Shire of Northam

Heritage, Commerce and Lifestyle

Shire of Northam

Agenda

Special Council Meeting

25 May 2017

NOTICE PAPER

Ordinary Council Meeting

25th May 2017

President and Councillors

I inform you that a Special Council meeting will be held in the Council Chambers, located at 395 Fitzgerald Street, Northam on 25th May 2017 at 5:30pm.

Yours faithfully

Jason Whiteaker
Chief Executive Officer

DISCLAIMER

This agenda has yet to be dealt with by the Council. The Recommendations shown at the foot of each item have yet to be considered by the Council and are not to be interpreted as being the position of the Council. The minutes of the meeting held to discuss this agenda should be read to ascertain the decision of the Council.

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Contents

1. DECLARATION OF OPENING

2. ATTENDANCE

Council:

Shire President	S B Pollard
Deputy Shire President	T M Little
Councillors	D G Beresford
	J E Williams
	J Proud
	R W Tinetti
	C L Davidson
	U Rumjantsev
	C R Antonio
	D A Hughes

Staff:

Chief Executive Officer	J B Whiteaker
Executive Manager Engineering Services	C D Kleynhans
Executive Manager Development Services	C B Hunt
Executive Manager Community Services	R Rayson
Executive Manager Corporate Services	C Young
Executive Assistant – CEO	A C Maxwell
Payroll Officer	J White
Manager Planning Services	K Nieuwoudt

2.1 APOLOGIES

Nil.

2.2 APPROVED LEAVE OF ABSENCE

Nil.

3. DISCLOSURE OF INTERESTS

Item Name	Item No.	Name	Type of Interest	Nature of Interest

4. ANNOUNCEMENT BY THE PRESIDING MEMBER (WITHOUT DISCUSSION)

Nil.

5. PUBLIC QUESTION/STATEMENT TIME

5.1 PUBLIC QUESTIONS

5.2 PUBLIC STATEMENTS

6. RESPONSE TO PREVIOUS PUBLIC QUESTIONS TAKEN ON NOTICE

Nil.

7. RECEIVING OF PETITIONS, PRESENTATIONS AND DEPUTATIONS

7.1 PETITIONS

Nil.

7.2 PRESENTATIONS

Nil.

7.3 DEPUTATIONS

Nil.

8. APPLICATION FOR LEAVE OF ABSENCE

Nil.

9. CONFIRMATION OF MINUTES

Nil.

10. ITEMS BROUGHT FORWARD FOR THE CONVENIENCE OF THOSE IN THE PUBLIC GALLERY

11. REPORTS OF COMMITTEE MEETINGS

Nil.

12. SPECIAL ITEMS

12.1 APPLICATION FOR DEVELOPMENT APPROVAL – ANIMAL HUSBANDRY INTENSIVE (FREE RANGE BROILER POULTRY FARM) – LOT 13 NORTHAM-CRANBROOK ROAD, MULUCKINE

Address:	Lot 13 Northam-Cranbrook Road, Muluckine
Applicant:	Avon Valley Poultry Pty Ltd
Owner:	Zippo Pty Ltd as T/F Toodyay Unit Trust
File Reference:	A753/P17038
Reporting Officer:	Courtney Wynn Planning Officer
Responsible Officer:	Chadd Hunt Executive Manager Development Services
Voting Requirement	Simple Majority

BRIEF

Council is asked to consider an application for development approval for a cluster of four (4) free to range broiler poultry farms at Lot 13 Northam-Cranbrook Road, Northam. Each farm cluster ('module') will consist of four (4) sheds, totalling sixteen (16) sheds. Each shed has the capacity to house 44,800 birds.

Public advertising attracted a substantial number of submissions, objecting to the proposal on the following grounds:

- potential for odour, dust and noise impacts (given proximity of the development to Northam townsite and other nearby residential development);
- potential public health risks;
- potential impacts to visual amenity;
- potential for environmental harm;
- increased traffic; and
- bushfire risk.

Current delegations do not permit staff to determine applications for development approval where objections were received during the public consultation period.
The Officer's recommendation is to approve the development application subject to conditions.

ATTACHMENTS

Attachment 1: Location Map
Attachment 2: Site Plans, Floor Plans & Elevations
Attachment 3: Applicant's Report
Attachment 4: Environmental Assessment & Management Plan
Attachment 5: Odour and Dust Impact Assessment

Attachment 6: Photographs of current onsite conditions
Attachment 7: Schedule of Submissions

BACKGROUND / DETAILS

The Site
Lot 13 Northam-Cranbrook Road (the subject land) is zoned 'Rural' under Shire of Northam Local Planning Scheme No.6 ('the Scheme') and is part of a larger agricultural farm located at its closest point, approximately 1.5km from the south-western boundary of the Northam townsite (Refer **Attachment 1** – Location Map).

The subject land is 1,832.7 hectares in area and is currently utilised for large scale agricultural cropping and contains a number of ancillary outbuildings.

The site has plateau areas with relatively gentle slopes. An unnamed minor non-perennial creek flows in a north-easterly direction through part of the subject land, towards the Mortlock River.

The site is bound in the east by the Northam-Cranbrook Road and by Spencers Brook Road in the west. The directly adjoining lot to the south is also owned by the proponent and the remaining boundaries adjoin privately owned rural zoned properties.

Surrounding development
The immediate surrounds of the site are predominantly agricultural farm land to the north, east and south, south-west. There are properties zoned 'Rural Smallholding' and 'Residential R10' located opposite the subject property on Northam-Cranbrook Road, and many of the adjoining rural properties also contain single houses. There is also an extractive industry site on Spencers Brook Road located on another of the proponent's land holdings.

The proposal
The proposal is for a free to range broiler poultry farm for poultry meat production. 'Free to range' is defined as '*paddock based with moveable laying sheds or barn based with access to an outdoor range*'. The process involves the following;

- Chicks are hatched off site at Ingham's hatchery in Wanneroo and transported to the site by road.
- Chickens are raised on the subject site for a period of 42 – 56 days.
- Harvesting of the chickens takes place at night and the live birds are transported off site to the Ingham's processing plant in Osborne Park.
- Sheds are then cleaned out and disinfected.
- Sheds are left vacant for 1-2 weeks until the next batch of chicks arrives.

A full explanation of the proposal can be found in **Attachment 3** – Applicant's Report.

The proponent advises that the development will comprise of the following key components;

- Four (4) independently operated farms (modules), all served by four sheds;
- Sixteen (16) free range chicken sheds, each 160.4m long x 17.30m wide (2,774.92m²), all orientated 'east-west' and having a roofed area of 108,494m²;
- Each shed will have 40 internal bays with 9 cooling bays;
- Each shed will have 16 to 20 axial fans, allowing discharge of air on the western side with evaporative cooling pads on the eastern side;
- Spacing between each shed is 34m;
- Stocking capacity of 44,842 birds per shed (16.2 birds per m²)
- Total of 716,800 birds maximum capacity;
- Two (2) individual water tanks per farm / module (375,000L each);
- Twenty four (24) storage silos (5m high) - six per farm / module;
- Four (4) amenities buildings (including lunchroom and shower) - 1 per farm / module, connected to individual on-site effluent disposal systems;
- Four (4) generator sheds 1 per farm module;
- Four (4) machinery sheds (approximately 5m x 8m); and
- Four (4) gas tanks (25,000L capacity).

A maximum total of 720,000 birds are proposed to be housed on the site at any given time, with approximately 180,000 birds per module (Refer Attachment X).
Staging

The proponent advises that the development of the proposed poultry farm modules will be staged as follows (to be read in conjunction with the map in **Attachment 1**):

Table: Staging of Sheds

	Module	Number of Sheds
Stage 1	1	3
	2	3
	TOTAL	**6**
Stage 2	1	3
	2	3
	3	3
	TOTAL	**9**
Stage 3	1	4
	2	4
	3	4
	4	4

	Module	Number of Sheds
	TOTAL	**16**

CONSIDERATIONS

Strategic Community / Corporate Business Plan

Objective P1: Promote a diverse mix of development opportunities throughout the Shire.

Strategy P1.1: Ensure Council land use planning is in place and reflective of established objectives.

Financial / Resource Implications

There are no direct financial implications for the Shire in relation to the recommendations of this report.

Legislative Compliance

Legislation

- *Planning and Development Act 2005*
- *Planning and Development (Local Planning Schemes) Regulations 2015*
- *Shire of Northam Local Planning Scheme No.6*
  - Clause 3.2.8 Objectives of the Rural Zone
  - Clause 3.3 – Zoning Table
  - Clause 4.5 – Site and Development Standards and Requirements
  - Clause 4.8 – Outdoor Storage Areas
  - Clause 4.13 - Car Parking
  - Clause 4.14 – Traffic Entrances

State Government Policies

- Shire of Northam Local Planning Strategy
- State Planning Policy 2.5 – Rural Planning
- State Planning Policy 3.7 – Planning in Bushfire Prone Areas

Local Policies

- LPP5 – Use of Sea Containers & Other Similar Storage Structures
- LPP20 – Advertising of Planning Proposals
- *Shire of Northam Local Health Law 2008*
- *Northam Surrounds Structure Plan*

Guidelines

- *EPA Guidelines for Separation between Industrial and Sensitive Land Uses (2005)*
- *Environmental Code of Practice for Poultry Farms in Western Australia (2004)*

Planning Assessment

Planning and Development (Local Planning Schemes) Regulations 2015

In considering an application for development approval, the local government is to have due regard to Clause 67 of the *deemed provisions for local planning schemes* which identified those matters that are to be considered when making a determination in regard to a development application. The relevant matters to be considered have been addressed in the table below.

Matter to be Considered	Compliance
a) the aims and provisions of this Scheme and any other local planning scheme operating within the Scheme area;	**Complies.** The proposal complies with Clause 2.3.8 of the Scheme which identified the objectives of the rural zone.
c) any approved State planning policy;	**Complies.** The proposal complies with relevant State Planning Policies including; • Shire of Northam Local Planning Strategy • State Planning Policy 2.5 – Rural Planning • State Planning Policy 3.7 – Planning in Bushfire Prone Areas
d) any environmental protection policy approved under the Environmental Protection Act 1986 section 31(d);	**Complies.** The proposal complies with the EPA *Guidelines for Separation between Industrial and Sensitive Land Uses (2005)*.
e) any policy of the Commission;	**Complies** The proposal complies with relevant State Planning Policies including; • *Shire of Northam Local Planning Strategy* • *State Planning Policy 2.5 – Rural Planning* • *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*
f) any policy of the State;	**Complies** The proposal complies with relevant State Planning Policies including; • *Shire of Northam Local Planning Strategy* • *State Planning Policy 2.5 – Rural Planning* • *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*
g) any local planning policy for the Scheme area;	**Complies**

	The proposal was considered against the following adopted Local Planning Policies: *Local Planning Policy 20 – Advertising of Planning Proposals; and* *Local Planning Policy 5 - Use and Control of Sea Containers and Similar Storage Containers*
m) the compatibility of the development with its setting including the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely effect of the height, bulk, scale, orientation and appearance of the development;	**Complies** - The development achieves all minimum setbacks to adjoining land. - The proposed use is compatible with the Rural zoning of the subject site and adjoining land. - The proponent has demonstrated that the height, bulk and scale of the structures proposed as part of the development will be adequately screened from view.
n) the amenity of the locality including the following — (i) environmental impacts of the development; (ii) the character of the locality; (iii) social impacts of the development;	**Complies** - The proponent has demonstrated that the amenity of the surrounding area will not be negatively impacted by environmental impacts including dust, noise, odour, vermin and/or disease. - The proposal will not negatively impact upon the character of the area and will be well screened from view. - The proposal has not been identified as a potential social risk that would result in negative social impacts within the locality.
o) the likely effect of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or the water resource;	**Complies** - The development has achieved the minimum 200m setback to a watercourse. - There is no requirement to obtain a licence for the bore as the site is located within the Karri Groundwater Area, which is unproclaimed under the *Rights in Water and Irrigation Act 1914*. - Water runoff will be prevented from reaching natural watercourses

	through the implementation of a drainage management plan.
p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;	**Complies** - No native vegetation is required to be removed to facilitate the development. - Trees are proposed to be planted around each farm module.
q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;	**Complies** - The site is not located within a designated flood plain area. - The site is located within a designated bushfire prone area. A bushfire management plan is recommended as a condition of approval. - Nutrients generated by the proposal will be adequately managed through approved management strategies.
r) the suitability of the land for the development taking into account the possible risk to human health or safety;	**Complies** - No possible risks to human health or safety have been identified.
s) the adequacy of — (i) the proposed means of access to and egress from the site; and (ii) arrangements for the loading, unloading, manoeuvring and parking of vehicles;	**Complies** - Main Roads WA have advised that they are satisfied with the vehicle access point to the site from the Northam-Cranbrook Road. - There is adequate space on the site to accommodate loading, unloading, manoeuvring and parking of vehicles.
t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;	**Complies** Northam-Cranbrook Road, Yilgarn Avenue and Great Eastern Highway are all existing RAV4 Routes approved by Main Roads WA as being suitable for heavy vehicle use.

u) the availability and adequacy for the development of the following — (iii) storage, management and collection of waste;	**Complies** The proponent has demonstrated that waste can be collected, managed, stored and disposed of offsite in a manner that will not impact upon the locality.
x) the impact of the development on the community as a whole notwithstanding the impact of the development on particular individuals;	**Complies** The proponent has demonstrated that the development will not have a detrimental impact on the local community as a whole by achieving adequate separation distances and demonstrating that compliance with all applicable legislation can be achieved.
y) any submissions received on the application;	**Complies** All valid planning considerations raised in the public submissions have been addressed in the Schedule of Submissions.
za) the comments or submissions received from any authority consulted under clause 66;	**Complies** All advice and comments received from relevant agencies consulted have been taken into consideration and addressed in the Schedule of Submissions.

Shire of Northam Local Planning Scheme No.6 (the Scheme)
The subject property is zoned 'Rural' under the Scheme and is currently used for large-scale agricultural cropping. The proposed Free Range Poultry Farm has been assessed as an 'Animal Husbandry – Intensive' land use which is defined in the Scheme as follows;

> ***"animal husbandry - intensive"*** *means premises used for keeping, rearing or fattening of pigs, poultry (for either egg or meat production), rabbits (for either meat or fur production) and other livestock in feedlots;*

An 'animal husbandry – intensive' use is classified as a 'D' (Discretionary) use. A 'D' use means that the use is not permitted unless the local government has exercised its discretion by granting planning approval.

The proposal has been considered against the objectives of the Rural zone as outlined Clause 2.3.8 of the Scheme in the table below.

Rural Zone Objective	**Compliance**
To provide for horticulture, extensive and intensive agriculture, agroforestry, local services and	**Compliant.** The proposal would provide for a new local agricultural based industry.

industries, extractive industries and tourist uses which ensure conservation of landscape qualities in accordance with the capability of the land.	
To protect the potential of agricultural land for primary production and to preserve the landscape and character of the rural area.	**Compliant** Primary production includes animal cultivation. The remainder of the site will continue to be used for cropping or broad acre farming activities. The development will be screened from view by existing undulating topography and proposed vegetation to preserve visual landscape quality.
To control the fragmentation of broad-acre farming properties through the process of subdivision.	**Not Applicable**
To protect land from land degradation and further loss of biodiversity by: • Minimising the clearing of remnant vegetation and encouraging the protection of existing remnant vegetation; • Encouraging the development of and the protection of corridors of native vegetation; • Encouraging the development of environmentally acceptable surface and sub-surface drainage works; and • Encouraging rehabilitation of salt affected land.	**Compliant** No clearing of remnant vegetation is required. • The development will be screened from view by existing undulating topography and proposed vegetation to preserve visual landscape quality. • The development will not result in drainage issues. • The development will not result in any salinity impacts.

