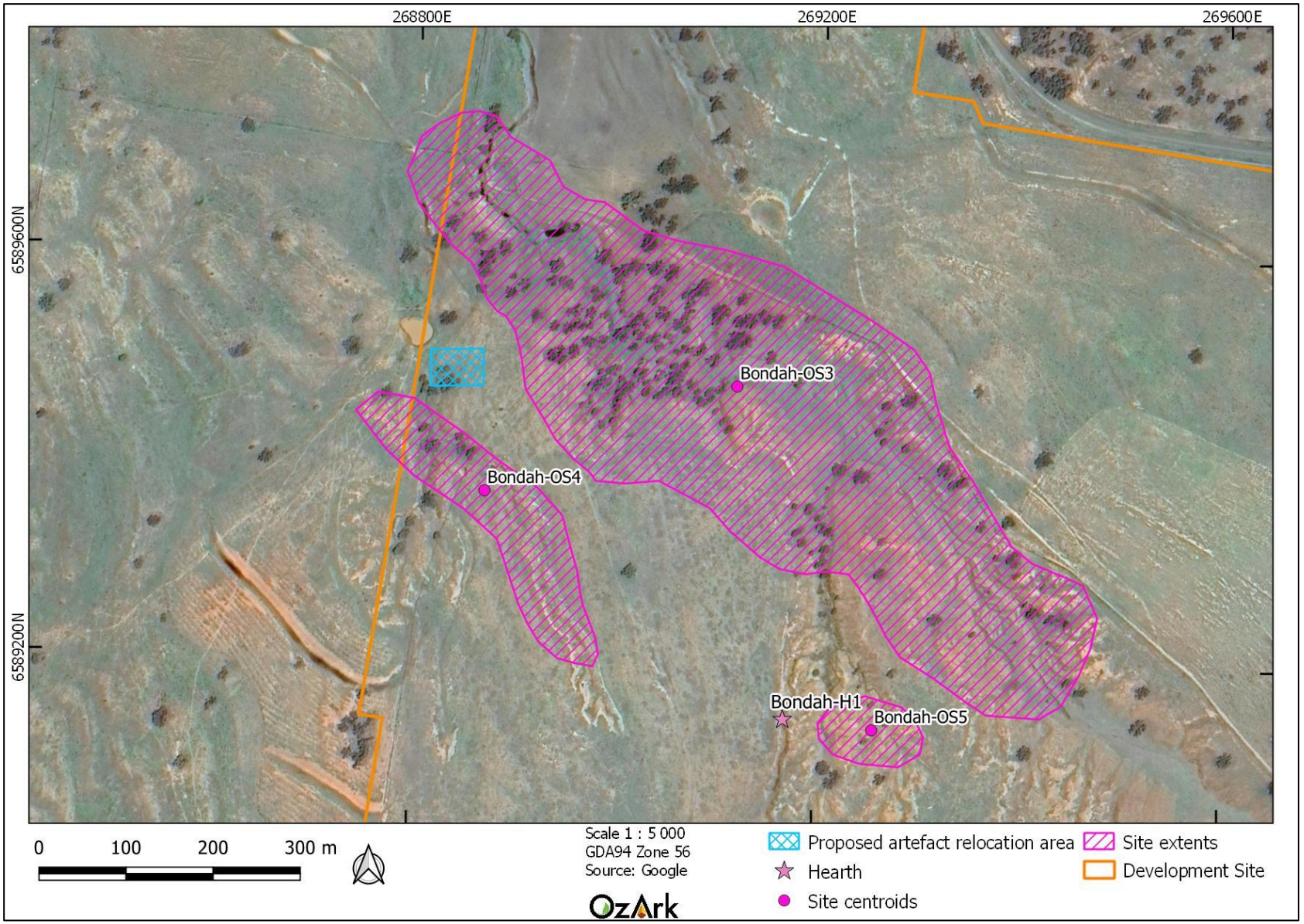
6.2.2 Long-term care and control of artefacts

Following consultation with RAPs, the preferred option for the long-term management of the salvaged artefacts is to relocate them near to sites Bondah-OS3 and Bondah-OS4 (**Section 3.2**).

As such, it is proposed that the artefacts will be placed on the ground surface as opposed to reburied at the location shown in **Figure 6-3**. The artefacts will be placed outside the defined extents of Bondah-OS3 and Bondah-OS4. No future development related to the Development is planned at this location.

A site card will be submitted to the AHIMS registrar for the relocation area.

Figure 6-3: Proposed artefact relocation area.



6.3 SALVAGE REPORT

A technical report will be prepared documenting the results of the Aboriginal site salvage in accordance with the Code of Practice. This report will be prepared within four months of the conclusion of all salvage activities. A copy of the salvage report will be sent to the AHIMS register so that the information gained is available for the general public.

A copy of the report will be archived by the Proponent for future reference.

7 DETAILED PROCEDURES

7.1 DISCOVERY OF ABORIGINAL ANCESTRAL REMAINS

The procedure related to the discovery of suspected human skeletal material are based on Requirement 25 of the Code of Practice.

In the event known or suspected Aboriginal skeletal remains are encountered during the course of Development the following procedure will be followed:

- All work close to the find will cease immediately and a minimum buffer of 10 m in all directions from the visible remains will be cordoned off with temporary construction fencing
- The find will be immediately reported to the site supervisor who will immediately advise the Proponent.
- The Proponent will promptly contact the nearest police station (as required for all human remains discoveries)
- The Proponent will contact Heritage NSW (131 555) for advice on identification of the skeletal material as Aboriginal and management of the material
- If the remains are Aboriginal ancestral remains, the RAPs will be contacted and consultative arrangements will be made to discuss ongoing care of the remains, including advice on recommended forensic anthropologists.
- Recommencement of work in the area surrounding the Aboriginal ancestral remains can only occur once the updated ACHMP for the Development has been endorsed by the Secretary (or their delegate), or the Secretary is satisfied that the measures to be implemented in managing the remains have been undertaken and makes a written direction in that regard.

7.2 DISCOVERY OF NEW ABORIGINAL SITES

7.2.1 Initial procedure

In the event of discovery of unrecorded Aboriginal sites which are more than 50 m from previously recorded boundaries of Aboriginal sites, all work close to the discovery will cease and an area of 10 m around the object(s) fenced with temporary construction fencing. An archaeologist will be contacted to determine the veracity of the Aboriginal object(s) present.

If determined to be a new site, the location will be visited by an archaeologist and a RAP representative to record the site and to determine its significance. New sites will be registered in the AHIMS registrar (**Section 8.3.1**) with management undertaken in accordance with depending on proximity of the site to the impact area.

7.2.2 New sites within impact areas

If a newly discovered site is in an impact area, the site will be temporarily fenced, and the Aboriginal object(s) will be salvaged in accordance with the procedures set out in (**Section 6.1.2**). On the completion of salvage at such sites, an ASIRF will be completed and submitted to the AHIMS registrar within one month after completion of salvage fieldwork (**Section 8.3.2**). Copies of the ASIRF will be archived by the Proponent. Recommencement of work should only take place at the site location once the ASIRF has been approved by AHIMS.

A technical report will be completed within four months of the salvage excavation and a copy sent to the AHIMS register. The Proponent will also archive a copy of the report for future reference.

7.2.3 New sites within non-impact areas

If the site is not within 55 m of an impact area there is no requirement to fence the site. If the site is within 55 m of the impact area, fencing of the site following the procedure set out in **Section 6.1.3**) and should be undertaken. Recommend of work may only take place once the required management measures are implemented.

Proposed impact by the Development or related activities to any site within non-impact areas, other than the rescue salvage described above, will require an Aboriginal Heritage Impact Permit to be obtained from the Heritage NSW, unless it is part of a future modification to SSD-7704.

8 RECORD KEEPING AND REPORTING REQUIREMENTS

8.1 SALVAGE RECORDS

Copies of all records relevant to salvaged or relocated Aboriginal objects will be provided to the Proponents for their records.

Records relating to Aboriginal heritage include:

- This ACHMP
- Spatial data and maps showing site locations
- Site cards and ASIRFs
- Reports.

8.2 SALVAGE REPORTS

A technical report will be prepared documenting the results of the Aboriginal site salvage in accordance with the Code of Practice.

8.3 REPORTING REQUIREMENTS

8.3.1 Discovery of Aboriginal objects

Under s89A of the NPW Act, it is a requirement that Heritage NSW is notified of the existence of Aboriginal object(s) as soon as practicable after they are first identified. This is usually done through the completion of an Aboriginal Site Card which is submitted to the AHIMS registrar for inclusion on the Aboriginal sites database. Information regarding AHIMS and site recording forms can be downloaded from the AHIMS registrar.

8.3.2 Reporting impact to Aboriginal sites

Although not strictly required by the NPW Act, Heritage NSW expects that information on authorised impacts to Aboriginal sites be reported to them on the ASIRF which can be downloaded from the AHIMS registrar.

9 DOCUMENT IMPLEMENTATION

9.1 REVIEW AND IMPROVEMENT

The ACHMP will be reviewed every five years at a minimum or following any salvage activities, a change in legislation or modification to Development Consent containing conditions relevant to Aboriginal cultural heritage. This will include a review of performance and consideration of ongoing consultation. This will ensure the adequacy of the ACHMP and allow for opportunities of adaptive management and continual improvement.