The Scheme also contains general requirements applicable to the proposal, these requirements have been detailed in the table below.

Item	Requirement	Proposal	Comment
Land Use Permissibility	Table 1 – Zoning Table Animal Husbandry - Intensive – 'D' use in the Rural zone.	Use is not permitted unless the local government has exercised its	Notice of proposal provided to agencies and local community in accordance with

		discretion by granting development approval. LPP20 also applies.	clause 64 and LPP20 (refer 'consultation' section).
Setbacks	Table 2 – Site & Development Requirements Table Minimum front setback: 25m Minimum side & rear setback: 20m	The buildings closest to the boundary are in 'Farm Module 4' which is setback 255m to the nearest boundary.	Compliant
Earthworks	Clause 4.11 Any cut or fill that alters the natural ground level by more than 0.5m may be approved at the discretion of the local government.	The application is proposing the following earthworks: Farm Module 1 – Cut up to 2.85m below NGL & Fill up to 4.15m above NGL; Farm Module 2 – Cut up to 1.05m below NGL & Fill up to 2.95m above NGL; Farm Module 3 – Cut up to 2.7m below NGL & Fill up to 3.3m above NGL. Farm Module 4 – Cut up to 4.8m below NGL & Fill up to 6.2m above NGL.	All earthwork areas will be screened from view from view by existing undulating topography and proposed vegetation buffers around each farm module.
Car Parking	Table 3 – Car Parking Guidelines – determined at	Informal car parking area to be provided for each farm	The development does not generate a demand for conventional car

	the discretion of the local government.	module. Car parking bays will not be line marked.	parking. Car parking can be accommodated within the site.
Traffic Entrances	Clause 4.14.3 Vehicles required to enter & leave the site in a forward direction.	No further upgrades to the existing site access is required by Main Roads WA.	Existing vehicles access onto Northam-York Road provides ingress and egress in a forward direction.

Shire of Northam Local Planning Strategy

The site is located within an existing rural area which is not identified for future residential growth in the Shire of Northam Local Planning Strategy (the Strategy).

The site is located within the 'Avon East Precinct' where the support for the diversification of sustainable agricultural production along with the preservation and enhancement of the environment and natural resources have been identified as key objectives.

Policy Implications

State Planning Policy 2.5 – Rural Planning

State Planning Policy 2.5 (SPP2.5) replaces *State Planning Policy 4.3: Poultry Farms Policy (2008)* which was repealed in December 2016. SPP2.5 applies to all development proposals on rural zoned land. In relation to poultry farms, SPP2.5 states that poultry farms are not subject to environmental regulation. Therefore planning decision-makers may need to consider a broader range of environmental factors and resolve potential land use conflict.

Western Australian Planning Commission (WAPC) policy in regard to animal premises is:

(a) *animal premises are a rural land use, and are generally supported and encouraged on rural land provided rural amenity and environmental impacts can be effectively managed;*
(b) *animal premises that require large sites or buffers, and could limit existing or potential industrial land uses, should generally not be located in State strategic industrial areas or within their buffers;*
(c) *expansion of existing animal premises may be supported where off-site impacts (such as odour, dust or noise) are mitigated or managed to achieve maintenance or reduction of impacts, in accordance with an accepted code of practice;*
(d) *in addition to environmental issues, planning decision-makers must consider the following matters in assessing proposals –*
    (i) the staging of the proposal and ultimate design capacity;

(ii) the transport of animals to and from the site;
(iii) the handling and disposal of deceased or 'retired' animals on or off-site;
(iv) the transport, handling and/or disposal of animal feed and/or waste on or off-site
(v) outdoor pens or roaming areas for animals;
(vi) the potential impacts of operating hours;
(vii) shed configuration, including rotation and/or automation;
(viii) servicing, including location and size of effluent disposal ponds; and
(ix) (biosecurity (based on advice from the industry); and

(e) Where an animal premises proposal may affect the nutrient load of a river, estuary or associated tributary and the system and/or its receiving water body has no further capacity to assimilate nutrients without an adverse impact on ecosystem health, a reduction in nutrient export is to be demonstrated.

The development application has been considered against SPP2.5 and relevant considerations have been outlined in the table below:

Item	**Requirement**	**Proposal**	**Comment**
Access to Water	Poultry farms require water for drinking supplies, shed cooling, shed sanitisation, fire protection, irrigation of landscaping and domestic use.	Water will be sourced from an on-site bore and stored in tanks.	The subject site is located within the Karri Groundwater Area which is unproclaimed under the *Rights in Water and Irrigation Act 1914*. Therefore, there is no requirement to obtain a groundwater licence from the Department of Water for superficial groundwater abstraction.
Vehicle Access	• the location and design of access roads so that vehicle movements (including pick up and deliveries of feed, birds and waste, and	The vehicle access point to the site is via the existing crossover on the Northam-Cranbrook Road. Unsealed	Main Roads WA (MRWA) has no objection to the proposal provided that they utilise the existing crossover. Northam-Cranbrook Road is a MRWA controlled road that

	associated farm practices) can be undertaken in a manner that minimises disturbance to nearby land uses; • the volume and type of vehicles accessing the premises each day (including delivery of new birds, feed and bedding, and collection of dead birds); and • potential impact on the local road network in terms of vehicle volume and size.	internal access roads will link farms. The figures provided indicate that there would be an average of 3 heavy trucks and 9 light vehicles belonging to staff accessing the site per day. The heavy vehicle route proposed is the most direct route to Great Eastern Highway via Northam-Cranbrook Road & Yilgarn Avenue.	has been designed for heavy vehicles.
Visual Impact	Potential visual impacts can be managed by: • using building materials that are sympathetic to the local landscape character and environment; • siting sheds and farm infrastructure to take best advantage of local topography; and • utilising existing	Sheds are approximately 4.6m high and are constructed of white PIR thermal wall panels and corrugated zincalume roof with a 12 degree pitch. Sheds have been sited where earthworks will be required to achieve a level building surface.	As per the contour plan provided, the natural topography of the site has plateau areas with relatively gentle slopes. The natural topography and vegetation buffers will screen all sheds and associated earthworks from view.

	or planted vegetation as a screen.	Existing undulating topography and planting of vegetation will be utilised to screen each farm.	
Buffers	Use of new technology, careful site planning and contemporary management techniques may allow substantial reductions to buffer distances prescribed in Government policy and industry standards. Buffers are also required to protect water quality in nearby waterways and wetlands.	Farm Module 1, 2 & 3 are setback a minimum of 1km from the closest boundary. Farm Module 4 is setback approximately 255m from the nearest boundary and 1.1km from the nearest residence. There is a minimum buffer of 1km between the farm modules and the closest residential house. Additional buffering techniques proposed include: • Vegetation & landscape screening • Materials and technology incorporated into the design of the sheds. • Offsite	Complies with buffers outlined in *Environmental Code of Practice for Poultry Farms 2004* in relation to sensitive land uses. Complies with the EPA Separation Distances between Industrial and Sensitive Land Uses Guidelines (2005) & the Environmental Code of Practice for Poultry Farms in Western Australia (2004) DoW has reviewed the proposal and are satisfied that the proposed waterway buffer is adequate provided that appropriate measures are taken to prevent runoff from reaching the waterway. A detailed drainage management plan is recommended as a condition of approval.

		composting • Mechanised approaches to shed ventilation, climate control and cleaning. There is a setback of at least 200m to the nearest defined water course.	
Waste Management	The following matters should be considered: • the method for disposing of dead birds (e.g. off-site or on-site composting, off-site or on-site disposal); • the method of removing manure and litter from sheds and disposing of manure off-site or on-site; • the location of a cool room where dead birds and unwanted eggs can be stored for over 24 hours before collection for off-site disposal; • the location and storage of a weather and vermin proof receptacle for transporting unwanted eggs and dead birds	Deceased birds will be stored on site in sealed BiobiNs ® which will be periodically collected by a contractor and transported to a fertiliser plant near Mandurah. Manure will be removed immediately from the site to be used on another farm off-site without the need to stockpile on site.	Removal of the birds to recycling facility off site is preferred instead of burying the deceased birds on site. Manure and litter is immediately removed from the site via covered trucks in accordance with the requirements of SPP2.5.

	(e.g. a 240 litre wheelie bin); and • the route to be taken by vehicles collecting unwanted eggs or dead birds for disposal.		
Biosecurity	biosecurity is affected by: • the location of other poultry farms or poultry developments (such as hatcheries or layer facilities), which may constrain future expansion of the farm due to biosecurity; the location of, and distance from, water bodies and wetlands; • the design and location of buildings and fencing to prevent access by native or feral animals; and • the location for the burial of birds on the site. Advice from the Department of Environmental Regulation (DER) should be sought regarding any	There are no other poultry farms or developments within the Shire of Northam. There is a setback of at least 200m to the nearest defined water course. Buildings have been orientated to ensure that the ventilation fans have been directed to blow into the property. All farm modules will be fenced to prevent access by predators. Birds are not proposed to be buried on site. Birds will be removed and disposed of offsite.	Complies.

	on-site burial.		

State Planning Policy 3.7 – Planning in Bushfire Prone Areas
State Planning Policy 3.7 applies to all development proposals located within the designated bushfire prone area. Advice provided by the WAPC (Planning Bulletin 111/2016) states that chicken farms are exempt from requiring a Bushfire Attack Level (BAL) assessment. This is consistent with the Building Code of Australia which does not require a BAL assessment because the proposed buildings are non-habitable structures.

However, as potentially hazardous chemicals are proposed to be stored on site, bushfire management measures such as a Bushfire Management Plan and Hazard Separation zones may be required by the local government.

Shire of Northam Local Planning Policy 5 – Use of Sea Containers and Other Similar Storage Structures
Local Planning Policy 5 specifies the following in regard to the placement of sea containers on lots zoned 'Rural':

> *5.3.1 A maximum of one (1) sea container or other similar storage container up to 12m in length per Certificate of Title;*

The application includes the placement of a total of four (4) sea containers that are each 6m in length. One sea container would be placed at each farm module for the purpose of housing machinery.

Item	**Requirement**	**Proposal**	**Comment**
Permanent Sea Containers	Clause 5.3.1 – A maximum of 1 sea container 12m in length	4 permanent 12m length sea containers are to be used to store machinery.	Additional sea containers may be approved by Council where it has been demonstrated that the sea containers would not result in a detrimental impact.
	Clause 5.3.2 – Sea containers shall be screened from view.	The sea container swill be screened by the adjacent buildings, topography of the land and by existing native vegetation.	Compliant

Item	Requirement	Proposal	Comment
	Clause 5.3.3 – Sea Containers must comply with the minimum boundary setbacks for the zone.	The sea container is setback more than 25m from the nearest boundary.	Compliant
	Clause 5.3.4 – Sea containers shall be painted a colour that is similar to existing buildings.	The colour of the sea containers has not been specified.	It is recommended that a condition be imposed requiring the sea containers to be painted a colour that blends in with the surrounding environment.

Shire of Northam Health Local Law 2008

Division 5 of the Shire's Health Local Law outlines requirements for the keeping of feedlots (including poultry). Clause 5.5.2 specifies the following;

> *"5.5.2 Premises to be approved*
> *(1) No premises shall be used as a feedlot unless approved by local government;*
> *(2) Subject to subsection (3), no premises shall be approved as a feedlot by the local government unless every portion of such feedlot complies with the minimum distances in Table 1; and*
> *(3) Sites unable to satisfy the separation requirements may be approved at the discretion of the local government, if the local government is satisfied that approving the feedlot will not give rise to a health nuisance."*

Table 1

Required Buffer Distances for Feedlots

Buffer	Distances
Townsite Boundaries	5000m
Isolated rural dwellings, dairies and Industries	1000m
Public roads and recreation areas	100m
Neighbouring rural property boundaries	50m
Major water courses and water impoundment	300m
Bores, wells or soak wells used for drinking, stock or irrigation	300m
Minor water courses	100m

As outlined in Table 1, the minimum buffer distance required for a feedlot from the Northam townsite is 5km.

Proposed Farm Modules 1 & 4 are located approximately 3km from the edge of the Northam townsite. However, as per Clause 5.5.2 (3), the local government may approve a feedlot that is less than the required buffer

distances where the application has demonstrated that the feedlot will not result in a health nuisance.

The proposal complies with all other buffer distances as identified in the Local Law.

EPA Guidelines for Separation between Industrial and Sensitive Land Uses
An intensive poultry industry land use are listed under the Environmental Protection Authority's ("EPA") Separation Distances between Industrial and Sensitive Land Uses Guidelines (2005) as a land use that may potentially affect nearby sensitive land uses (including residential dwellings). The Guidelines specify buffer distances for intensive poultry industry land uses should be 300m-1000m depending on the size.

Environmental Code of Practice for Poultry Farms in Western Australia (2004)
The Code of Practice provides recommendations in regard to the potential impacts of commercial poultry enterprises including best practice for day-to-day operations of poultry farms. The Code of Practice advises that where the separation distance is greater than the generic distance, there will not usually be a need to carry out site-specific technical analyses to determine the likely area of amenity impacts due to emissions from the industry.

Stake Holder Engagement / Consultation
Public Consultation
Officers gave notice of the application on 4th April 2017 for a period of 22 days which exceeded the minimum 14 days due to the number of public holidays during April. Public notice was undertaken in accordance with Schedule 2 Part 8 Clause 64 (3) of the Regulations and Local Planning Policy 20 – Advertising of Planning Proposals.

As specified in Clause 5 of Local Planning Policy 20, all land owners who have property within a 500m radius of the centre of the subject site are required to be directly notified. However, as there is a distance of more than 1km from the centre of the subject site Officers were required to use discretion to determine which surrounding land owners received direct notification. It was determined by Officers that all land owners who own property that directly abuts or located opposite the subject site would receive direct notification about the development proposal.

Advertising of the proposal was undertaken in the following manner:

- Direct notification of surrounding landowners who own property that abuts or is located opposite the subject site;
- Publication of a notice in the *Avon Valley Advocate* on the 5th April 2017.
- Displaying on notice on the Shire's website from 4th April 2017 to 27th April 2017;
- Referral of the proposal to relevant government agencies including Department of Water, Department of Agriculture & Food, Department

of Health, Main Roads WA, Department of Environment Regulation & the Environmental Protection Authority.

Fifty six (56) submissions were received during the public advertising period along with three (3) late submissions, all objecting to the proposal.

Staff referred of copy of the submissions to the applicant on 28th April 2017, inviting a response. The applicant's responses have been incorporated into the Schedule of Submissions. Refer **Attachment 7** – Schedule of Submissions.
The objections received generally raised concerns in regard to the following issues:

- Potential odour impacts;
- Potential noise impacts;
- Potential dust impacts;
- Potential public health risks;
- Potential impacts to visual amenity;
- Potential impacts to groundwater supply;
- Potential to attract vermin;
- Increased traffic;
- Potential increased bushfire risk; and
- Proximity of the development to the Northam townsite.