Changes may be made to the ACHMP in the following circumstances:

- Where new Aboriginal sites are discovered which require specific management approaches proportionate to their cultural significance and which are not otherwise covered in this ACHMP
- Where approved modifications to the Development introduce new impacts on Aboriginal heritage which are not generally covered by this ACHMP
- Where approved changes to the Development change or remove previously planned impacts on Aboriginal heritage where mitigation was proposed in the ACHMP but is no longer required.

Where changes are made to the ACHMP, a draft will be subject to Aboriginal consultation in accordance with the ACHMP. Matters raised in consultation which are specific to the changes in the ACHMP may be acknowledged and addressed in the revised ACHMP.

9.2 ACCOUNTABILITIES

Who	Responsibilities
The Proponent	Responsible for coordinating the implementation of this ACHMP and for ensuring that the review of this ACHMP is undertaken. Responsible for ensuring that all personnel involved in the construction and operation of the development are suitably informed of the need to protect Aboriginal cultural heritage. Responsible for advising the Aboriginal community of operational changes relevant to the management of Aboriginal cultural heritage.
Aboriginal community	Responsible for providing expertise and appropriate and timely feedback in relation to the management of Aboriginal cultural heritage.
Archaeologist	Responsible for providing expertise in relation to the management of Aboriginal archaeology.

9.3 CHANGE INFORMATION

Full details of the document history are recorded in the document control register, by version.

A summary of the current change is provided below.

Version	Date	Review team	
1.0	2020	OzArk, the Proponent	ACHMP developed based on study conducted by OzArk 2018.

REFERENCES

DECCW 2010 — Department of Environment, Climate Change and Water, Sydney (now Heritage NSW). *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

OzArk 2018 — OzArk Environment & Heritage. 2018. *Aboriginal Cultural Heritage Assessment Report: Rushes Creek Poultry Production Farm, Rushes Creek NSW, Tamworth Regional Local Government Area.* Report to ProTen Tamworth Pty Limited.

SLR 2018 — SLR Consulting Australia Pty Ltd. 2018. *Rushes Creek Poultry Production Farm Environmental Impact Statement.* Report to ProTen Tamworth Pty Limited.

APPENDIX 1: DEVELOPMENT CONSENT CONDITIONS RELEVANT TO ABORIGINAL HERITAGE

ABORIGINAL HERITAGE

Aboriginal Cultural Heritage Management Plan (ACHMP)

B33. Before the commencement of any clearing or construction works, the Applicant must prepare an ACHMP for the development. The plan must form part of the CEMP required by condition C2 and must:

- (a) be prepared by a suitably qualified and experienced expert in consultation with the Registered Aboriginal Parties and EES;
- (b) be submitted to the satisfaction of the Planning Secretary prior to construction of any part of the development;
- (c) describe the management actions for all Aboriginal sites within the development site;
- (d) describe the measures to salvage the artefacts in Happy Hills-IF3, Bondah-IF1, Bondah-IF2, Bondah-IF7, Bondah-IF8, Happy Hills-OS3 and Bondah-OS11, including mapping, analysis and collection, and protect them in perpetuity; and
- (e) include a program of excavation and reporting of the feature known as Bondah H1, in consultation with the Registered Aboriginal Parties and ESS.

B34. The Applicant must:

- (a) not commence construction until the Aboriginal Cultural Heritage Management Plan is approved by the Planning Secretary; and
- (b) implement the most recent version of the Aboriginal Cultural Heritage Management Plan approved by the Planning Secretary for the duration of the development.

Unexpected Finds Protocol

B35. If any item or object of Aboriginal heritage significance is identified on site:

- (a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately;
- (b) a 10 m wide buffer area around the suspected item or object must be cordoned off; and
- (c) the Heritage Division of DPC must be contacted immediately.

B36. Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

APPENDIX 2: GOVERNMENT CORRESPONDENCE

Our ref: DOC21/169400
Senders ref: email 08/03/2021

Industry Assessments
Department of Planning, Industry and Environment
4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

Attention: Ms Sally Munk

Dear Ms Munk

RE: Rushes Creek Poultry Farm SSD-7704 – Draft Aboriginal Cultural Heritage Management Plan (ACHMP)

I am writing to provide advice with regard to the proposed Rushes Creek Poultry Farm draft ACHMP.

Heritage NSW has reviewed the draft ACHMP and concurs with the findings and recommendations contained therein.

We note the changed management proposal for Aboriginal hearth site "Bondah-H1". We note that the site lies outside of the proposed impact footprint for the project and that the majority of Aboriginal stakeholders preferred that no excavation of the site occur. Based on these reasons Heritage NSW supports the decision not to excavate site "Bondah-H1"

If you have any questions about this advice, please do not hesitate to contact Mr Roger Mehr, Archaeologist, roger.mehr@environment.nsw.gov.au or 0459075354.

Yours sincerely

Dr Samantha Higgs
Senior Team Leader - Aboriginal Cultural Heritage Regulation - North
Heritage NSW

Date: 4 May 2021

Locked Bag 5020 Parramatta 2124

E: heritagemailbox@environment.nsw.gov.au

1

Planning, Industry & Environment

Mr Bill Williams
Chief Executive Officer
ProTen Pty Ltd
PO Box 1746
NORTH SYDNEY NSW 2060

14/05/2021

Dear Mr Williams

Rushers Creek Poultry Production Farm (SSD-7704)
Aboriginal Cultural Heritage Management Plan – Condition B33

I refer to the Aboriginal Cultural Heritage Management Plan (ACHMP) which was submitted in accordance with Condition B33 of Schedule 2 of the consent for the Rushers Creek Poultry Production Farm (SSD-7704).

The Department has carefully reviewed the document and is satisfied that it addresses the requirements of Conditions B33.

Accordingly, the Planning Secretary has approved the ACHMP (Revision 3.0, dated 4 May 2021). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact David Koppers on 9373 2869 or at david.koppers@planning.nsw.gov.au.

Yours sincerely

Joanna Bakopanos
A/Director
Industry Assessments

As nominee of the Planning Secretary

APPENDIX 3: ABORIGINAL COMMUNITY CONSULTATION

Appendix 3 Figure 1: Aboriginal Community Consultation Log

Aboriginal Consultation Log - Rushes Creek			
Date	**Organisation**	**Comment**	**Method**
13/11/2020	T&G Culture Consultants	Brendan Fisher (BF) sent post-project approval letter	Postal
13/11/2020	Richard Slater	BF sent post-project approval letter	Postal
13/11/2020	DFTV Enterprises	BF sent post-project approval letter	Email
13/11/2020	Gomery Cultural Consultants	BF sent post-project approval letter	Email
13/11/2020	Brian Draper	BF sent post-project approval letter	Email
13/11/2020	Michael Long White Cockatoo Aboriginal Corporation	BF sent post-project approval letter	Email
13/11/2020	Tamworth LALC	BF sent post-project approval letter	Email
13/11/2020	Gomeroi People NC2011/006 C/- NTSCORP	BF sent post-project approval letter	Email
13/11/2020	Natasha Rodgers	BF sent post-project approval letter	Email
13/11/2020	AT Gomilaroi Cultural Consultancy	BF sent post-project approval letter	Email
13/11/2020	Veronica Talbott	BF sent post-project approval letter	Email
16.11.20	Gomeroi People NC2011/006 C/- NTSCORP	Rebecca Hardman (RH) received response: *I refer to the attached letter. I will seek to get instructions on this matter from the Gomeroi Applicant. However, I expect that the Applicant would want to discuss the proposal in person given the potential impact on their cultural heritage. I will seek to get a response to you in the coming weeks, however it may not be prior to 24 November.*	Email
17.11.20	Michael Long White Cockatoo Aboriginal Corporation	RH received response: *I received your letter dated 13 November 2020 regarding rushes creek and I find it very hard for me as RAP that there has been known feedback or RAP meeting appointed to address the archaeology survey that was conducted as well cultural values of this location.* *And I would like to visit the site before any impacts go forward.*	Email
20.11.20	Gomeroi People NC2011/006 C/- NTSCORP	Stephanie Rusden (SR) responded: *Thank you for your email and apologies for the delay in getting back to you.* *If you are able to provide a date that we are likely to receive some feedback from the Gomeroi Applicant that would be greatly appreciated. We also note that they are likely to want to discuss in person and we have flagged this with our client.*	Email
20.11.20	Michael Long White Cockatoo Aboriginal Corporation	SR responded: *Thank you for your email. Currently there are no site visits planned as part of the preparation of the Aboriginal Cultural Heritage Management Plan, however we have flagged your request with the client and will be in touch once we hear from them.*	Email
26.11.20	Tamworth LALC	RH received feedback	Email
26.11.20	Tamworth LALC	RH thanked Fiona	Email
1.12.20	Veronica Talbott	BF sent follow up email to get feedback on the letter sent 13 November 2020.	Email
1.12.20	Natasha Rodgers	BF sent follow up email to get feedback on the letter sent 13 November 2020.	Email
1.12.20	Aaron Talbott	BF sent follow up email to get feedback on the letter sent 13 November 2020.	Email