Internal Consultation
The application was circulated internally and the development proposal discussed with key technical staff at a Development Control Unit (DCU) meeting. Comments and advice received at that meeting have been incorporated into the recommendation of this report.

Consultation with other Agencies
A total of six (6) external government agencies were consulted in writing on 28th March 2017 in regard to this application, including;

- Main Roads Western Australia;
- Department of Water;
- Department of Health;
- Environmental Protection Authority;
- Department Environment Regulation and;
- Department of Agriculture & Food.

Submissions were received from 5 of the external agencies consulted. Some of the agencies provided advice in relation to other legislation that the proponent may be required to comply with. However none of the comments received objected to the proposal. Refer **Attachment 7** – Schedule of Submissions.

Risk Implications
N/A.

OFFICER'S COMMENT

The submissions received raised concerns regarding potential environmental health impacts including odour, noise and dust. The location of the proposed development in relation to its proximity to the Northam townsite and potential impacts to visual amenity resulting from the construction of the 16 proposed sheds were also identified as a concern. Submissions also cited potential for diseases from the birds and the risk posed to public health.

Each of the key-issues is discussed below under separate headings, followed by a conclusion.

Location of the Development & Separation Distances

Both the EPA Guidelines and the Industry Code of Practice detail that poultry farms should be set back a minimum of 1km from the nearest sensitive receptor (ie. residential dwelling). This development proposal is set back more than 1.1km from the nearest sensitive receptor and therefore is considered to be appropriately sited in accordance with the Guidelines.

However, in response to concerns raised in the public submissions, the proponent was requested to undertake scientific odour and dust modelling to demonstrate that surrounding landowners will not be detrimentally impacted. It should be noted that the modelling has been based on a total of 24 sheds with a total maximum capacity of 1.0176 million birds instead of the 16 sheds and 720,000 birds proposed as part of this application. The reason for this is that the proponent does not wish to repeat the exercise should they decide to submit another application in the future.

The results of the odour and dust modelling have been peer reviewed by an independent expert consultant appointed by the Shire of Northam. The peer review confirmed proponent's modelling and report is a fair representation of odour modelling and that the emission estimation methodology is appropriate and conservative subject to clarification. The magnitude of odour and dust emission rates presented in proponent's modelling and report is consistent with expectations for similar poultry operations.

It is considered that the Northam townsite boundary is unlikely to be expanded any closer to the poultry farm beyond the existing townsite boundary to the south-east due to the steep topography and granite outcrops which make development difficult. The Shire's Planning Strategy does not identify any further identification of development in the Muluckine area, with the area designated to remain rural into the future.

Odour Impacts

Odour was the main concern raised in all submissions received. The minimum distance to the nearest proposed farm module and the existing 'Residential' zoned properties in the Northam townsite is approximately 3km.

The proponent has prepared an odour management plan which identifies various techniques that will be implemented to prevent to mitigate odour including the following;

- Orientation of the sheds and ventilation exhaust fans are directed to blow into the centre of the property not towards adjoining properties;
- Consideration of daily weather - during cold, hot or windy conditions the birds will be confined inside of the sheds;
- Ongoing management of the moisture content of litter to ensure that it does not become too wet;
- Regular cleaning and waste removal from the sheds and free range outdoor area;
- Sealed storage of deceased birds inside of refrigerators until they are collected and disposed of offsite;
- Immediate removal of manure from the property;
- Use of tarpaulin covered trucks for transportation of manure, litter and feed;
- Adequate separation and buffer distances of more than 1km to the nearest residence.

The scientific based odour modelling provided by the proponent indicates that odour is unlikely to be detected on the boundary of any adjoining property aside from a small portion of Lot 12 No.1 Muresk Road. However, it should be noted that according to the odour modelling the existing residence on Lot 12 No.1 Muresk Road will not be affected by odour impacts. Refer **Attachment 5** – Odour and Dust Impact Assessment.

Noise Impacts

Potential noise impacts resulting from the development are expected to be minimal and consistent with normal agricultural farming noise currently experienced in the area along with existing noise associated from heavy vehicles using the Northam-Cranbrook Road.

To address noise concerns, the proponent has prepared a noise management plan which includes the following measures:

- Selection of equipment that has low noise ratings;
- Use of lights instead of reverse alarms where possible;
- Orientating sheds to capture maximum natural ventilation to reduce the use of ventilation fans;
- Scheduling of the majority of farm operations and vehicle movements to take place during the day;
- Ensuring that bird removal trucks depart the site at 8am to minimise noise for residents on the Northam-Cranbrook Road;
- Implementing a maximum 25km per hour speed limit on internal roads;

- Use of earth bunds and natural topography as a noise barrier.

In addition to the above, the proponent is required to comply with the *Environmental Protection (Noise) Regulations 1997*.

Dust Impacts

Dust may be generated by the vehicles traversing internal roads, litter and feathers (dander). Dust from poultry sheds can also transmit odour according to the WA Environmental Code of Practice. In order to minimise dust impacts the dust management plan outlines the following techniques to be implemented:

- Planting of vegetation buffers around sheds to disperse dust;
- Regular cleaning and waste removal from the sheds and free range outdoor area;
- Regular maintenance of grass in outdoor free range areas;
- Immediate removal of manure from the property;
- Use of tarpaulin covered trucks for transportation of manure, litter and feed;
- Implementing a maximum 25km per hour speed limit on internal roads;

In addition to the above measures, the proponent has undertaken scientific dust modelling which demonstrates that dust emissions will be confined to the site and will not have a detrimental impact upon adjoining properties.

Water Supply & Drainage

A reliable water supply is crucial for the day to day operations of the poultry farm. Staff amenity buildings will be supplied with potable Scheme water which is already available on the site. However, water for the birds and shed maintenance will be drawn from a bore on site. Submissions received raised concerns about the amount of water that would be drawn from the bore.

In response to the concerns, the application was referred to the Department of Water (DoW) for comment as water supply is not within the jurisdiction of the local government. The DoW has advised that there is no requirement to obtain a licence for the bore as the site is located within the Karri Groundwater Area, which is unproclaimed under the *Rights in Water and Irrigation Act 1914*.

The proposed farm modules are appropriately set back from the minimum 200m distance from the nearest watercourse as required by DoW. It is recommended that a drainage management plan that details how runoff will be prevented from reaching the watercourse be required as a condition of approval.

Control of Vermin

A pest management plan will be implemented to prevent loss of birds to predators such as foxes and to prevent infestation of vermin including the black rat and European Mouse. Measures include the following;

- All free range areas will be fully fenced and birds kept inside at night to keep out predators;
- Implementation of rodent baiting and traps;
- Regular monitoring and visual inspection of sheds;
- Sealed storage of feed supplies;
- Immediate clean-up of spilled feed.

Public Health Risk

A number of submissions cited concerns that the proposed poultry farm may pose a public health risk in relation to chest problems, allergies and potential infectious diseases such as bird flu. The Shire is not responsible for the monitoring of infectious diseases as this is the responsibility of the Department of Agriculture and Food and the Department of Health.

The proponent is required to comply with all applicable legislation relating to health and biosecurity of humans and birds including the , *Health Act 1911*, *Biosecurity and Agriculture Management Act 2007 RSCPA Guidelines* and *Environmental Code of Practice for Poultry Farms in Western Australia (2004)*. The application has been referred to the Department of Health who have advised no objection to the proposal and have not identified any potential hazards to human health.

Bushfire Risk

One of the submissions received raised a concern about the potential for the poultry farm to increase the risk of bushfire in the area. As the proposed development is for a non-habitable use, a BAL assessment is not required.

The proponent has advised that they will maintain a 175m 'low-fuel' buffer zone around each farm module that will be kept vacant from crops. There is a fire response unit kept on site at all times and there are also two full time caretaker staff, including a volunteer fire fighter that live on an adjoining lot that is part of the larger overall farm who are able to respond during a fire emergency.

However, as flammable chemicals are proposed to be stored onsite for the farming operations, Officers are recommending that the proponent prepare a bushfire management plan as a condition of approval.

Traffic Impact

The proponent has provided data that shows that a number of different types of trucks will be required to service the development, including, feed & bird delivery trucks, waste and dead bird removal trucks and staff vehicles.

The proponent has indicated that there will be on average 3 heavy vehicle movements per day with an average of 92 movements per month. All vehicle movements will take place during daylight hours except for the trucks that take the birds to the processing plant. These trucks will enter the site at night and

depart at 8am as the birds are collected during the night to reduce stress on the birds.

The route that heavy vehicles will take to access the site is via the Great Eastern Highway Bypass, with trucks exiting at Yilgarn Avenue. Heavy Vehicles will then travel up Yilgarn Avenue before turning onto the Northam-Cranbrook Road to access the site via the existing crossover. No vehicle access is proposed to be obtained from Spencers Brook Road.

The proposed vehicle access arrangements are considered to be acceptable and will be of minimal impact to residents as the proposed route is an existing heavy vehicle route through a predominantly industrial area. The Northam-Cranbrook Road is under the jurisdiction of Main Roads Western Australia and therefore the Shire is not responsible for the maintenance of the road.

Visual Amenity Impact

The proposed development including sixteen sheds and associated earthworks, four sea containers and other ancillary structures will not result in a detrimental impact to the visual amenity of the surrounding area. All buildings have been setback well away from the property boundaries, are of low, single storey height and will be mostly screened from view by the existing undulating topography of the site.

It is acknowledged that Farm Module 1 may be visible in the distance from some elevated properties in the rear of the Woodley Farm Estate. However additional native vegetation will be planted around all farm modules including farm module 1 to ensure that they are screened from view. In addition the buildings will be located approximately 3km from the nearest property located in the area known locally as Woodley Farm Estate. Refer **Attachment 6** - Photographs of current onsite conditions.

Conclusion

It is considered that the development has been appropriately sited to take advantage of the natural topography for visual screening purposes and that the minimum separation distances can be achieved and maintained in the future.

Officers have considered the concerns relating to traffic, odour, dust, noise, vermin, water supply, drainage and visual amenity raised in the submissions and are satisfied that the proponent has adequately demonstrated that the development will not have a detrimental impact upon surrounding residents or the Northam townsite.

The proposal complies with all applicable legislation and relevant guidelines including Planning and Development (Local Planning Schemes) Regulations 2015, Shire of Northam Local Planning Scheme No.6, State Planning Policy 2.5,

EPA Guidelines and the Environmental Code of Practice for Poultry Farms in Western Australia.

It is, therefore, recommended that Council approve the application subject to conditions.

RECOMMENDATION

That Council grants Development Approval for the proposed Free Range Poultry Broiler Farm at Lot 13 Northam-Cranbrook Road, Muluckine subject to the following conditions:

GENERAL CONDITIONS

1. **The development hereby permitted must substantially commence within two years from the date of this determination notice.**
2. **The development hereby permitted taking place in accordance with the approved plans dated 25/05/17 in addition to any documentation endorsed with an 'Approved' stamp by the Shire of Northam.**
3. **Approval is granted for a maximum of sixteen (16) poultry sheds.**
4. **All activities associated with the construction of the development must be carried out to the satisfaction of the local government and all care must be taken to minimise the effect of such activities on the amenity of the locality.**
5. **All stormwater shall be discharged in a manner so that there is no discharge into watercourses or onto the adjoining properties to the satisfaction of the local government.**
6. **Chemicals storage areas shall be located within bunded impervious areas capable of containing any spillages to the satisfaction of the local government.**
7. **Feed shall be stored inside of the designated feed silos at all times to prevent access to vermin and native fauna.**
8. **Deceased birds are to be removed and disposed of offsite as soon as practicable. Deceased birds are not permitted to be buried or disposed of on site.**
9. **A bin storage system, suitable for containing odours from dead birds being stored for more than 24 hours before disposal off-site, being provided for each farm module.**
10. **All vehicles utilised to transport birds and waste to and from the site are to be enclosed/covered.**
11. **Sea Containers are to have an external colour that blends in with the surrounding environment to the satisfaction of the local government.**

12. **A notice indicating the type of operation, hours of operation, contact information and potential impacts of the poultry farm operation must be displayed at the entrance of the property to the satisfaction of the local government.**

13. **Composting or spreading of used litter as manure is not permitted occur on the site.**

14. **Used litter and manure associated with the development is not permitted to be stockpiled on the site for a period longer than 24 hours after being removed from the sheds.**

15. **In the event the local government receives a *valid complaint regarding odour and/or dust, the poultry farm operator shall commission an accredited air quality consultant agreed to by the local government to undertake, at the operator's full cost, an odour and/or dust assessment of the poultry farm operations indicating whether the concentrations of odour and/or dust are below the relevant assessment criteria at all receptors identified in the ENVALL Odour and Dust Impact Assessment report and, in the case of any noncompliance, what measures or works must be undertaken to achieve compliance. The air quality consultant shall provide a copy of the report to the local government at the same time as providing the report to the operator. The local government shall make the report available for public inspection.**

    ***A valid complaint is a compliant where evidence regarding the compliant can be substantiated as being valid by the local government which may include an independent assessment by a suitably qualified expert in odour/dust management.**

CONDITIONS TO BE MET PRIOR TO COMMENCEMENT OF DEVELOPMENT

16. **Prior to commencement of development, a detailed landscape screening plan is to be submitted to and approved by the local government.**

17. **Prior to the commencement of development, detailed drainage plans shall be submitted to the satisfaction of the local government.**

CONDITIONS TO BE MET PRIOR TO OCCUPATION OF DEVELOPMENT

18. **Prior to occupation of the development, landscape screening is to be completed in accordance with the approved plans or any approved modifications thereto to the satisfaction of the local government.**

19. **Prior to occupation, earthworks and batters are to be stabilised and vegetation is to be planted to prevent loose or erodible conditions and to minimise sand or dust to the satisfaction of the local government.**