Aboriginal Consultation Log - Rushes Creek			
1.12.20	Brian Draper	BF sent follow up email to get feedback on the letter sent 13 November 2020.	Email
1.12.20	DFTV Enterprises	BF sent follow up email to get feedback on the letter sent 13 November 2020.	Email
1.12.20	Gomery Cultural Consultants	BF sent follow up email to get feedback on the letter sent 13 November 2020.	Email
1.12.20	Gomeroi People NC2011/006 C/- NTSCORP	SR sent follow up email to get feedback on the letter sent 13 November 2020.	Email
1.12.20	Michael Long White Cockatoo Aboriginal Corporation	SR sent the 2018 ACHAR noting it provides the site information and may assist in providing feedback requested.	Email
7.12.20	T&G Culture Consultants	Taylor Foster (TF) called Tony Griffiths for feedback regarding hearth excavation and long term management plan. No answer. Called again within the hour and the phone was disconnected	Phone
7.12.20	Gomeroi People NC2011/006 C/- NTSCORP	TF called Mishka Holt for feedback regarding hearth excavation and long term management plan. No answer.	Phone
7.12.20	Natasha Rodgers	TF called Natasha for feedback regarding hearth excavation and long term management plan. No answer.	Phone
7.12.20	AT Gomilaroi Cultural Consultancy	TF called Aaron for feedback regarding hearth excavation and long term management plan. No answer.	Phone
7.12.20	Veronica Talbott	TF called Veronica Talbott for feedback regarding hearth excavation and long term management plan. Does not want hearth excavated and wants artefacts reburied. Mentioned her concern over burials in the area.	Phone
7.12.20	Gomery Cultural Consultants	TF called for feedback regarding hearth excavation and long term management plan. David said he would like the hearth to be excavated and would prefer a care agreement. Also updated his home address.	Phone
7.12.20	DFTV Enterprises	BF sent follow up email regarding hearth excavation and long term management plan as no phone number was listed	Email
8.12.20	White Cockatoo Aboriginal Consulting	Micheal Long called and spoke to TF in regards to Rushes Creek. Against the excavation of the hearth. Also wanted to register complaint about the consultation process and other RAP parties involved. Said that he did not like the other RAP parties who've been involved. Stated the hearth excavation should not have been suggested. Said that he had not been involved in the work leading up to this point and that he would like a site inspection. Wants to know what cultural values have been listed	Phone
8.12.20	Gomeroi People NC2011/006 C/- NTSCORP	Steve Talbott called and spoke to TF regarding the Rushes Creek Project. He expressed he was against the excavation of the hearth and for the reburial of artefacts. He requested Steph call him as he was unhappy with the hearth excavation being an option.	Phone
8.12.20	T&G Culture Consultants	TF called again in regards to Rushes Creek feedback. Phone was disconnected. No other phone numbers or emails are listed.	Phone
8.12.20	Richard Slater	TF could not call to follow up feedback for Rushes Creek as no phone numbers or emails are listed.	
8.12.20	Gomeroi People NC2011/006 C/- NTSCORP Mishka Holt	TF called again in regards to Rushes Creek feedback. No answer. TF asked BF to resend emails he previously sent to clients.	Phone

Aboriginal Consultation Log - Rushes Creek			
8.12.20	Natasha Rodgers	TF called again in regards to Rushes Creek feedback. No answer. TF asked BF to resend emails he previously sent to clients.	Phone
8.12.21	Gomeroi People NC2011/006 C/- NTSCORP	BF resent email to Mishka as requested containing post approval letter and ACHAR.	Email
8.12.20	Michael Long White Cockatoo Aboriginal Corporation	BF resent email to Michael as requested containing post approval letter and ACHAR.	Email
8.12.20	Gomeroi People NC2011/006 C/- NTSCORP	Mishka Holt read BF's email (resend of the post-project approval letter).	Email
9.12.20	Gomeroi People NC2011/006 C/- NTSCORP	BF received a call from James Mcleod in regard to community concerns with how the consultation is being handled. He forwarded the Gomeroi People's concern that letters were not sufficient enough to provide any feedback. The Gomeroi people would like a "visual idea" on the future of the project, which should be done through a physical meeting with all RAPS and archaeologists involved to be present.	Email
9.12.20	Gomeroi People NC2011/006 C/- NTSCORP	Jodie Benton (JB) contacted James McLeod to inform him of the background context. She also discussed that the Gomeroi people are not alone in their concerns with consultation of the project, as other RAP groups have expressed in a similar way. It was discussed that a possible meeting may occur in Tamworth for all RAPs and archaeologists to get together and discuss the project, so that adequate feedback can be provided.	Phone
12.1.21	Gomeroi People NC2011/006 C/- NTSCORP	SR spoke to Steve Talbott regarding the excavation of the hearth. Steve is opposed to the excavation as it is outside the impact footprint. SR advised there will likely be a meeting to discuss the potential excavation and would let Native Title know when this is	Phone
19.1.20	AT Gomilaroi Cultural Consultancy	BF received email from Aaron Talbott requesting update of contact details, as well as a project update and post involvement in care plan.	Email
20.1.20	AT Gomilaroi Cultural Consultancy	BF updated contact details and emailed Aaron a brief project update.	Email
22.1.20	T&G Culture Consultants	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Postal
22.1.20	Richard Slater	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Postal
22.1.20	DFTV Enterprises	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Gomery Cultural Consultants	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Brian Draper	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Michael Long White Cockatoo Aboriginal Corporation	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Tamworth LALC	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Gomeroi People NC2011/006 C/- NTSCORP	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Natasha Rodgers	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	AT Gomilaroi Cultural Consultancy	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email

Aboriginal Consultation Log - Rushes Creek			
22.1.20	Veronica Talbott	TF sent AFGM Invitation, ACHMP review letter and draft ACHMP	Email
22.1.20	Michael Long White Cockatoo Aboriginal Corporation	Michael Long email response to ACHMP draft with recommendations to the management plan.	Email
1.2.21	T&G Culture Consultants	TF called to ascertain attendance to AFGM meeting. The phone number supplied is disconnected	Phone
1.2.22	Gomery Cultural Consultants	TF called to ascertain attendance to AFGM meeting. Cannot attend the meeting. I said if there were any topics or concerns, he wished to discuss, he could send through an email and this would be taken on board.	Phone
1.2.22	Brian Draper	TF called to ascertain attendance to AFGM meeting. Brian said that he will do his best to attend.	Phone
1.2.22	Michael Long White Cockatoo Aboriginal Corporation	TF called to ascertain attendance to AFGM meeting. No answer, a message was left.	Phone
1.2.22	Gomeroi People NC2011/006 C/- NTSCORP	TF called to ascertain attendance to AFGM meeting. James was unavailable but a message was passed on for James to call back with response.	Phone
1.2.22	Natasha Rodgers	TF called to ascertain attendance to AFGM meeting. No response left a message.	Phone
1.2.22	AT Gomilaroi Cultural Consultancy	TF called to ascertain attendance to AFGM meeting. Aaron is coming.	Phone
1.2.22	Veronica Talbott	TF called to ascertain attendance to AFGM meeting. No answer, left a message.	Phone
1.2.22	DFTV Enterprises	TF sent follow up email to ascertain attendance to AFGM meeting. Awaiting response	Email
1.2.22	Michael Long White Cockatoo Aboriginal Corporation	TF sent follow up email to ascertain attendance to AFGM meeting. Awaiting response	Email
1.2.22	Gomeroi People NC2011/006 C/- NTSCORP	TF sent follow up email to ascertain attendance to AFGM meeting. Awaiting response	Email
1.2.22	Natasha Rodgers	TF sent follow up email to ascertain attendance to AFGM meeting. Awaiting response	Email
1.2.22	Veronica Talbott	TF sent follow up email to ascertain attendance to AFGM meeting. Awaiting response	Email
1.2.21	Michael Long White Cockatoo Aboriginal Corporation	Called back. Confirmed he would send a representative to the meeting. Would like to touch base about the letter he sent in response to the ACHMP.	Phone
1.2.22	Gomeroi People NC2011/006 C/- NTSCORP	James McLeod emailed TF and RH stating he would RSVP soon.	Email
2.2.21	Natasha Rodgers	Phoned Harrison Rochford (HR). Still unsure of attendance, would like to be listed as a possible attendee.	Phone
1.2.22	Gomeroi People NC2011/006 C/- NTSCORP	TF called to ascertain attendance to AFGM meeting. James was unavailable but a message was passed on for James to call back with response by 4pm today.	Phone
1.2.22	Gomeroi People NC2011/006 C/- NTSCORP	TF also sent final follow up email to ascertain attendance to AFGM.	Phone
2.2.21	Natasha Rodgers	TF phoned to ascertain attendance to AFGM, could not get through and left a message.	Phone
2.2.21	Natasha Rodgers	TF also sent final follow up email to ascertain attendance to AFGM.	Email
2.2.21	Veronica Talbott	TF phoned to ascertain attendance to AFGM, could not get through and left a message.	Phone

Aboriginal Consultation Log - Rushes Creek			
2.2.21	Veronica Talbott	TF also sent final follow up email to ascertain attendance to AFGM.	Email
2.2.22	DFTV Enterprises	TF sent follow up email to ascertain attendance to AFGM meeting. Awaiting response	Email
2.2.21	Veronica Talbott	RH received call confirming will send someone on her behalf as she is not in the area.	Phone
3.2.21	Michael Long White Cockatoo Aboriginal Corporation	SR called to discuss feedback. No answer	Phone
3.2.21	Michael Long White Cockatoo Aboriginal Corporation	SR sent response to feedback	Email
3.2.21	Gomeroi People NC2011/006 C/- NTSCORP	TF and RH received response to AFGM email saying that representatives would be unable to attend and provided additional email for contact.	Email
4.2.21	Gomeroi People NC2011/006 C/- NTSCORP	RH thanked Maeve for additional contact information and noted additional time request	Email
15.2.21	AT Gomilaroi Cultural Consultancy	TF received email response to AFGM and draft ACHMP. "YAAMA Taylor. Apologies for meeting. I Agree with the majority in regard to methodology and salvage program. AT Gomilaroi Cultural Consultancy requesting a field position for the salvage works. Look forward to your response. Yalu (regards) Aaron Talbott"	Email
15.2.21	AT Gomilaroi Cultural Consultancy	TF responded "Hi Aaron, Thanks for taking the time to review the Aboriginal Cultural Heritage Management Plan and provide feedback. We have noted that AT Gomilaroi Cultural Consultancy would like to be involved in the salvage program"	Email
15.2.21	DFTV Enterprises	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Gomery Cultural Consultants	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Brian Draper	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Michael Long White Cockatoo Aboriginal Corporation	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Tamworth LALC	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Gomeroi People NC2011/006 C/- NTSCORP	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Natasha Rodgers	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	AT Gomilaroi Cultural Consultancy	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email
15.2.21	Veronica Talbott	TF sent AFGM minutes and reminder to respond to ACHMP review by deadline	Email

Appendix 3 Figure 2: Project background summary and request for feedback regarding hearth and long-term management of salvaged artefacts



OzArk Environment & Heritage ABN 59 104 582 354

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Newcastle www.ozarkehm.com.au DUBBO NSW 2830

13 November 2020

Tamworth Local Aboriginal Land Council
PO Box 57
Tamworth NSW 2340
admin@tamworthlalc.com.au

RUSHES CREEK POULTRY FARM, NEAR TAMWORTH
EXCAVATION AND DATING OF BONDAH-H1

Dear Members,

Thank-you for your previous participation as a Registered Aboriginal Party (RAP) regarding the proposed Rushes Creek Poultry Production Farm (the Project), Rushes Creek Road, Rushes Creek, Tamworth Local Government Area (LGA).

The purpose of the letter is to provide some background on the approval of the Project and invite you to comment on the possibility of excavation of a hearth (Bondah-H1) identified within the Project area and the long-term management of salvaged artefacts..

Background

ProTen Tamworth Pty Ltd (ProTen), have received Development Consent (Application SSD 7704) from the Minister for Planning and Public Spaces, for the construction and operation of the Rushes Creek Poultry Production Farm.

The approval is dependent on the fulfilling of the Development Consent, which includes the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) addressing Conditions B33, B34, B35 and B36.

OzArk Environment & Heritage (OzArk) is currently preparing the ACHMP to address Conditions B33, B34, B35 and B36. Once the ACHMP has been drafted, this will be circulated to all RAPs for review.

Possible excavation of Bondah-H1

Prior to the draft ACHMP being circulated, OzArk would like to provide you with the opportunity to comment on the possibility of excavating Bondah-H1. Bondah-H1 is located outside the impact footprint of the Project, however excavation and subsequent dating of the hearth has been included as a condition by Heritage NSW as they see it as a good opportunity to gain further insight into Aboriginal occupation on the local area.

Condition B33 [e] states the ACHMP must:

> *Include a program of excavation and reporting of the feature known as Bondah-H1, in consultation with the Registered Aboriginal Parties and ESS [now Heritage NSW].*

OzArk Environment & Heritage

If there is support from the RAPs to excavate the hearth, OzArk will prepare a detailed methodology which will be included in the ACHMP. In brief, the excavation would include excavating only a portion of the hearth at a time, in order to minimise harm to the hearth as much as possible, until a suitable sample for dating can be retrieved and then reconstructing the hearth following excavation.

Long-term management of salvaged artefacts

Two options are presented below for consideration regarding the long-term management of the recovered Aboriginal objects which will be subject to surface collection following approval of the ACHMP. These include:

- Reburial in accordance with Requirement 26 "Stone artefact deposition and storage" in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*. This includes reburying the artefacts at an agreed upon location where no future development related to the Project is planned
- A RAP nominating themselves to apply for a Care Agreement to be entered into between the RAP and Heritage NSW.

Feedback

OzArk would like to provide you with 10 days to provide your preference and any comments on the possible excavation of Bondah-H1 and long-term management of salvaged artefacts. However, should you require further time, please let us know.

Please complete the brief form below and email through to rebecca@ozarkehm.com.au by **5pm Tuesday 24 November 2020**.

Your name: _____

Your organisation (if applicable): _____

Date _____

Do you agree for the excavation of Bondah-H1 and subsequent C14 (radiocarbon) dating techniques to determine the age of the hearth? This will result in a portion of the hearth being destroyed however it will be reconstructed following excavation.

I agree to the excavation of Bondah-H1 for the purposes of C14 dating:

Yes ☐ No ☐

Comments: _____

_____

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OzArk Environment & Heritage

Regarding the long-term management of artefacts which will be salvaged following approval of the ACHMP, I would prefer:

I agree to the excavation of Bondah-H1 for the purposes of C14 dating:

Reburial at a nearby location ☐ Apply for Care Agreement ☐

Comments: _____

_____

Should you have any comments or would like further information please feel free to contact our office by phone on (02) 6882 0118; or email at rebecca@ozarkehm.com.au.

Kind regards,

Stephanie Rusden
OzArk Senior Archaeologist

Appendix 3 Figure 3: RAP responses regarding hearth and long-term management of salvaged artefacts

OzArk Environment & Heritage ABN 59 104 582 354

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Newcastle www.ozarkehm.com.au DUBBO NSW 2830

13 November 2020

Tamworth Local Aboriginal Land Council
PO Box 57
Tamworth NSW 2340
admin@tamworthlalc.com.au

RUSHES CREEK POULTRY FARM, NEAR TAMWORTH
EXCAVATION AND DATING OF BONDAH-H1

Dear Members,

Thank-you for your previous participation as a Registered Aboriginal Party (RAP) regarding the proposed Rushes Creek Poultry Production Farm (the Project), Rushes Creek Road, Rushes Creek, Tamworth Local Government Area (LGA).

The purpose of the letter is to provide some background on the approval of the Project and invite you to comment on the possibility of excavation of a hearth (Bondah-H1) identified within the Project area and the long-term management of salvaged artefacts..

Background

ProTen Tamworth Pty Ltd (ProTen), have received Development Consent (Application SSD 7704) from the Minister for Planning and Public Spaces, for the construction and operation of the Rushes Creek Poultry Production Farm.

The approval is dependent on the fulfilling of the Development Consent, which includes the development of an Aboriginal Cultural Heritage Management Plan (ACHMP) addressing Conditions B33, B34, B35 and B36.

OzArk Environment & Heritage (OzArk) is currently preparing the ACHMP to address Conditions B33, B34, B35 and B36. Once the ACHMP has been drafted, this will be circulated to all RAPs for review.

Possible excavation of Bondah-H1

Prior to the draft ACHMP being circulated, OzArk would like to provide you with the opportunity to comment on the possibility of excavating Bondah-H1. Bondah-H1 is located outside the impact footprint of the Project, however excavation and subsequent dating of the hearth has been included as a condition by Heritage NSW as they see it as a good opportunity to gain further insight into Aboriginal occupation on the local area.

Condition B33 [e] states the ACHMP must:

> *Include a program of excavation and reporting of the feature known as Bondah-H1, in consultation with the Registered Aboriginal Parties and ESS [now Heritage NSW].*

OzArk Environment & Heritage

If there is support from the RAPs to excavate the hearth, OzArk will prepare a detailed methodology which will be included in the ACHMP. In brief, the excavation would include excavating only a portion of the hearth at a time, in order to minimise harm to the hearth as much as possible, until a suitable sample for dating can be retrieved and then reconstructing the hearth following excavation.

OzArk Environment & Heritage

Long-term management of salvaged artefacts

Two options are presented below for consideration regarding the long-term management of the recovered Aboriginal objects which will be subject to surface collection following approval of the ACHMP. These include:

- Reburial in accordance with Requirement 26 "Stone artefact deposition and storage" in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*. This includes reburying the artefacts at an agreed upon location where no future development related to the Project is planned
- A RAP nominating themselves to apply for a Care Agreement to be entered into between the RAP and Heritage NSW.

Feedback

OzArk would like to provide you with 10 days to provide your preference and any comments on the possible excavation of Bondah-H1 and long-term management of salvaged artefacts. However, should you require further time, please let us know.

Please complete the brief form below and email through to rebecca@ozarkehm.com.au by **5pm Tuesday 24 November 2020**.

Your name: Fiona Snape - CEO

Your organisation (if applicable): Tamworth Local Aboriginal Land Council

Date 26 November 2020

Do you agree for the excavation of Bondah-H1 and subsequent C14 (radiocarbon) dating techniques to determine the age of the hearth? This will result in a portion of the hearth being destroyed however it will be reconstructed following excavation.