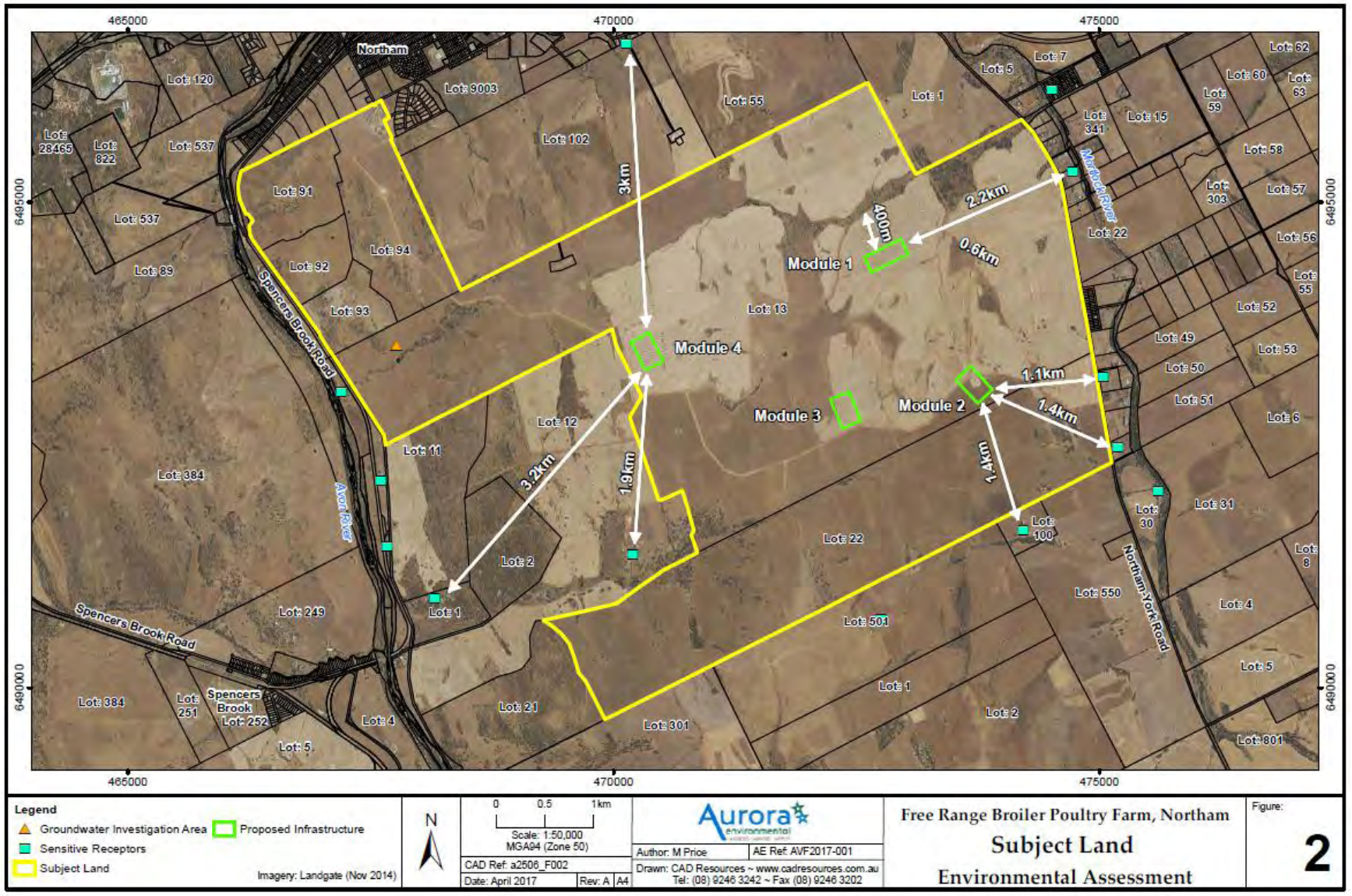
20. **Prior to occupation, stormwater drainage works must be completed in accordance with the approved plans to the satisfaction of the local government.**

21. **Prior to occupation, the development hereby permitted shall be connected to an approved effluent disposal system.**
22. **Prior to occupation, an area for each farm module shall be set aside for the purpose of waste disposal/collection bins.**
23. **Prior to occupation, a Fire Response Plan shall be submitted to the satisfaction of the local government. Once approved, the Fire Response Plan is to be implemented in its entirety.**
24. **Prior to occupation, perimeter fencing for each module is to be constructed to the satisfaction and specification of the local government.**
25. **Immediately upon completion of the development and prior to occupation of the development, the owner or occupier of the subject land must give written notice to the local government that, in his/her view, the development complies with all the requirements of this approval. The development must not be occupied until the local government has issued a statement in writing confirming that the development complies with this approval.**

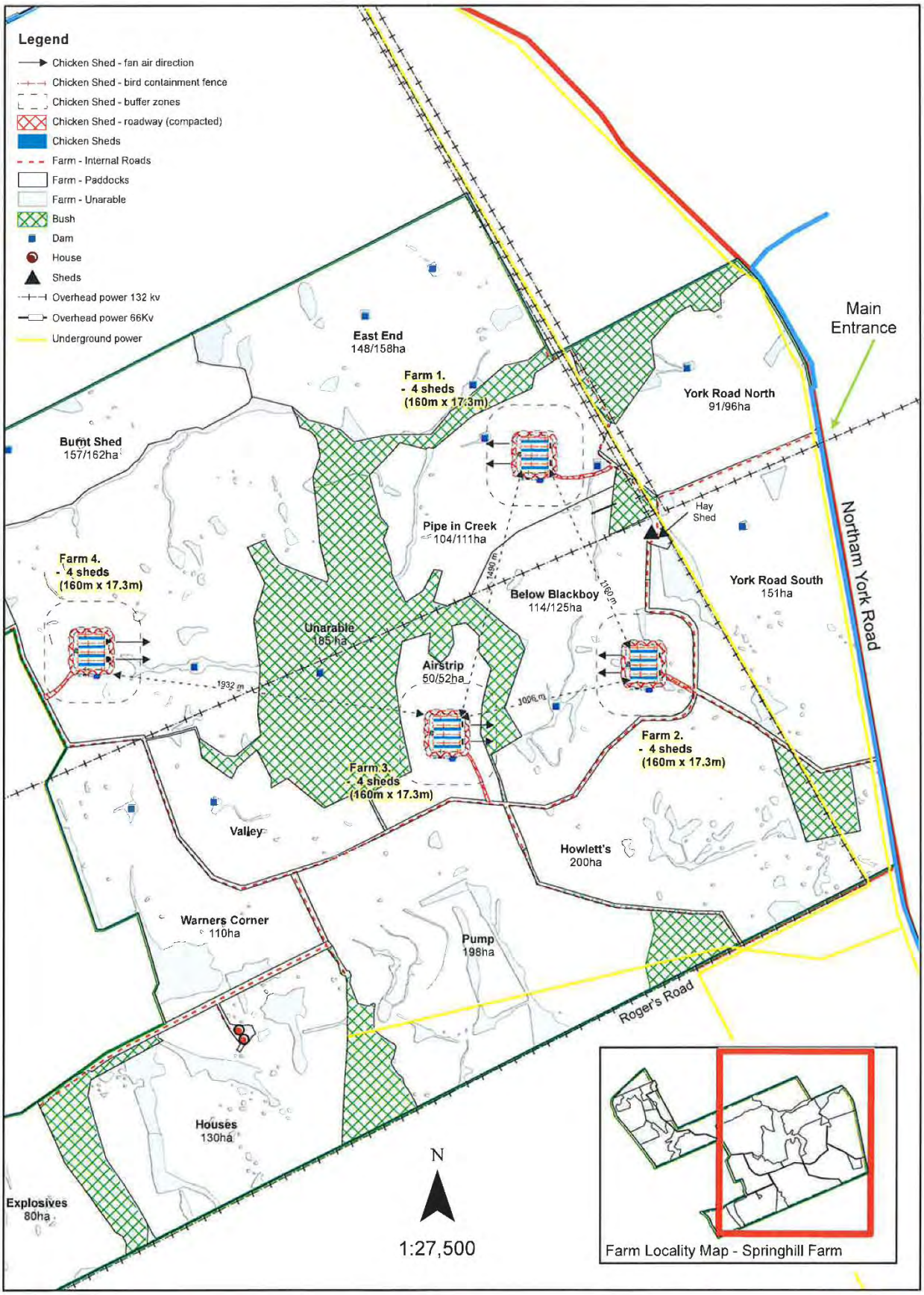
CONDITIONS REQUIRING ONGOING COMPLIANCE

26. **All car parking areas, loading areas, and vehicle access and circulation areas are to be maintained and available for car parking/loading, and vehicle access and circulation on an ongoing basis to the satisfaction of the local government.**
27. **All landscape screened areas are to be maintained on an ongoing basis to the satisfaction of the local government.**
28. **The on-site drainage system shall be maintained on an ongoing basis to the satisfaction of the local government.**
29. **The waste bin areas shall be maintained on an ongoing basis to the satisfaction of the local government and shall not be used for any other purpose.**

Attachment 1



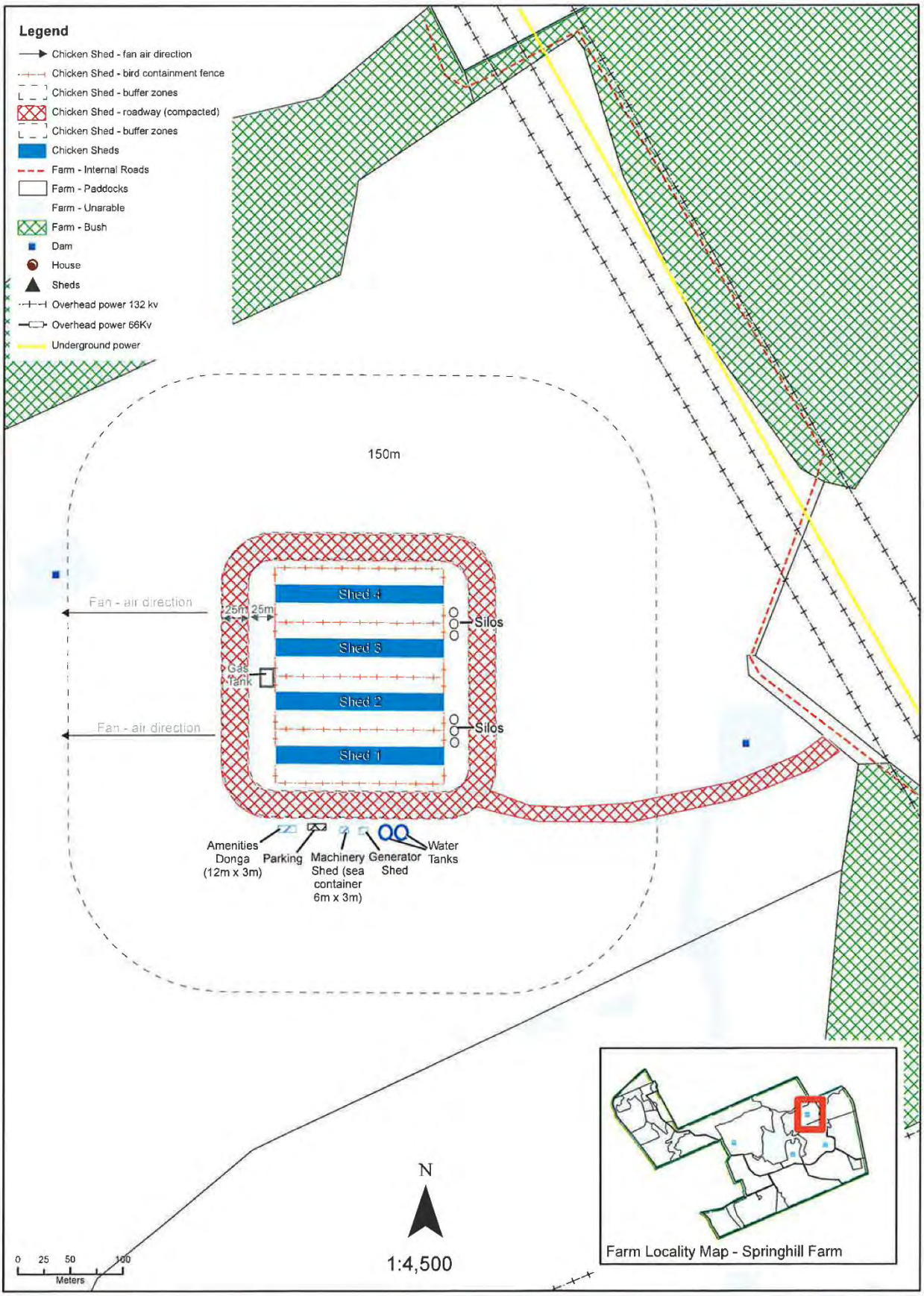
Attachment 2



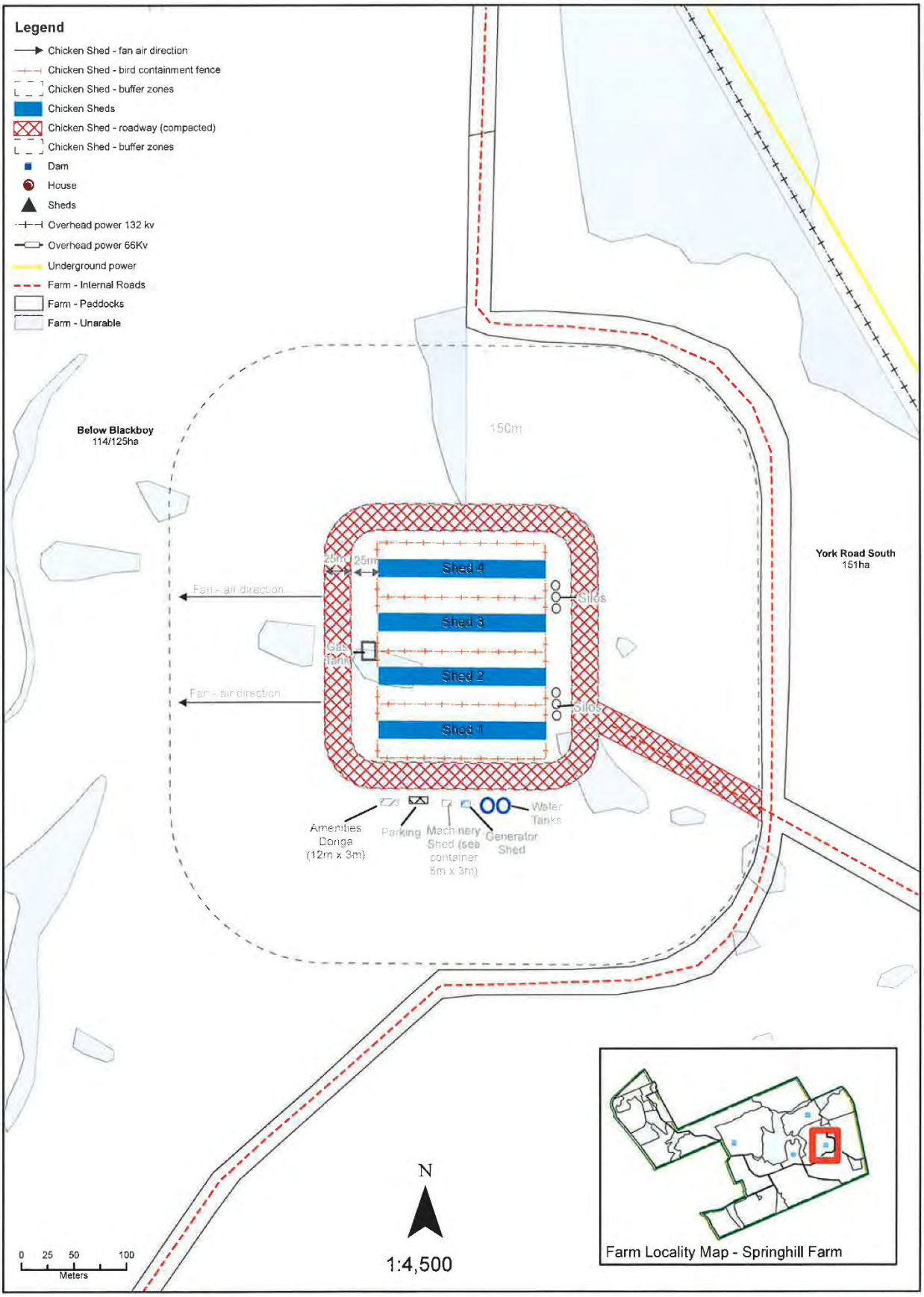
G & L O'Brien - Chicken Farms - Overview