I agree to the excavation of Bondah-H1 for the purposes of C14 dating:

Yes ☐ No ☑

Comments: _____

Regarding the long-term management of artefacts which will be salvaged following approval of the ACHMP, I would prefer:

I agree to the excavation of Bondah-H1 for the purposes of C14 dating:

Reburial at a nearby location ☐ Apply for Care Agreement ☑

Page 3

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Comments: _____

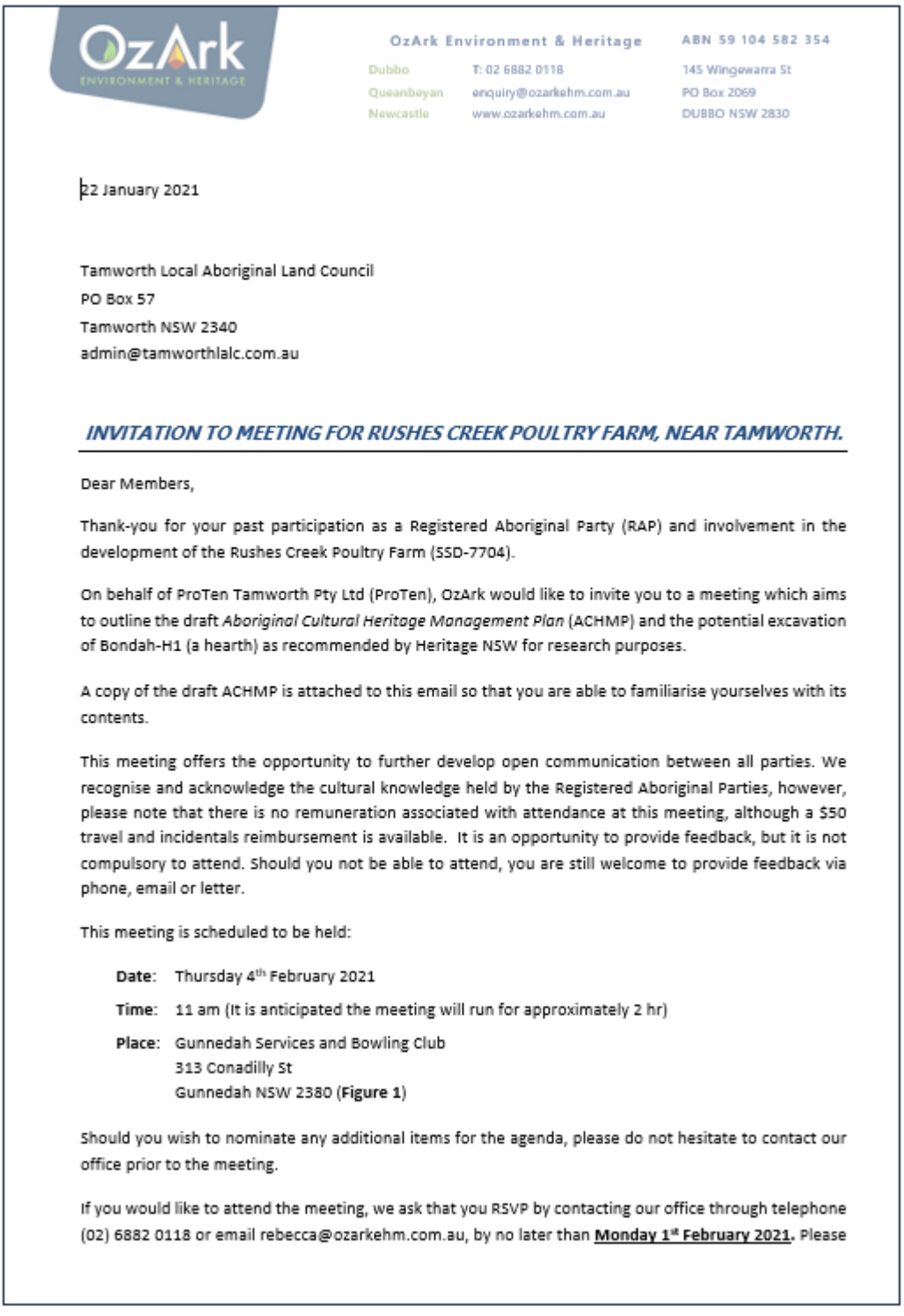
_____

Should you have any comments or would like further information please feel free to contact our office by phone on (02) 6882 0118; or email at rebecca@ozarkehm.com.au.

Kind regards,

Stephanie Rusden
OzArk Senior Archaeologist

Appendix 3 Figure 4: Invitation to Aboriginal Focus Group Meeting



OzArk Environment & Heritage ABN 59 104 582 354
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Queanbeyan enquiry@ozarkehm.com.au PO Box 2069
Newcastle www.ozarkehm.com.au DUBBO NSW 2830

22 January 2021

Tamworth Local Aboriginal Land Council
PO Box 57
Tamworth NSW 2340
admin@tamworthlalc.com.au

INVITATION TO MEETING FOR RUSHES CREEK POULTRY FARM, NEAR TAMWORTH.

Dear Members,

Thank-you for your past participation as a Registered Aboriginal Party (RAP) and involvement in the development of the Rushes Creek Poultry Farm (SSD-7704).

On behalf of ProTen Tamworth Pty Ltd (ProTen), OzArk would like to invite you to a meeting which aims to outline the draft *Aboriginal Cultural Heritage Management Plan* (ACHMP) and the potential excavation of Bondah-H1 (a hearth) as recommended by Heritage NSW for research purposes.

A copy of the draft ACHMP is attached to this email so that you are able to familiarise yourselves with its contents.

This meeting offers the opportunity to further develop open communication between all parties. We recognise and acknowledge the cultural knowledge held by the Registered Aboriginal Parties, however, please note that there is no remuneration associated with attendance at this meeting, although a $50 travel and incidentals reimbursement is available. It is an opportunity to provide feedback, but it is not compulsory to attend. Should you not be able to attend, you are still welcome to provide feedback via phone, email or letter.

This meeting is scheduled to be held:

Date: Thursday 4th February 2021

Time: 11 am (It is anticipated the meeting will run for approximately 2 hr)

Place: Gunnedah Services and Bowling Club
313 Conadilly St
Gunnedah NSW 2380 (**Figure 1**)

Should you wish to nominate any additional items for the agenda, please do not hesitate to contact our office prior to the meeting.

If you would like to attend the meeting, we ask that you RSVP by contacting our office through telephone (02) 6882 0118 or email rebecca@ozarkehm.com.au, by no later than **Monday 1st February 2021.** Please

OzArk Environment & Heritage

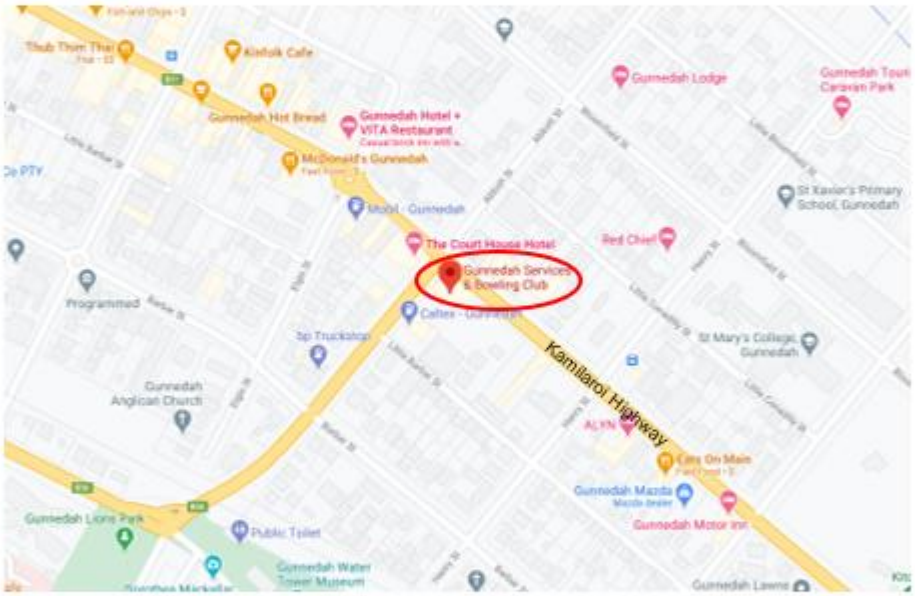
note RSVPs for this meeting are essential, follow up emails and phone calls will not be conducted and if no RSVPs are received the meeting will not be held.

If you have any queries, please feel free to contact our office.

Kind regards,

Rebecca Hardman
Consultation Officer

Figure 1: Meeting Location.



Appendix 3 Figure 5: Review of Aboriginal Cultural Heritage Management Plan

OzArk Environment & Heritage
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145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

22 January 2021

Members
Tamworth Local Aboriginal Land Council
PO Box 57
Tamworth NSW 2340
admin@tamworthlalc.com.au

RUSHES CREEK POULTRY FARM
REVIEW OF ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN

Dear Members,

Thank-you for your past participation as a Registered Aboriginal Party (RAP) and involvement in the development of the Rushes Creek Poultry Farm (SSD-7704).

On behalf of ProTen Tamworth Pty Ltd (ProTen), OzArk would like to invite you with the opportunity to review and provide feedback on the attached draft *Aboriginal Cultural Heritage Management Plan* (ACHMP).