0 250 500 1,000
Meters

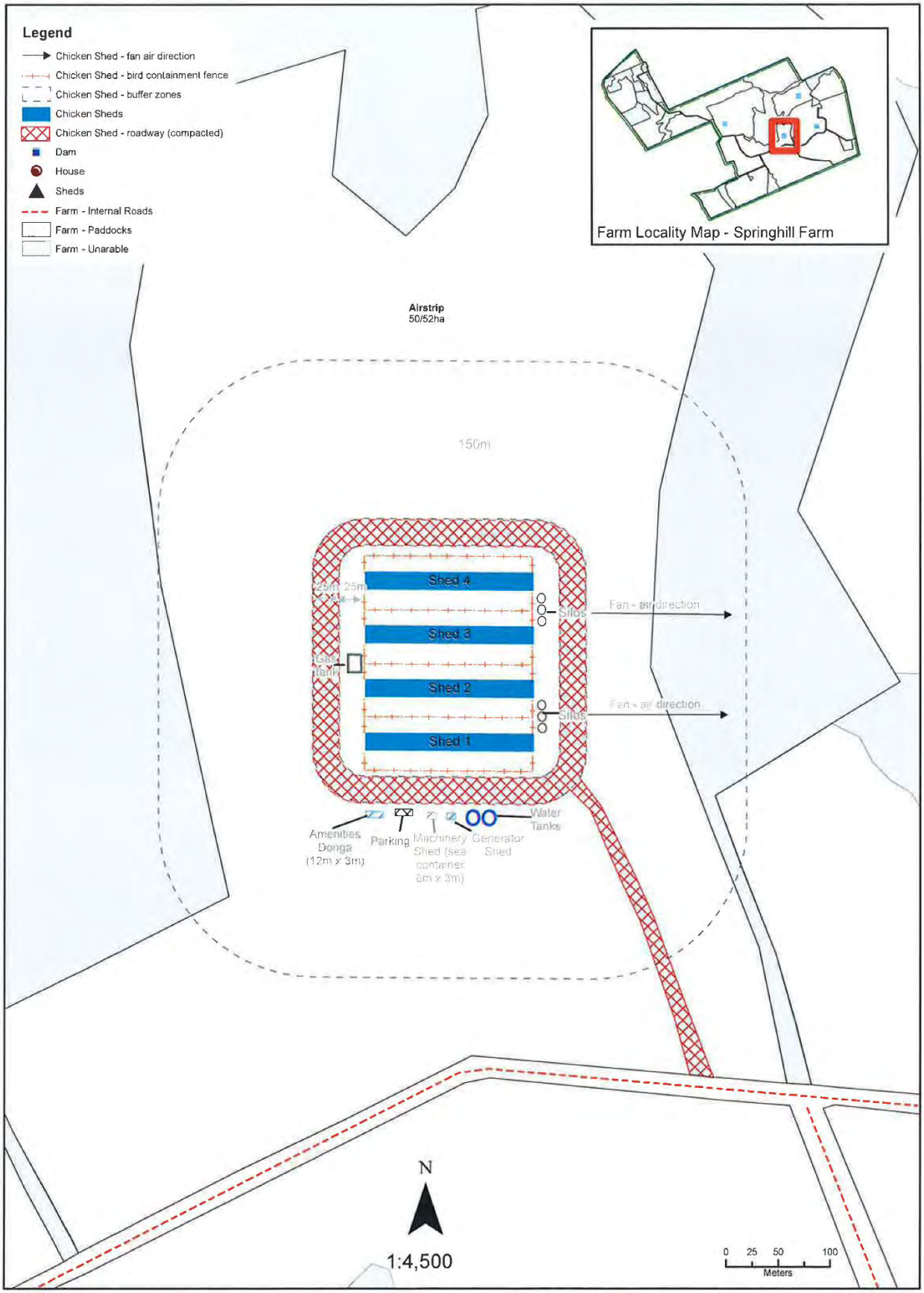
EQUII



G & L O'Brien - Chicken Farm 1 (Pipe in Creek, Springhill Farm)



G & L O'Brien - Chicken Farm 2 (Below Blackboy, Springhill Farm)



G & L O'Brien - Chicken Farm 3 (Airstirp, Springhill Farm)

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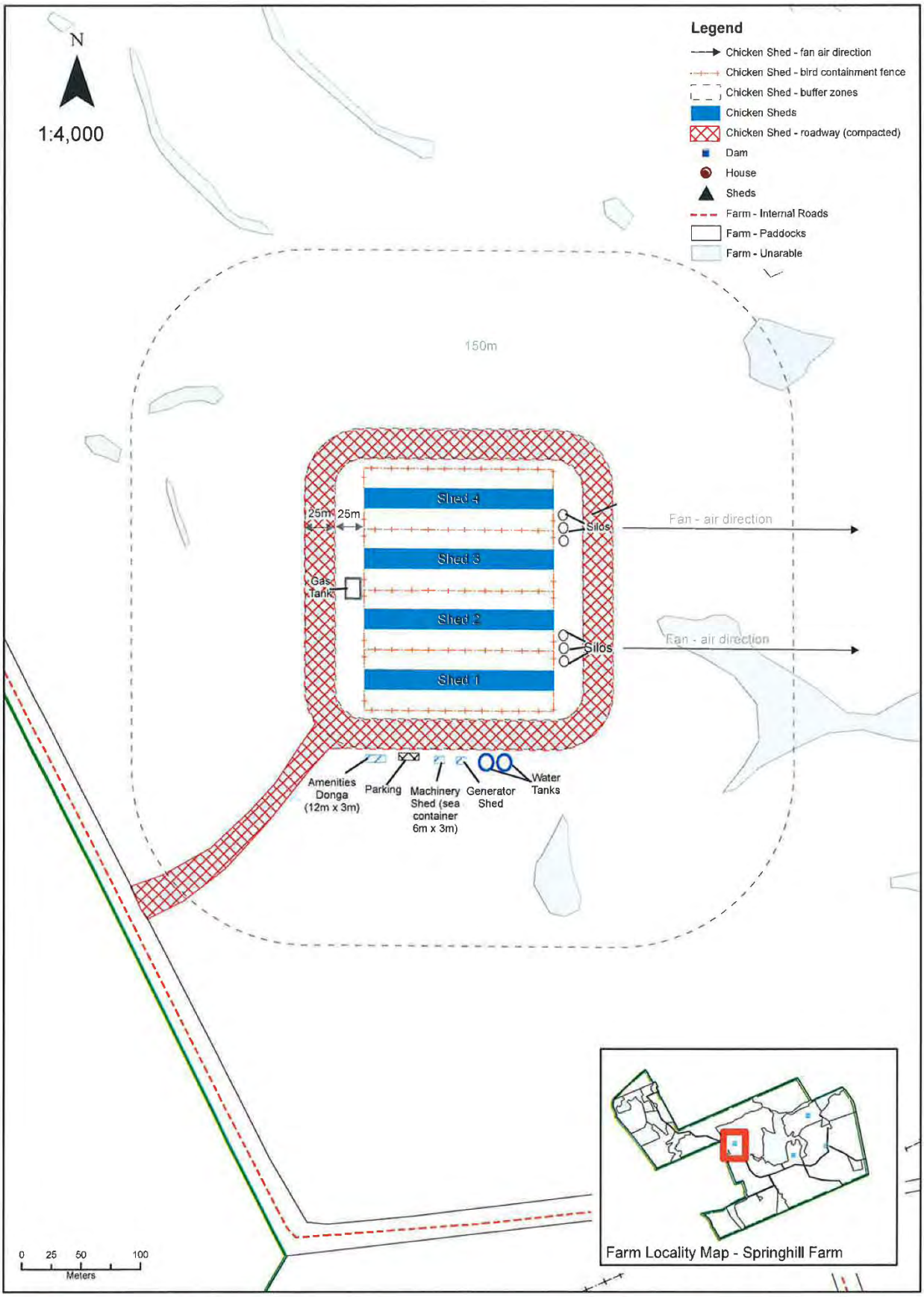

G & L O'Brien - Chicken Farm 4 (Trigg paddock, Springhill Farm)

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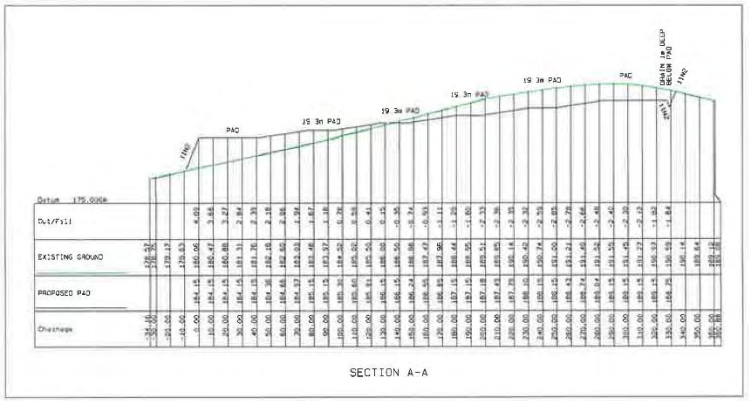
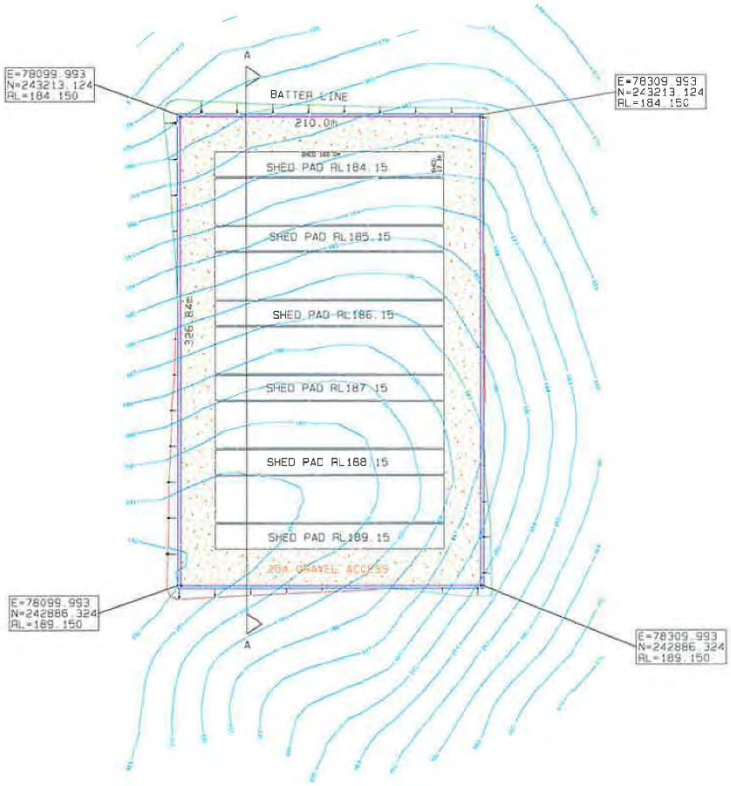
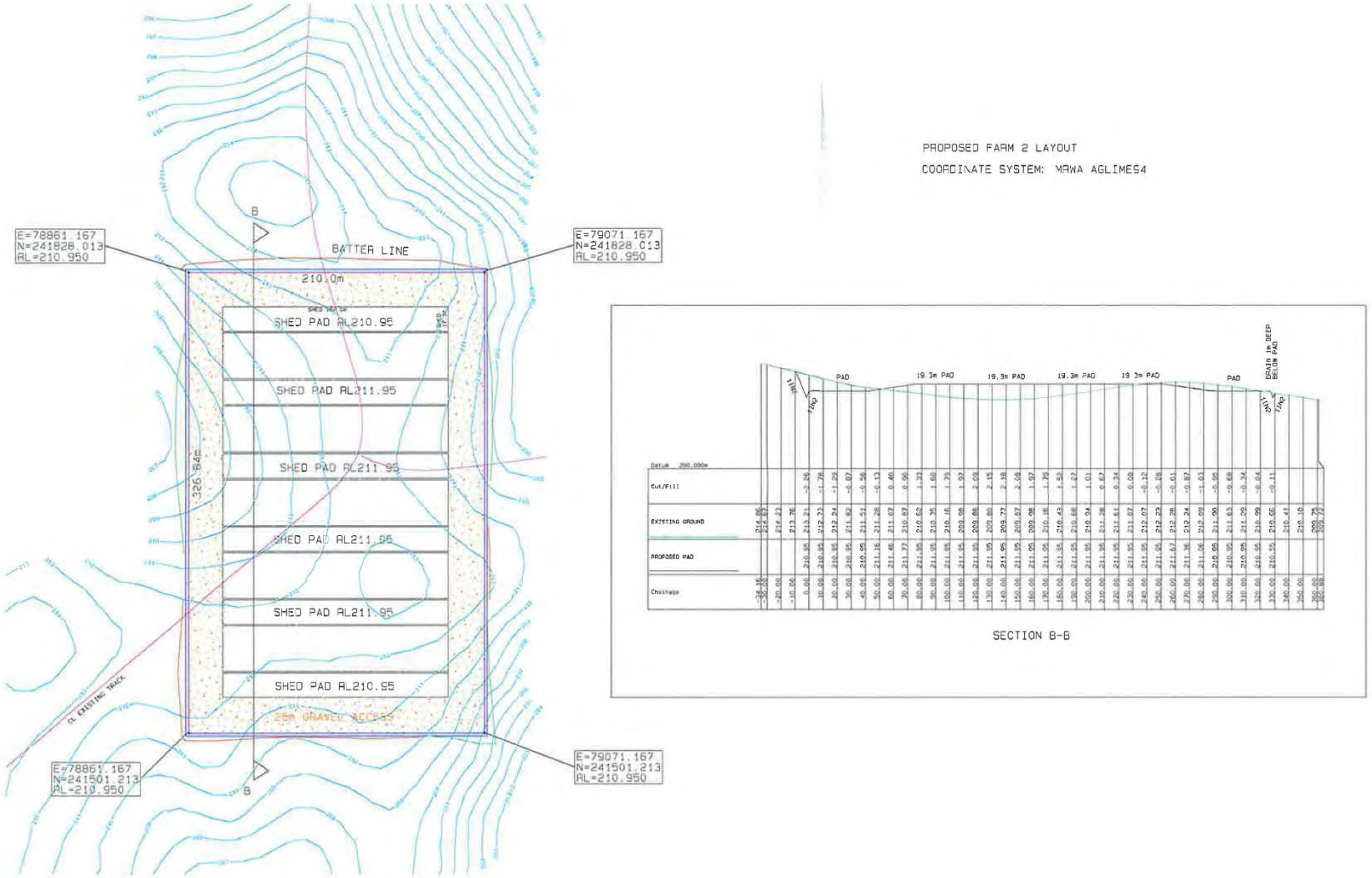