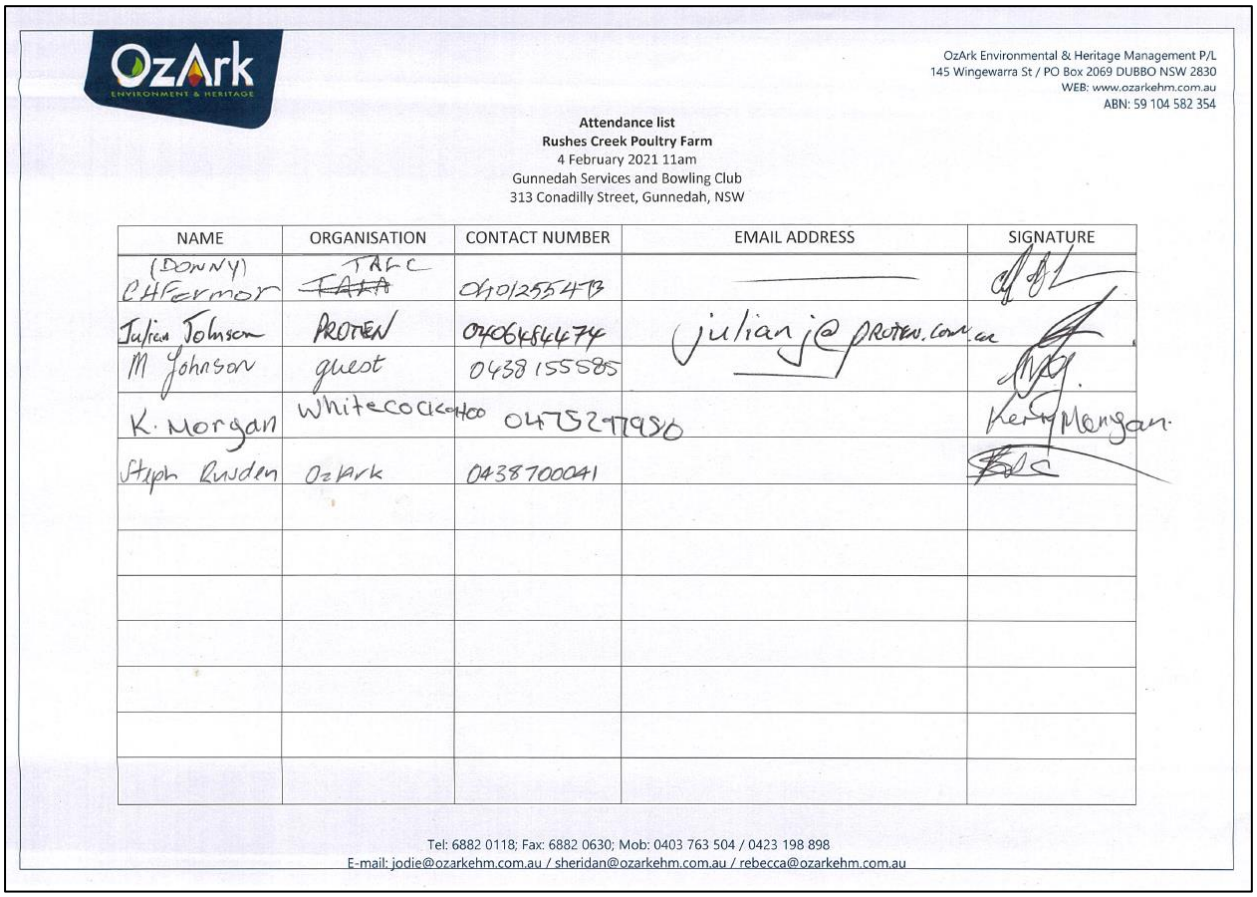
We request that any feedback on the ACHMP is supplied by **COB Friday 19 February 2021**. Feedback can be provided by phone, email, via post or at the Aboriginal Focus Group Meeting being held on Thursday 4 February 2021.

Should you need any help supplying feedback or have any queries, please do not hesitate to contact our office on (02) 6882 0118 or at Rebecca@ozarkehm.com.au.

Kind regards,

Rebecca Hardman
Consultation Officer

Appendix 3 Figure 6: Invitation to Aboriginal Focus Group Meeting attendance sheet



OzArk Environmental & Heritage Management P/L
145 Wingewarra St / PO Box 2069 DUBBO NSW 2830
WEB: www.ozarkehm.com.au
ABN: 59 104 582 354

Attendance list
Rushes Creek Poultry Farm
4 February 2021 11am
Gunnedah Services and Bowling Club
313 Conadilly Street, Gunnedah, NSW

NAME	ORGANISATION	CONTACT NUMBER	EMAIL ADDRESS	SIGNATURE
(DONNY) CHFermor	~~TAFA~~ TAFC	0410255473		
Julian Johnson	PROTEN	0406484474	julianj@proten.com.au	
M Johnson	guest	0438155585		
K. Morgan	Whitecockadoo	0475277950		Kerry Morgan.
Steph Ruden	OzArk	0438700041		

Tel: 6882 0118; Fax: 6882 0630; Mob: 0403 763 504 / 0423 198 898
E-mail: jodie@ozarkehm.com.au / sheridan@ozarkehm.com.au / rebecca@ozarkehm.com.au

Appendix 3 Figure 7: Aboriginal Focus Group Meeting minutes

OzArk Environment & Heritage ABN 59 104 582 354
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Newcastle www.ozarkehm.com.au DUBBO NSW 2830

ABORIGINAL FOCUS GROUP MEETING MINUTES: RUSHES CREEK POULTRY PRODUCTION FARM

Venue:	Gunnedah Services & Bowling Club 313 Conadilly St, Gunnedah NSW 2380	Date:	4 February 2021
Attendees:	OzArk: Stephanie Rusden ProTen: Julian Johnson Tamworth Local Aboriginal Land Council: Chris Fermon White Cockatoo: Kerry Morgan		
Chairperson:	Stephanie Rusden	Note taker:	Stephanie Rusden

Minutes of Meeting	
Project background and approval	♦ OzArk outlined the following with PowerPoint presentation: o Aboriginal heritage assessment completed in October 2016. o *Aboriginal Cultural Heritage Assessment Report* provided for comment on 29 August 2017. o 35 Aboriginal sites recorded during survey (one hearth, three scarred trees, 14 artefact scatters, 17 isolated finds). o Project approved April 2020 – Condition B33 requires preparation of an *Aboriginal Cultural Heritage Management Plan* (ACHMP). o Seven sites to be impacted by the project will be subject to surface collection. o Five sites require fencing: either permanent or temporary. o Heritage NSW have requested hearth Bondah-H1 be excavated. o Long-term management options of salvaged artefacts include applying for a Care Agreement or reburial at the project location. o ACHMP sent to Registered Aboriginal Parties (RAPs) with comments requested by 19 February 2021.
Management measures	♦ TLALC requested a monitor be on site during the construction of the project where the top 20 centimetres of the ground surface was being impacted to collect any artefacts which become exposed. ♦ OzArk noted that the assessment concluded there was low potential for subsurface artefacts to be present and as such, monitoring was not deemed necessary. An unanticipated finds protocol is outlined in the ACHMP should any artefacts be identified during the construction of the project.
Excavation on Bondah-H1	♦ OzArk outlined the proposed methodology for excavating the hearth which includes dividing it into quadrants so harm to the hearth is minimal. Hearth would be reconstructed following excavation. ♦ OzArk noted that currently most RAPs are against excavation of the hearth. If this is the majority, OzArk would discuss this condition with Heritage NSW and request for it to be removed. ♦ Neither representatives from TLALC or White Cockatoo support excavation of Bondah-H1.
Unanticipated finds	♦ TLALC raised concerns over the potential for burials (both pre- and post-contact) to be present due to the proximity to Bora Crossing. ♦ OzArk outlined the unanticipated finds protocol within the ACHMP should potential skeletal remains be identified. This includes notifying RAPs if determined to be Aboriginal ancestral remains.

OzArk Environment & Heritage

Long-term management options	♦ OzArk outlined the options for the long-term management of salvaged artefacts and noted that Tamworth LALC have requested to apply for a Care Agreement, however most RAPs have requested artefacts be reburied. ♦ OzArk outlined the requirements for reburying artefacts. ♦ Representatives from TLALC or White Cockatoo said they would prefer for artefacts to be placed on the surface as opposed to reburied within a container. Would like artefacts to be placed somewhere near Bondah-OS3 and Bondah-OS4.
Installation of a plaque	♦ TLALC requested a plaque be erected at Bondah-H1 as it is a rare site type for the area. ♦ OzArk said they would discuss with ProTen but as there is no public access to the site this is unlikely.
Access to site	♦ TLALC requested access be granted to the sites along a drainage line of the Namoi River (Bondah-OS3, Bondah-OS4 and Bondah-H1) for educational purposes (i.e. school groups). ♦ OzArk noted this would need to be discussed with ProTen and may be subject to availability of an escort and biosecurity requirements.
Continued land use	♦ TLALC questioned whether livestock would still be on the property once the poultry farm is operational as there are concerns the scarred trees would be impacted by cattle. If livestock will be on the property, they would like the scarred trees to be fenced. ♦ OzArk noted they were unsure whether livestock would be present and would need to clarify with ProTen.
Fencing of sites	♦ ProTen questioned what type of fencing would be required for sites needing fencing. ♦ OzArk noted that stakes with high visibility flagging would be suitable. ♦ Potential for OzArk to fence sites requiring fencing when completing the salvage to ensure they are suitably fenced. ♦ Contractors would also be provided with plans showing the location of sites to ensure none are impacted during construction or operation.

Appendix 3 Figure 8: RAP feedback on the Aboriginal Cultural Heritage Management Plan

OZ ARK ENIRONMENT & HERITAGE 2/01/2021

Taylor Foster WHITECOCKATOO

Michael J Long

17 Albion St Gunnedah NSW 2380

Hi Taylor foster

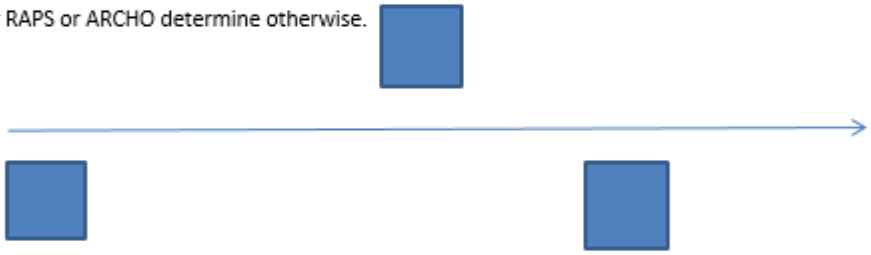
I would like to add some recommendations in regarding the methodology on the management plan for Rush creek poultry farms aboriginal objects.