SECTION A-A



PROPOSED FARM 1 LAYOUT
COORDINATE SYSTEM: MRWA AGLIME94

FARM 1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N=241828.013
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AL=210.950
BATTER LINE
210.0m
326.564m
SHED PAD RL210.95
SHED PAD RL211.95
SHED PAD RL211.95
SHED PAD RL211.95
SHED PAD RL211.95
SHED PAD RL210.95
25M GRAVEL ACCESS
EXISTING TRACK
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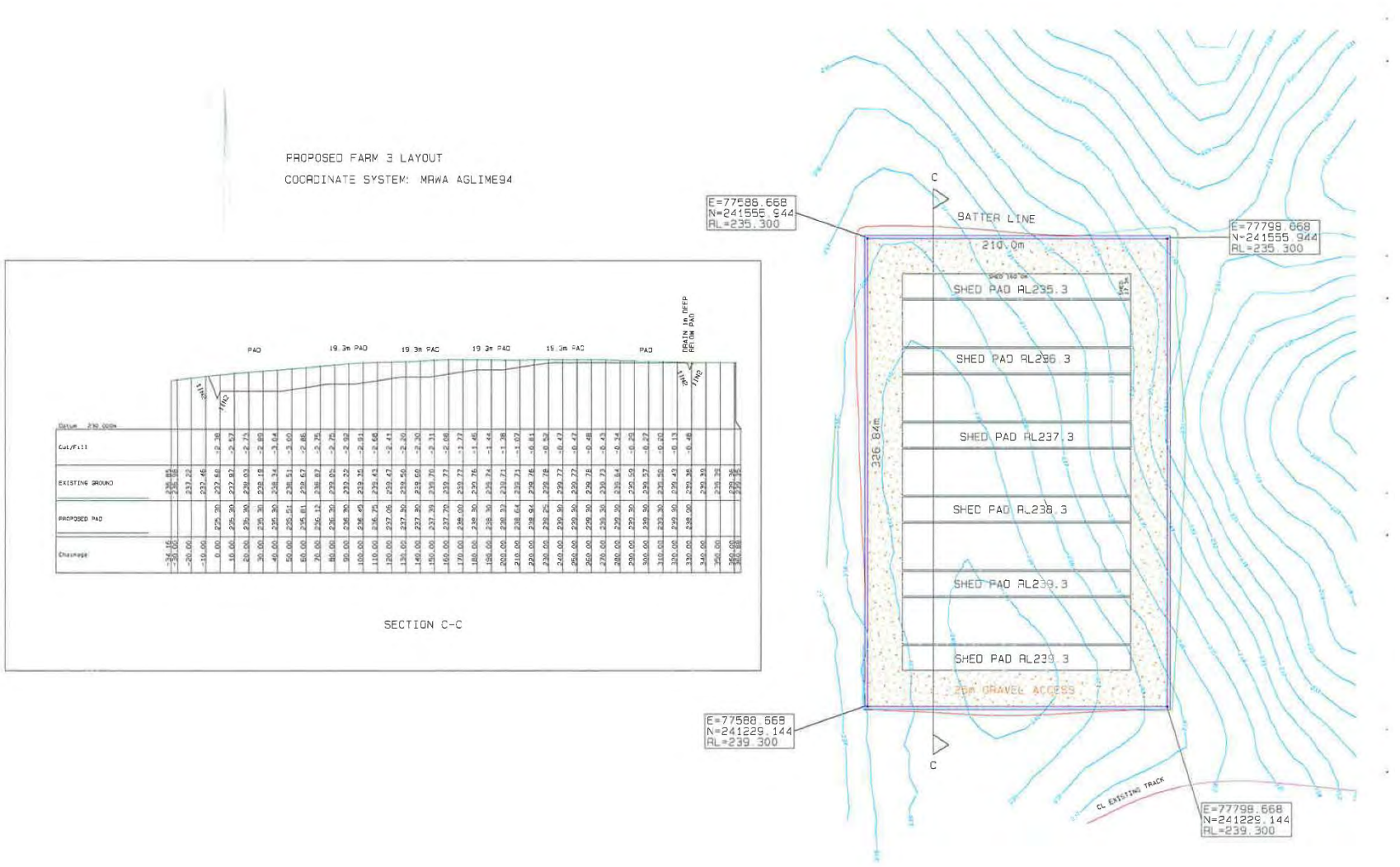
N=241501.213
AL=210.950
E=79071.167
N=241501.213
AL=210.950
B
B
PAD
19.3m PAD
19.3m PAD
19.3m PAD
19.3m PAD
PAD
DRAIN 1M DEEP BELOW PAD
1in6
1in6
1in6
1in6
Datum 200.000m
Cut/Fill
EXISTING GROUND
PROPOSED PAD
Chainage
SECTION B-B


PROPOSED FARM 3 LAYOUT
COORDINATE SYSTEM: MRWA AGLIME94
SECTION C-C
PAD
19.3m PAD
19.3m PAD
19.3m PAD
19.3m PAD
PAD
DRAIN 1m DEEP REFILM PAD
Datum 210.000m
Cut/Fill
EXISTING GROUND
PROPOSED PAD
Chainage
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N=241555.944
RL=235.300
C
BATTER LINE
210.0m
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RL=235.300
SHED PAD RL235.3
SHED PAD RL236.3
SHED PAD RL237.3
SHED PAD RL238.3
SHED PAD RL239.3
SHED PAD RL239.3
326.84m
20m GRAVEL ACCESS
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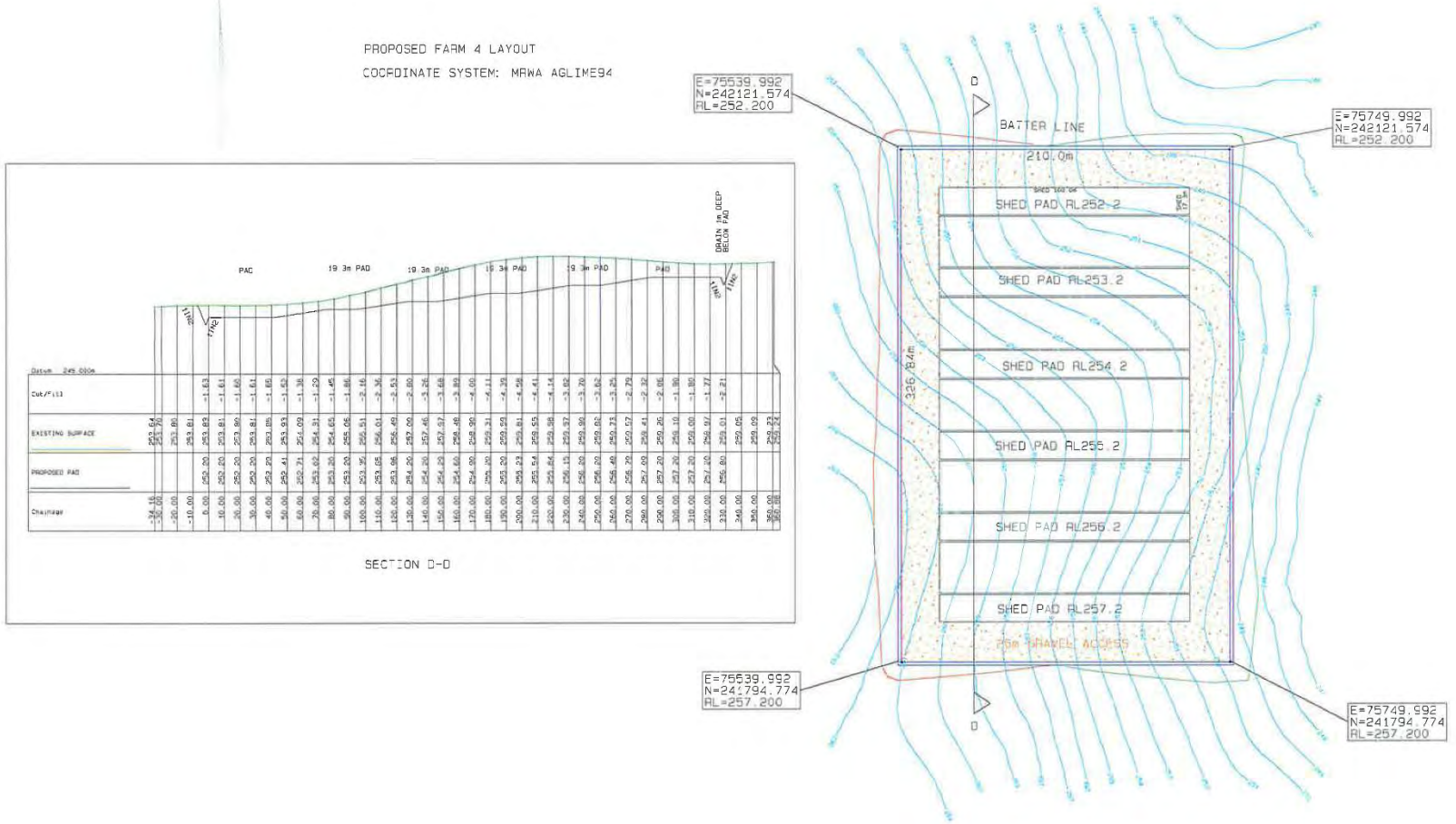
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RL=252.200
SHED PAD RL252.2
SHED PAD RL253.2
SHED PAD RL254.2
SHED PAD RL255.2
SHED PAD RL256.2
SHED PAD RL257.2
226.84m
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N=241794.774
RL=257.200
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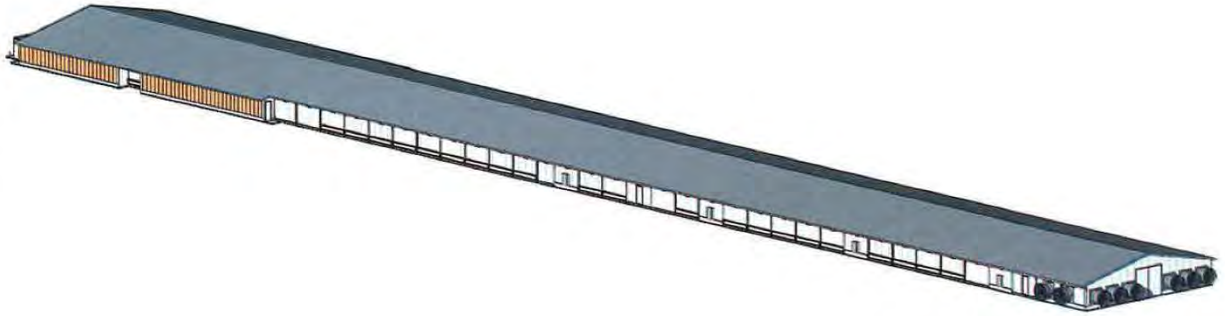
N=241794.774
RL=257.200
SECTION D-D

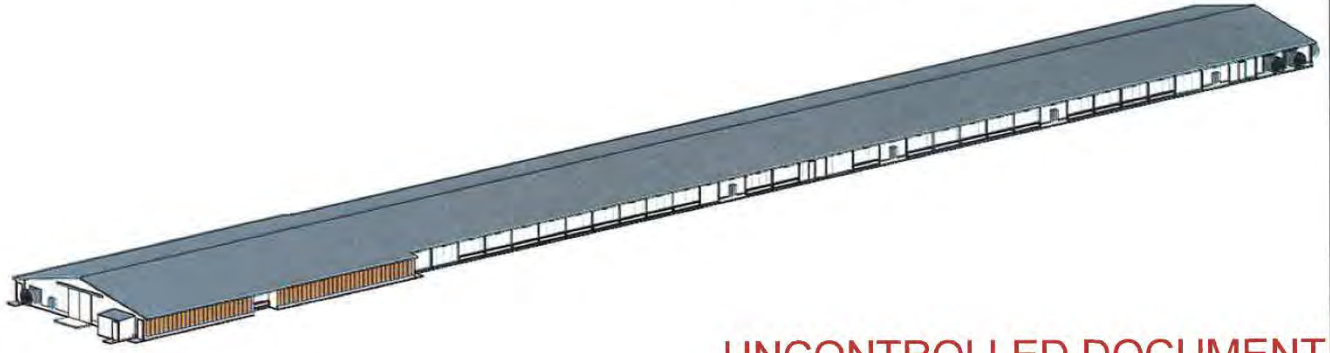
FREE RANGE POULTRY BROILER SHEDS

PROPOSED NEW CONSTRUCTION - preliminary drawings

DRAWING LIST

No.	Sheet Name
D 01	FLOOR PLAN
D 02	SHED ELEVATIONS
D 03	SECTION A
D 04	FAN END
D 05	COOL CELL END
D 06	EQUIPMENT LAYOUT
D 07	DETAILS
D 08	SECTION C
D 09	POP OUT WALL DETAILS
D 10	POP OUT ELEVATION





UNCONTROLLED DOCUMENT

PROPOSED NEW CONSTRUCTION - preliminary drawings

SANTREV

SANTREV PTY LTD
PO Box 95, Ipswich
Queensland Australia 4305

Phone 1300 815 988 (+61) 07 3281 3200
Fax 1300 815 988 (+61) 07 3281 6285
Email enquiries@santrevpoultry.com
Web: www.santrev.com.au
ABN 43 124 970 878
BSA QLD 1145296
CCBA SA BLD211636
BC VIC CS-L31372

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SANTREV APPROVAL: L.TREVANION
SANTREV SIGNATURE:
CLIENT APPROVAL: TRISTAN O'BRIEN
CLIENT SIGNATURE:
CLIENT SIGNATURE INDICATES THEIR APPROVAL OF THE PLANS AND THE LAYOUT/EQUIPMENT DOCUMENTED.

REV	DESCRIPTION	DATE
00	INITIAL CONCEPT DRAWINGS	29/03/2017

FREE RANGE POULTRY BROILER SHEDS

For: TRISTAN O'BRIEN
Project Address:

JENNACUBBINE
WA

sheet title: COVER SHEET
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3):
drawing no: CS 01

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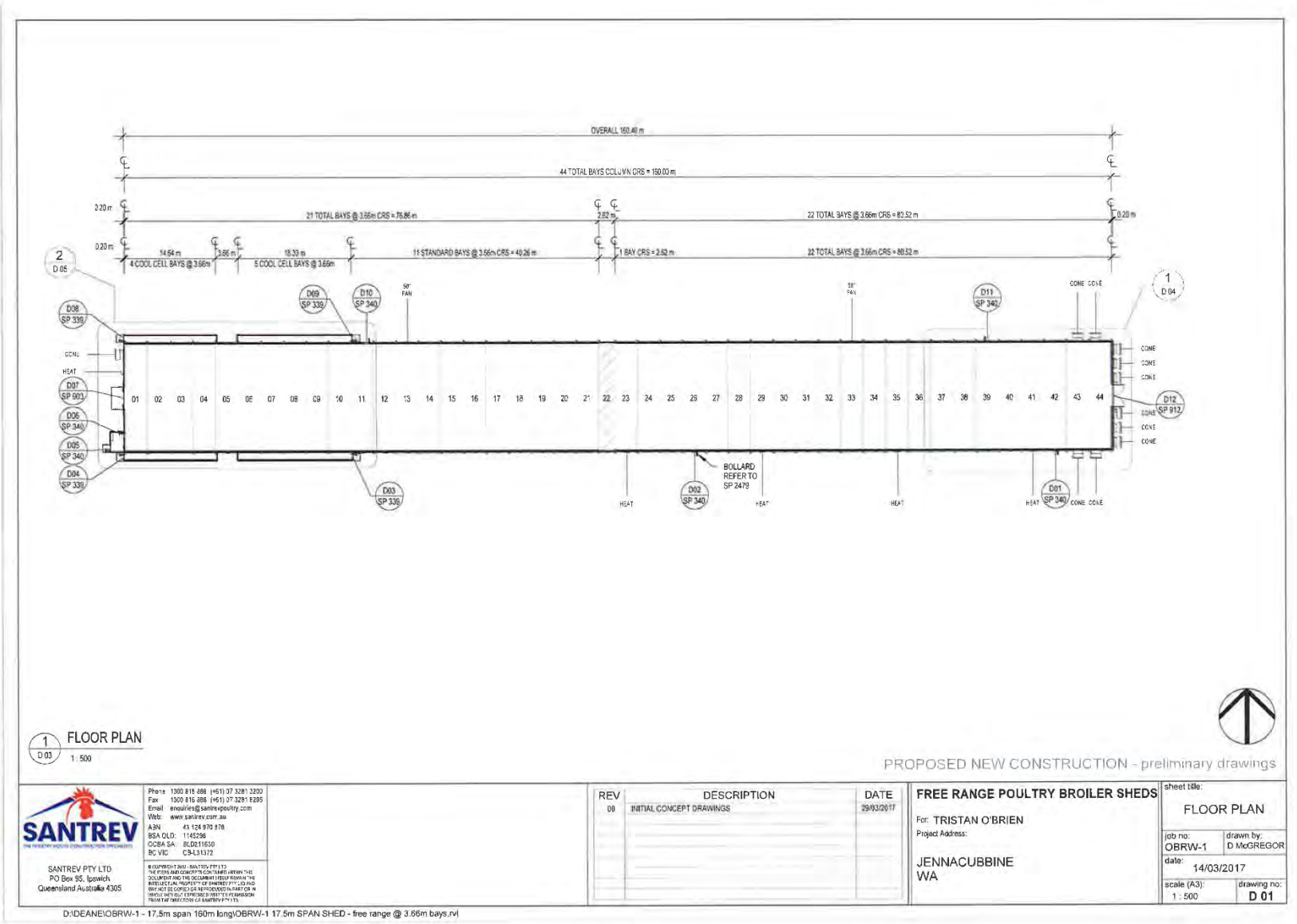
OVERALL 160.40 m
44 TOTAL BAYS COLUMN CRS = 160.03 m
0.20 m
21 TOTAL BAYS @ 3.66m CRS = 76.86 m
2.62 m
22 TOTAL BAYS @ 3.66m CRS = 80.52 m
0.20 m
14.64 m
3.66 m
15.33 m
11 STANDARD BAYS @ 3.66m CRS = 40.26 m
1 BAY CRS = 2.62 m
22 TOTAL BAYS @ 3.66m CRS = 80.52 m
4 COOL CELL BAYS @ 3.66m
5 COOL CELL BAYS @ 3.66m
2 D 05
1 D 04
D08 SP 336
D07 SP 903
D06 SP 340
D05 SP 340
D04 SP 336
D09 SP 339
D10 SP 340
D11 SP 340
D12 SP 912
D03 SP 339
D02 SP 340
D01 SP 340
SF FAN
CONE
HEAT
BOLLARD REFER TO SP 2479
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
1 D 03
FLOOR PLAN
1 : 500
PROPOSED NEW CONSTRUCTION - preliminary drawings
SANTREV
SANTREV PTY LTD
PO Box 95, Ipswich
Queensland Australia 4305
Phone 1300 815 388 (+61) 07 3281 3200
Fax 1300 815 388 (+61) 07 3281 8295
Email enquiries@santrevpoultry.com
Web: www.santrev.com.au
A3N 43 124 970 878
BSA QLD: 1145296
QCBA SA: BLD211630
BC VIC: CB-L31372
REV 00
DESCRIPTION INITIAL CONCEPT DRAWINGS
DATE 29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title: FLOOR PLAN
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): 1 : 500
drawing no: D 01
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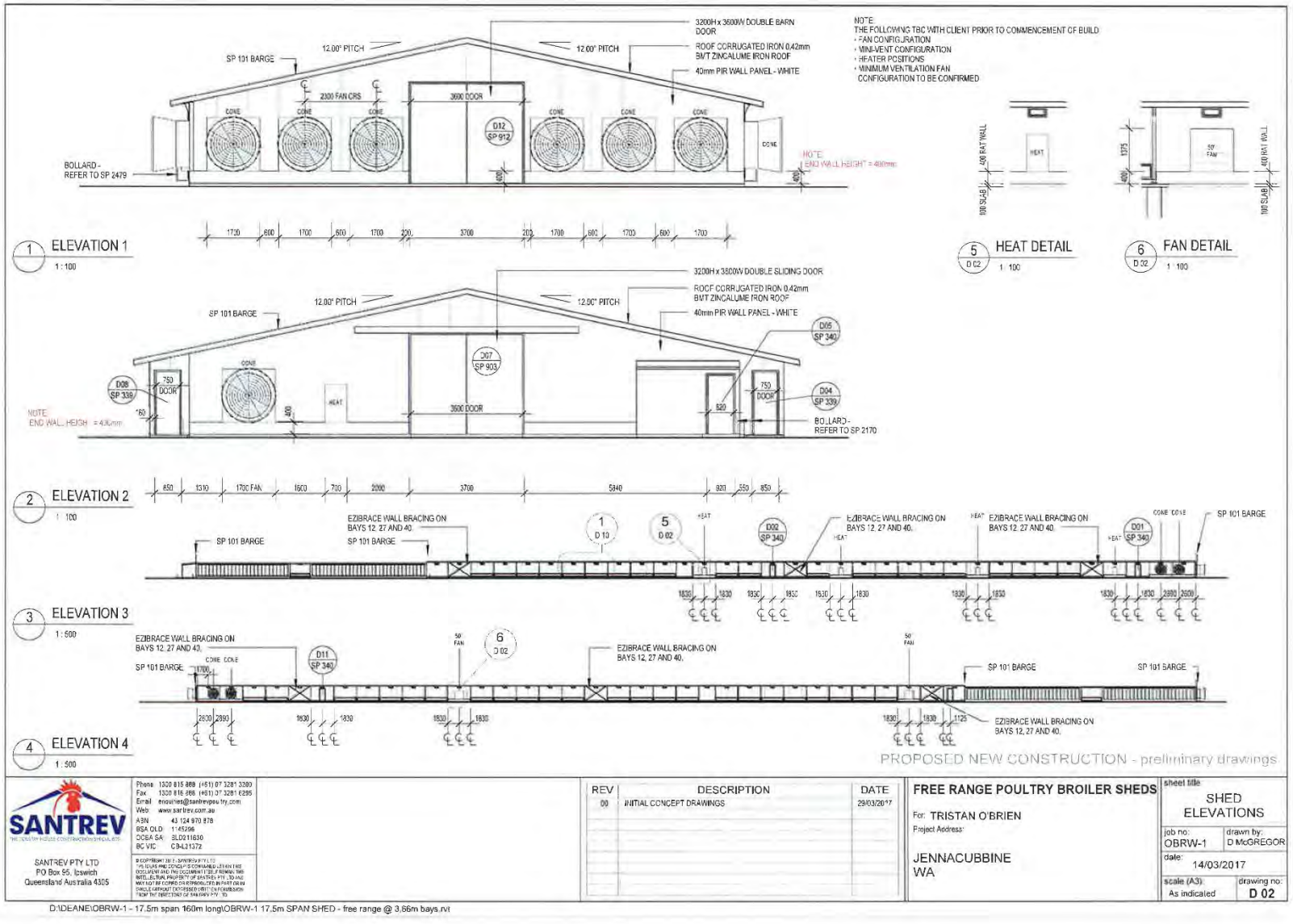
3200H x 3600W DOUBLE BARN DOOR
12.00° PITCH
SP 101 BARGE
ROOF CORRUGATED IRON 0.42mm BMT ZINCALUME IRON ROOF
40mm PIR WALL PANEL - WHITE
2300 FAN CRS
3600 DOOR
BOLLARD - REFER TO SP 2479
NOTE: END WALL HEIGHT = 400mm
NOTE: THE FOLLOWING TBC WITH CLIENT PRIOR TO COMMENCEMENT OF BUILD
• FAN CONFIGURATION
• MINI-VENT CONFIGURATION
• HEATER POSITIONS
• MINIMUM VENTILATION FAN CONFIGURATION TO BE CONFIRMED
1 ELEVATION 1 1 : 100
5 HEAT DETAIL 1 : 100
6 FAN DETAIL 1 : 100
3200H x 3600W DOUBLE SLIDING DOOR
750 DOOR
2 ELEVATION 2 1 : 100
EZIBRACE WALL BRACING ON BAYS 12, 27 AND 40.
3 ELEVATION 3 1 : 500
4 ELEVATION 4 1 : 500
PROPOSED NEW CONSTRUCTION - preliminary drawings
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PO Box 95, Ipswich
Queensland Australia 4305
REV 00 INITIAL CONCEPT DRAWINGS 29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title: SHED ELEVATIONS
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): As indicated
drawing no: D 02
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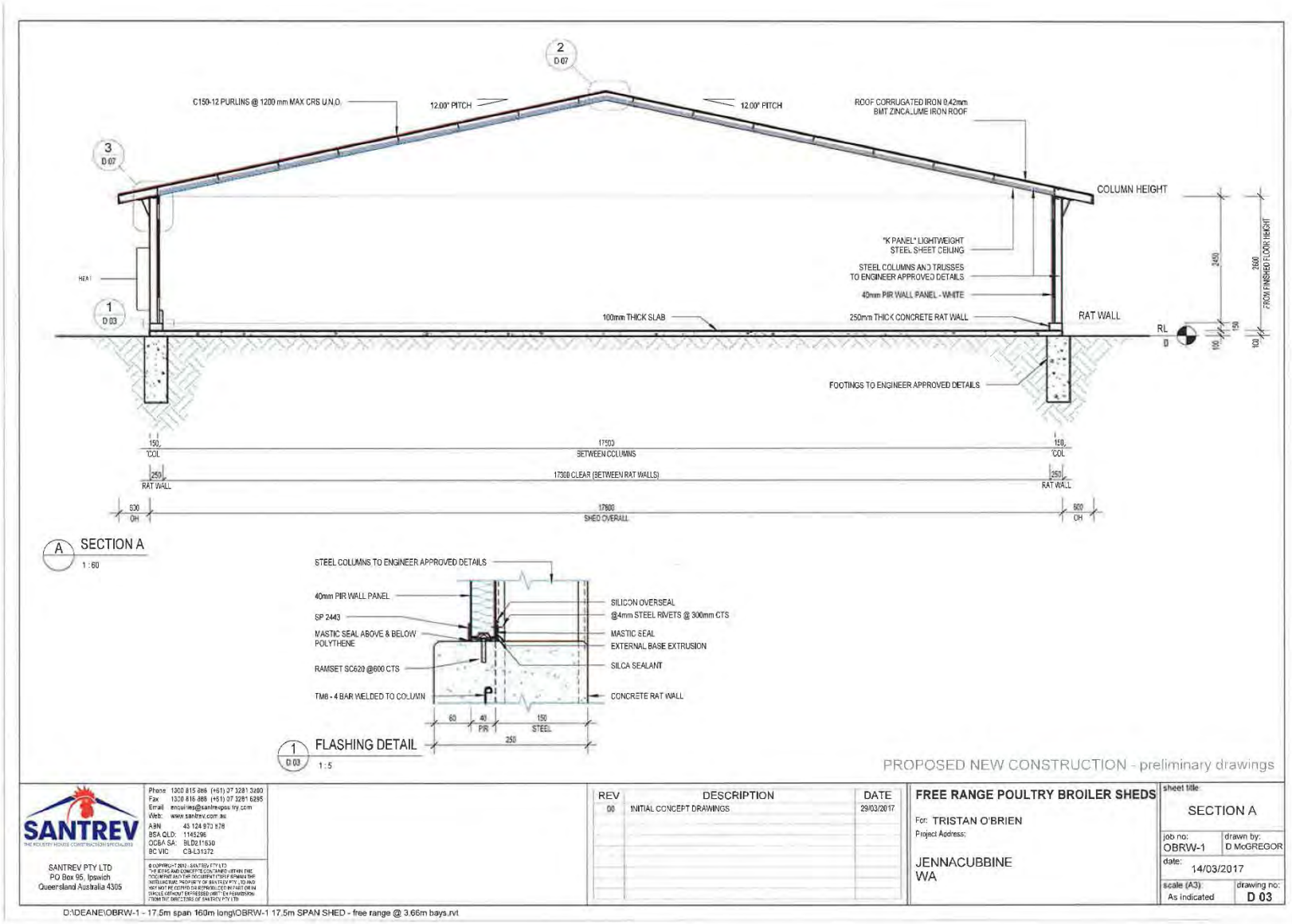
C150-12 PURLINS @ 1200 mm MAX CRS U.N.O.
12.00° PITCH
12.00° PITCH
ROOF CORRUGATED IRON 0.42mm BMT ZINCALUME IRON ROOF
COLUMN HEIGHT
"K PANEL" LIGHTWEIGHT STEEL SHEET CEILING
STEEL COLUMNS AND TRUSSES TO ENGINEER APPROVED DETAILS
40mm PIR WALL PANEL - WHITE
100mm THICK SLAB
250mm THICK CONCRETE RAT WALL
RAT WALL
RL
FROM FINISHED FLOOR HEIGHT
FOOTINGS TO ENGINEER APPROVED DETAILS
17503
BETWEEN COLUMNS
17300 CLEAR (BETWEEN RAT WALLS)
17800
SHED OVERALL
SECTION A
1 : 60
STEEL COLUMNS TO ENGINEER APPROVED DETAILS
40mm PIR WALL PANEL
SP 2443
MASTIC SEAL ABOVE & BELOW POLYTHENE
RAMSET SC620 @600 CTS
TM6 - 4 BAR WELDED TO COLUMN
SILICON OVERSEAL
@4mm STEEL RIVETS @ 300mm CTS
MASTIC SEAL
EXTERNAL BASE EXTRUSION
SILCA SEALANT
CONCRETE RAT WALL
FLASHING DETAIL
1 : 5
PROPOSED NEW CONSTRUCTION - preliminary drawings
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REV 00 INITIAL CONCEPT DRAWINGS 29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title: SECTION A
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): As indicated
drawing no: D 03
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ROOF OVERHANG