Methodology Recommendations as listed below for before Archaeological investigation and works or after sites that have been or will be found.

Isolated artefacts find to be salvaged in the impact zone

All surfaces scatter artefacts to be salvaged in the impact zone

Where scatted artefacts are located and to impacted on, they need to be 50cm by 50cm test spits done in transaction formation with no less 20m apart with any less than 15 test pits per transaction, or RAPS or ARCHO determine otherwise.



After the above process is done a RAP meeting should be held to determine which artefacts scatters sites are going require more archaeological investigation, where spit of each transaction scatter site with the highest percentage of artefacts should be chased and till percentage of artefacts declined and this should be determine by the RAPs and archaeologist.

Scared trees that are found in the impact area are to be fenced off and RAP meeting to determine how it to be salvaged with a 50 metre buffer zone from tree dripping zone.

Any Gridding groves found in the ground a meeting is to take places with RAPS to determine if an exploration process is required or monitoring over the farms life span also have a 50m buffer zone.

Burials or Aboriginal graves or camp ovens found in the project area a RAP meeting is to be held so RAP can determine the best solution for the community for eg knowledge holders of Gomeroi laws and customs to visited sites so the full cultural values is to be documented.

Where the artefacts in project area that is to be impacted is to be salvaged and the sign off of the area should been done by RAPS and archaeologist. And then all archaeological salvage sign off to be presented at the annual meeting.

If there are padded areas that are grassed areas closes to creek lines, grader scraps could all so apply if there areas.

As a RAP I would also like the opportunity to be involved in works on this site like the aboriginal land council and as a knowledge holder and Gomeroi native title holder and I come from the 3 clan groups of the Gunnedah area I and my family should play an important role in the heritage management and the mitigation works, custodians should not be left out of this process.

I would also recommend having a meeting with all RAPS involved to discusses these matters as this location is part of a tribal boundary area between Gunnedah, manila and Tamworth clans but I would strongly recommend that all aboriginal objects to be salvage is to stay on site of that location and out of the impact zone because of the spiritual connection of that area.

Regards Michael long

Ph 0447867745

Re: Rushes Creek AFGM Invitation and draft ACHMP

AT

Aaron Talbott <Aaron@atgomilaroi.onmicrosoft

Reply | Reply All | Forward | ...

To Taylor Foster

Cc Rebecca Hardman

Sun 14/02/2021 2:25 PM

You replied to this message on 15/02/2021 9:09 AM.

YAAMA Taylor

Apologies for meeting. I Agree with the majority in regards to methodology and salvage program. AT Gomilaroi Cultural Consultancy requesting a field position for the salvage works.

Look forward to your response.

Yalu (regards)

Aaron Talbott

AT Gomilaroi CC
13 Hunter Street
Gunnedah NSW 2380
ABN: 92 005 620 045
M 0457 601 685
E aaron@atgomilaroi.onmicrosoft.com

Respect to First Nations People and the Land on which we converse.

Remembrance to Ancestors Past and Action from Living and Future Generations.

****
This message is intended for the addressee named and may contain
privileged information or confidential information or both.

Appendix 3 Figure 9: OzArk responses to feedback on the Aboriginal Cultural Heritage Management Plan

OzArk Environment & Heritage ABN 59 104 582 354

Dubbo
Queanbeyan
Newcastle

T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au

145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

3 February 2021

White Cockatoo
c/- Michael J Long
17 Albion Street
Gunnedah NSW 2380
whitecockatoo1@hotmail.com

RE: RUSHES CREEK POULTRY FARM: ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN REVIEW AND SALVAGE

Dear Michael,

Thank you for taking the time to read and provide feedback on the draft Aboriginal Cultural Heritage Management Plan (ACHMP) for the Rushes Creek Poultry Farm.

Please see below in green comments to each of the points raised in your feedback –

1) Isolated artefacts find to be salvaged in the impact zone.

All isolated finds within the impact zone will be subject to surface collection.

2) All surfaces scatter artefacts to be salvaged in the impact zone.

All artefact scatters within the impact zone will be subject to surface collection.

3) Where scatted artefacts are located and to impacted on, they need to be 50cm by 50cm test spits done in transaction formation with no less 20m apart with any less than 15 test pits per transaction, or RAPS or ARCHO determine otherwise.

After the above process is done a RAP meeting should be held to determine which artefacts scatters sites are going require more archaeological investigation, where spit of each transaction on scatter site with the highest percentage of artefacts should be chased and till percentage of artefacts declined and this should be determined by the RAPs and archaeologist.

No subsurface excavation will be taking place at the location of the artefact scatters (Happy Hills-OS3 and Bondah-OS11) which will be impacted by the development. Neither of these sites were considered to be associated with subsurface deposits.

4) Scarred trees that are found in the impact area are to be fenced off and RAP meeting to determine how it to be salvaged with a 50 metre (m) buffer zone from tree dripping zone.

If any grinding grooves found in the ground a meeting is to take places with RAPS to determine if an exploration process is required or monitoring over the farms life span also have a 50m buffer zone.

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Should any scarred trees, grinding grooves or ground ovens be identified within the impact footprint, they will be managed as per Section 7.2.1 and 7.2.2 of the ACHMP. This includes:

- Fencing the site with a 10 m buffer
- An archaeologist will visit the potential site to determine if it is an Aboriginal site
- If it is determined to be an Aboriginal site, a Registered Aboriginal party (RAP) representative will be invited to visit the site.
- The site will be registered on the Aboriginal heritage Information Management System (AHIMS) register
- RAPs will be contacted to discuss management options.

5) Burials or Aboriginal graves or camp ovens found in the project area a RAP meeting is to be held so RAP can determine the best solution for the community for e.g., knowledge holders of Gomeroi laws and customs to visited sites so the full cultural values is to be documented.

If any potential Aboriginal ancestral remains are encountered, they will be managed as per Section 7.1 of the ACHMP. The process for this is detailed below:

- All work close to the find will cease immediately and a minimum buffer of 10 m in all directions from the visible remains will be cordoned off with temporary construction fencing
- The find will be immediately reported to the site supervisor who will immediately advise the Proponent.
- The Proponent will promptly contact the nearest police station (as required for all human remains discoveries)
- The Proponent will contact Heritage NSW (131 555) for advice on identification of the skeletal material as Aboriginal and management of the material
- If the remains are Aboriginal ancestral remains, the RAPs will be contacted and consultative arrangements will be made to discuss ongoing care of the remains, including advice on recommended forensic anthropologists.
- Recommencement of work in the area surrounding the Aboriginal ancestral remains can only occur once the updated ACHMP for the Development has been endorsed by the Secretary (or their delegate), or the Secretary is satisfied that the measures to be implemented in managing the remains have been undertaken and makes a written direction in that regard.

If any ground ovens are encountered, they will be managed as per the procedure listed in 4) above.

6) Where the artefacts in project area that is to be impacted is to be salvaged and the sign off of the area should been done by RAPS and archaeologist. And then all archaeological salvage sign off to be presented at the annual meeting.

The salvage will be completed by an archaeologist and RAPs. A copy of the salvage report will be sent to all RAPs which will document the results of the salvage as opposed to holding a meeting.

7) If there are padded areas that are grassed areas closes to creek lines, grader scraps could all so apply if their areas.

OzArk Environment & Heritage

No areas of potential archaeological deposits (PAD) will be impacted by the development. As such, no grader scrapes are proposed.

8) As a RAP I would also like the opportunity to be involved in works on this site like the aboriginal land council and as a knowledge holder and Gomeroi native title holder and I come from the 3 clan groups of the Gunnedah area I and my family should play an important role in the heritage management and the mitigation works, custodians should not be left out of this process.

OzArk will note that you are interested in participating in the upcoming salvage.

9) I would also recommend having a meeting with all RAPS involved to discusses these matters as this location is part of a tribal boundary area between Gunnedah, manila and Tamworth clans but I would strongly recommend that all aboriginal objects to be salvage is to stay on site of that location and out of the impact zone because of the spiritual connection of that area.

As you are aware, a meeting is being held on Thursday 4 February 2021 in Gunnedah to discuss the ACHMP and any concerns relating to the development.

OzArk has noted that your preference is for salvaged artefacts to be relocated back on site.

If you have any further questions or comments please feel free to contact me at stephanie@ozarkehm.com.au.

Kind regards,



Stephanie Rusden
OzArk Archaeologist

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix G

Discovery of Previously Unrecorded Aboriginal Sites - Unanticipated Finds Protocol

DISCOVERY OF PREVIOUSLY UNRECORDED ABORIGINAL SITES

An Aboriginal artefact is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification; i.e. smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may also consider scientific and educational value.

Initial protocol to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. If any suspected Aboriginal object(s) is discovered and/or harmed in, or under the land, while undertaking the development activities, the proponent must:
    a. Not further harm the object(s)
    b. Immediately cease all work at the location
    c. Fence the area within a 10 m buffer of the site to avoid further harm to the Aboriginal object(s)
    d. Contact an archaeologist to determine the veracity of the object(s).
    e. If determined to be a new site, the location will be visited by an archaeologist and a RAP representative to record the site and to determine its significance. The site will be registered on the AHIMS database.
2. If the newly discovered site is in an impact area of the development:
    a. The site will be salvaged in accordance with the procedures set out in Section 6.1.2 of the ACHMP.
3. If the newly discovered site is in a non-impact area of the development:
    a. The site should be permanently fenced if it is within 55 m of an impact area.
    b. If the site is not within 55 m of an impact area there is no requirement to fence the site.

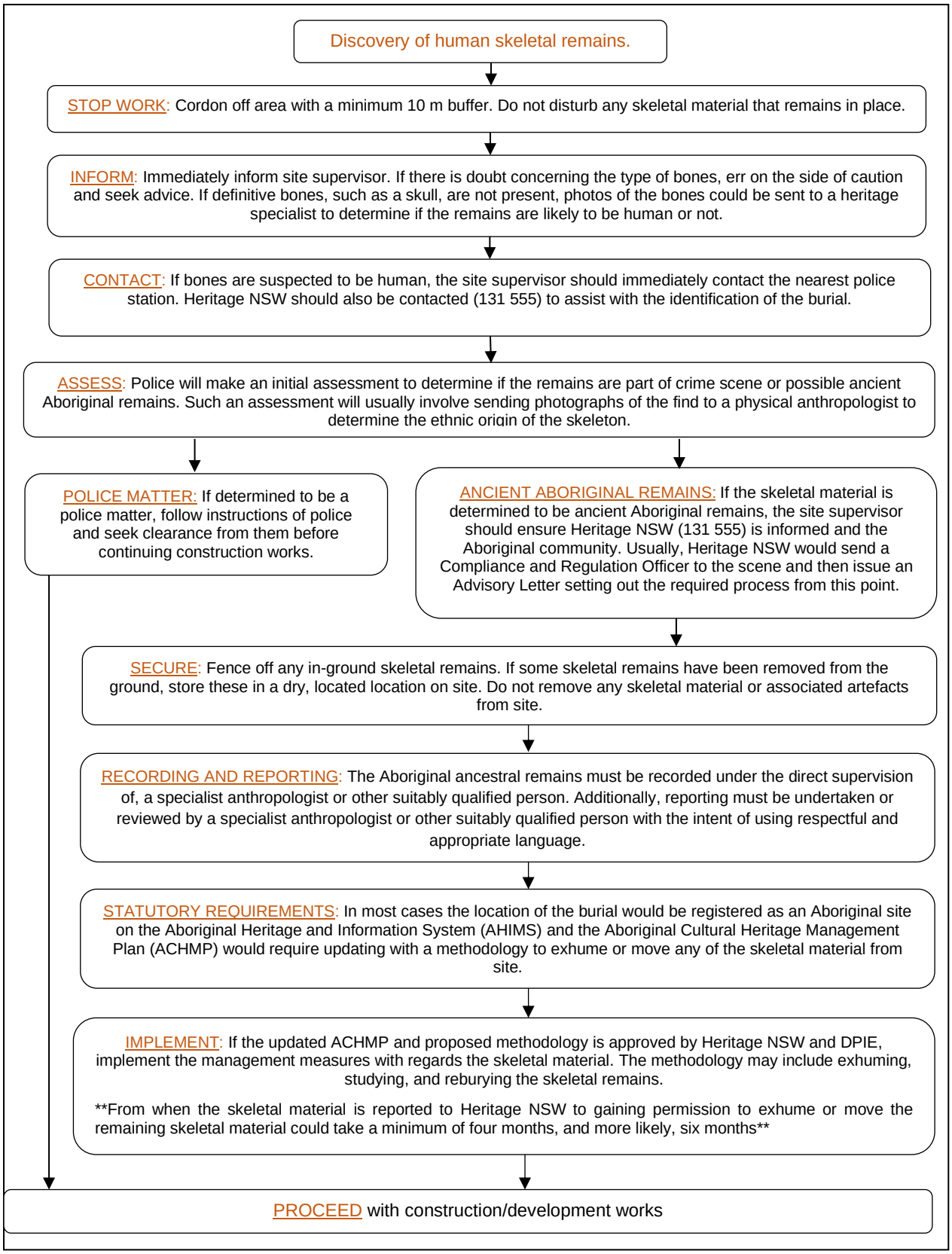
Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix H

Aboriginal Heritage Skeletal Remains Protocol


Discovery of human skeletal remains.
STOP WORK: Cordon off area with a minimum 10 m buffer. Do not disturb any skeletal material that remains in place.
INFORM: Immediately inform site supervisor. If there is doubt concerning the type of bones, err on the side of caution and seek advice. If definitive bones, such as a skull, are not present, photos of the bones could be sent to a heritage specialist to determine if the remains are likely to be human or not.
CONTACT: If bones are suspected to be human, the site supervisor should immediately contact the nearest police station. Heritage NSW should also be contacted (131 555) to assist with the identification of the burial.
ASSESS: Police will make an initial assessment to determine if the remains are part of crime scene or possible ancient Aboriginal remains. Such an assessment will usually involve sending photographs of the find to a physical anthropologist to determine the ethnic origin of the skeleton.
POLICE MATTER: If determined to be a police matter, follow instructions of police and seek clearance from them before continuing construction works.
ANCIENT ABORIGINAL REMAINS: If the skeletal material is determined to be ancient Aboriginal remains, the site supervisor should ensure Heritage NSW (131 555) is informed and the Aboriginal community. Usually, Heritage NSW would send a Compliance and Regulation Officer to the scene and then issue an Advisory Letter setting out the required process from this point.
SECURE: Fence off any in-ground skeletal remains. If some skeletal remains have been removed from the ground, store these in a dry, located location on site. Do not remove any skeletal material or associated artefacts from site.
RECORDING AND REPORTING: The Aboriginal ancestral remains must be recorded under the direct supervision of, a specialist anthropologist or other suitably qualified person. Additionally, reporting must be undertaken or reviewed by a specialist anthropologist or other suitably qualified person with the intent of using respectful and appropriate language.
STATUTORY REQUIREMENTS: In most cases the location of the burial would be registered as an Aboriginal site on the Aboriginal Heritage and Information System (AHIMS) and the Aboriginal Cultural Heritage Management Plan (ACHMP) would require updating with a methodology to exhume or move any of the skeletal material from site.
IMPLEMENT: If the updated ACHMP and proposed methodology is approved by Heritage NSW and DPIE, implement the management measures with regards the skeletal material. The methodology may include exhuming, studying, and reburying the skeletal remains.
From when the skeletal material is reported to Heritage NSW to gaining permission to exhume or move the remaining skeletal material could take a minimum of four months, and more likely, six months
PROCEED with construction/development works

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix I

Incident Notification and Reporting Requirements

APPENDIX 3 INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

WRITTEN INCIDENT NOTIFICATION REQUIREMENTS

1. A written incident notification addressing the requirements set out below must be emailed to the Planning Secretary at the following address: compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition C9 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
   a. identify the development and application number;
   b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   c. identify how the incident was detected;
   d. identify when the applicant became aware of the incident;
   e. identify any actual or potential non-compliance with conditions of consent;
   f. describe what immediate steps were taken in relation to the incident;
   g. identify further action(s) that will be taken in relation to the incident; and
   h. identify a project contact for further communication regarding the incident.

INCIDENT REPORT REQUIREMENTS

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
   a. a summary of the incident;
   b. outcomes of an incident investigation, including identification of the cause of the incident;
   c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   d. details of any communication with other stakeholders regarding the incident.

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix J

Complaint Report Form

Rushes Creek Poultry Production Farm

COMPLAINT REPORT FORM

Person Who Received the Complaint

Name: …… Position: ……

Date: …… Time: …… am/pm

Site Management notified: Yes / No (if no, provide reason)

Person Who Made the Complaint

Name: ……

Address: ……

Contact Details: ……

Complaint Details (when and what was the complaint in relation to?)

Date: …… Time (approx.): …… am/pm

Description: ……

……

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……

Field Investigation

Field investigation undertaken: Yes / No (if no, provide reason)

Description: ……

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……

Is the complaint in relation to an environmental incident: Yes / No

If yes, follow the Environmental Incident Management Strategy - see CEMP / OEMP.

Remedial Actions

Remedial action undertaken: Yes / No (if no, provide reason)

Description: ……

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Any further correction action required: Yes / No

Description: ……

……

……

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……

Complainant Informed

Complainant informed of findings and outcomes: Yes / No (if no, provide reason)

Via: Phone / Email / Letter / In person

Staff Name: …… Position: ……

Date: …… Time: …… am/pm

Sign Off

Name: …… Position: ……

Signature: …… Date: ……

Rushes Creek Poultry Production Farm
Development Consent SSD 7704

Stage 1

Construction Environmental Management Plan

Appendix K

Environmental Incident Report Form

Rushes Creek Poultry Production Farm

ENVIRONMENTAL INCIDENT REPORT FORM

Incident Details

Date: …… Time: …… am/pm

Location: ……

Description: ……

……

……

Notification and Reporting to Relevant Authorities

Has the incident caused or does it threaten to cause material harm to the environment: Yes / No

If yes, the notification and reporting requirements in Section 6.2.2 of the CEMP must be completed.

If yes:

Immediate notification completed: Yes / No

Authorities: ……

Date: …… Time: …… am/pm

Response: ……

……

……

Written notification completed: Yes / No

Authorities: ……

Date: …… Time: …… am/pm

Response: ……

……

……

Written report completed: Yes / No

Authorities: ……

Date: …… Time: …… am/pm

Response: ……

……

……

Remedial Actions

Remedial action undertaken: Yes / No (if no, provide reason)

Description: ……

……

……

Any further correction action required: Yes / No

Description: ……

……

……

Sign Off

Name: …… Position: ……

Signature: …… Date: ……