BOLLARD - REFER TO SP 2479
1900 x 820 PA DOOR SIT ON RAT WALL
D11 SP 340
CONE
3200H x 3600W DOUBLE BARN DOOR
D12 SP 912
17500 BETWEEN COLUMNS
17550
17850 SHED OVERALL
35
37
38
39
40
41
42
43
44
D01 SP 340
ROOF OVERHANG
HEAT
1 D01 FAN END
1 : 100
PROPOSED NEW CONSTRUCTION - preliminary drawings
SANTREV
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Phone 1300 815 888 (+61) 37 3281 3230
Fax 1300 816 888 (+61) 37 3281 8235
Email enquiries@santrevpoultry.com
Web: www.santrev.com.au
ABN 43 124 970 878
BSA QLD: 1145298
QCBA SA: BL0011630
BC VIC: CB-L31372
REV
DESCRIPTION
DATE
03
INITIAL CONCEPT DRAWINGS
29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title:
FAN END
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): 1 : 100
drawing no: D 04
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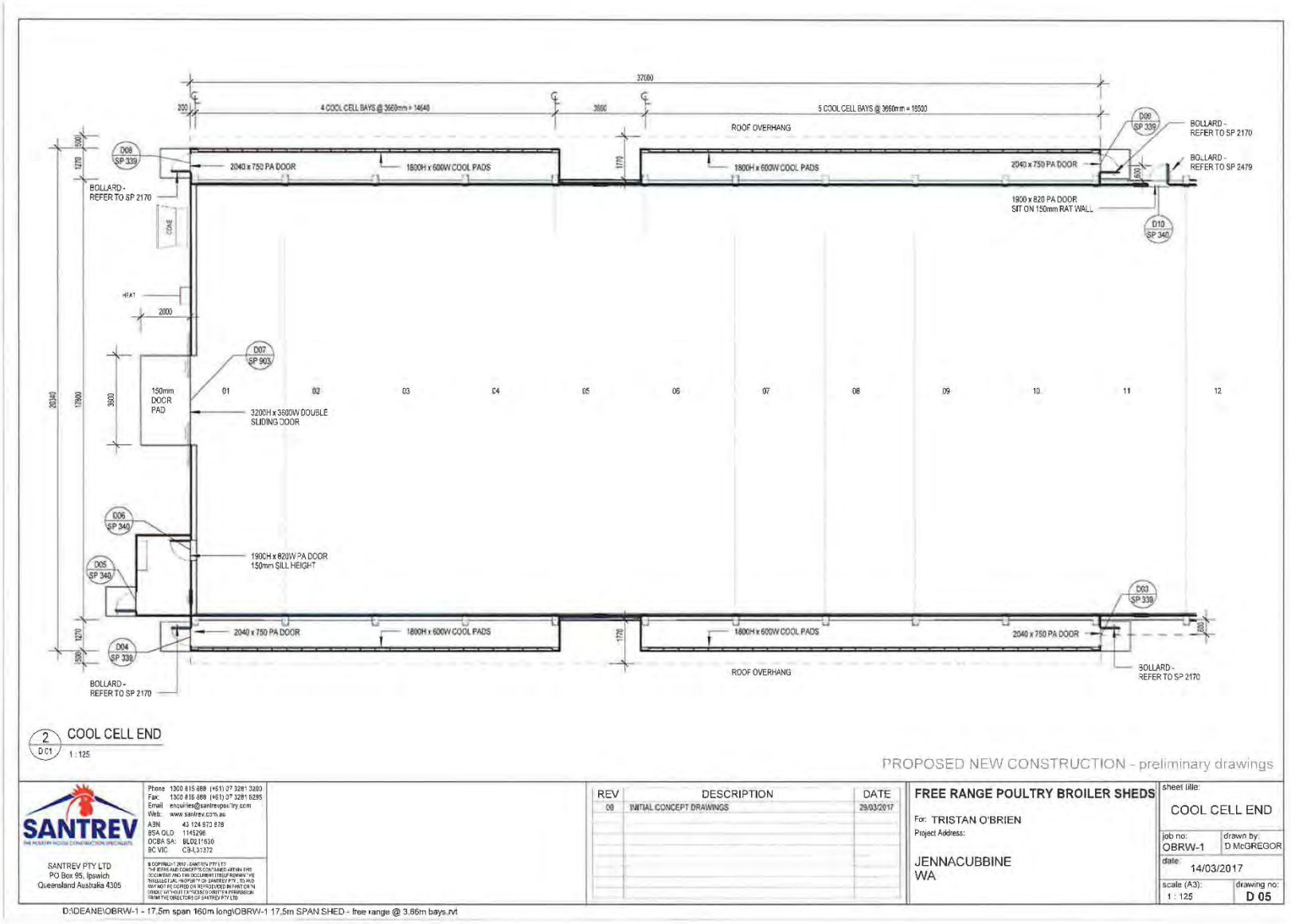
37000
4 COOL CELL BAYS @ 3660mm = 14640
5 COOL CELL BAYS @ 3660mm = 18500
ROOF OVERHANG
2040 x 750 PA DOOR
1800H x 600W COOL PADS
1900 x 820 PA DOOR
SIT ON 150mm RAT WALL
BOLLARD - REFER TO SP 2170
BOLLARD - REFER TO SP 2479
150mm DOOR PAD
3200H x 3600W DOUBLE SLIDING DOOR
1900H x 820W PA DOOR
150mm SILL HEIGHT
HEAT
2000
01
02
03
04
05
06
07
08
09
10
11
12
D08 SP 339
D09 SP 339
D10 SP 340
D07 SP 903
D06 SP 340
D05 SP 340
D04 SP 339
D03 SP 338
2 D 01
COOL CELL END
1 : 125
PROPOSED NEW CONSTRUCTION - preliminary drawings
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Phone 1300 815 888 (+61) 07 3281 3200
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Web: www.santrev.com.au
ABN 43 124 873 878
BSA QLD 1145296
QCBA SA: BLD211530
BC VIC CB-L31372
REV | DESCRIPTION | DATE
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FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title: COOL CELL END
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): 1 : 125
drawing no: D 05
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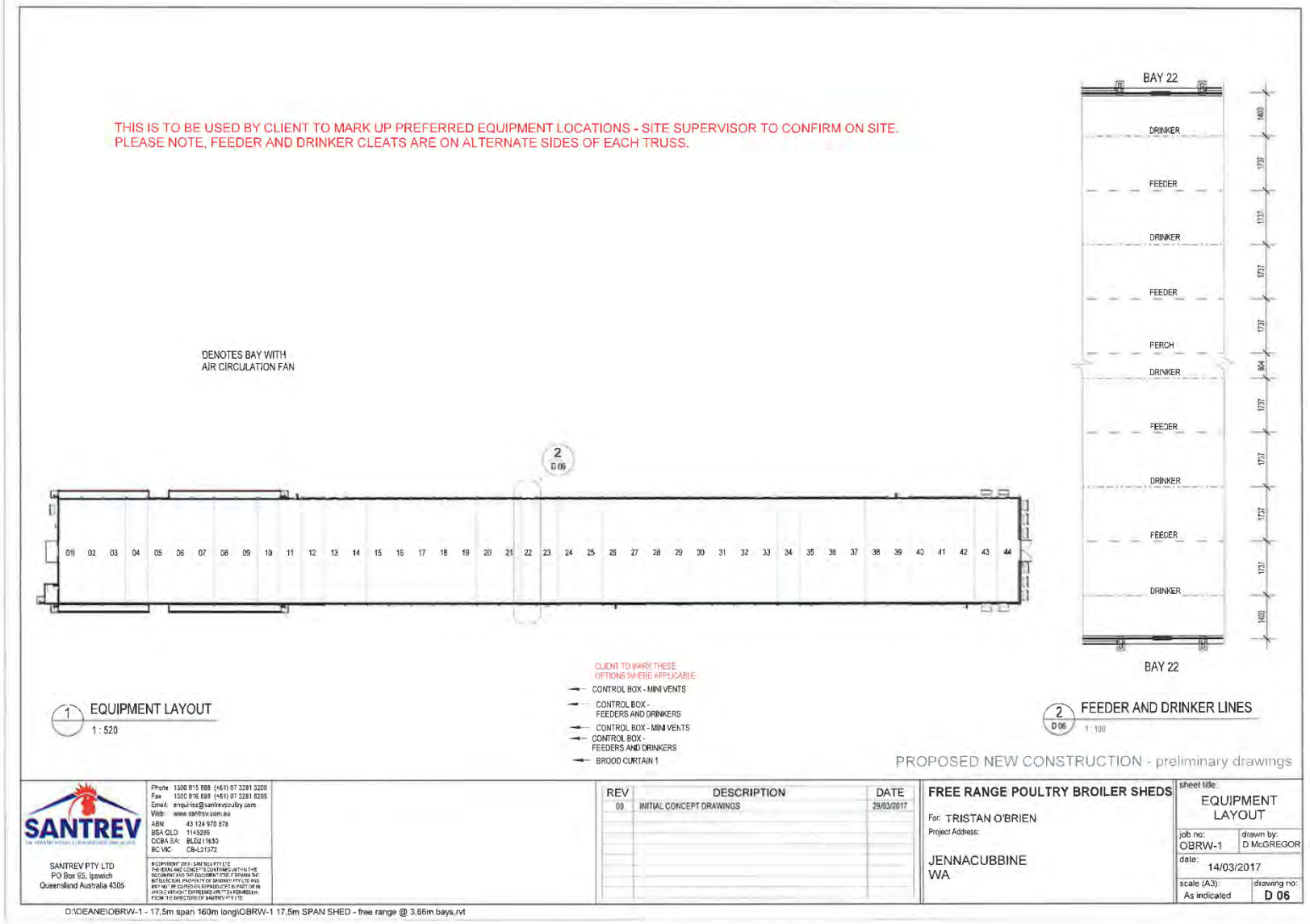
THIS IS TO BE USED BY CLIENT TO MARK UP PREFERRED EQUIPMENT LOCATIONS - SITE SUPERVISOR TO CONFIRM ON SITE.
PLEASE NOTE, FEEDER AND DRINKER CLEATS ARE ON ALTERNATE SIDES OF EACH TRUSS.
DENOTES BAY WITH AIR CIRCULATION FAN
BAY 22
DRINKER
FEEDER
DRINKER
FEEDER
PERCH
DRINKER
FEEDER
DRINKER
FEEDER
DRINKER
BAY 22
1400
1737
1737
1737
1737
864
1737
1737
1737
1737
1400
2
D 06
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
CLIENT TO MARK THESE OPTIONS WHERE APPLICABLE
CONTROL BOX - MINI VENTS
CONTROL BOX - FEEDERS AND DRINKERS
CONTROL BOX - MINI VENTS
CONTROL BOX - FEEDERS AND DRINKERS
BROOD CURTAIN 1
1 EQUIPMENT LAYOUT
1 : 520
2 D 06 FEEDER AND DRINKER LINES
1 : 100
PROPOSED NEW CONSTRUCTION - preliminary drawings
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Fax 1300 816 888 (+61) 07 3281 8255
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Web: www.santrev.com.au
ABN 43 124 970 878
BSA QLD: 1145286
OCBA SA: BLD21630
BC VIC: CB-L21372
REV | DESCRIPTION | DATE
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FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title: EQUIPMENT LAYOUT
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): As indicated
drawing no: D 06
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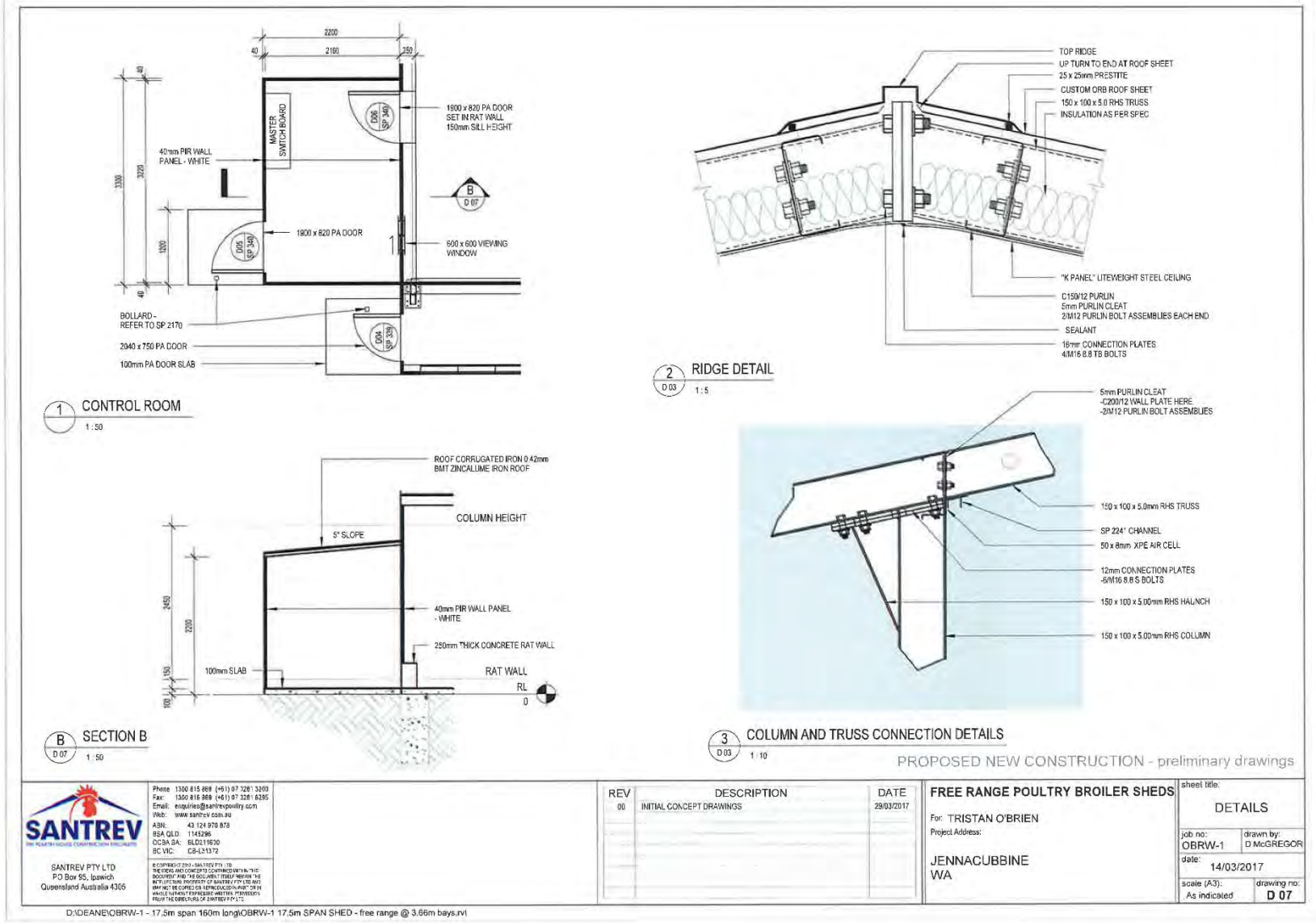
2200
40
2160
250
MASTER SWITCH BOARD
D06 SP 340
1800 x 820 PA DOOR SET IN RAT WALL 150mm SILL HEIGHT
40mm PIR WALL PANEL - WHITE
B D 07
1800 x 820 PA DOOR
D05 SP 340
600 x 600 VIEWING WINDOW
BOLLARD - REFER TO SP 2170
2040 x 750 PA DOOR
D04 SP 339
100mm PA DOOR SLAB
1 CONTROL ROOM 1 : 50
TOP RIDGE
UP TURN TO END AT ROOF SHEET
25 x 25mm PRESTITE
CUSTOM ORB ROOF SHEET
150 x 100 x 5.0 RHS TRUSS
INSULATION AS PER SPEC
"K PANEL" LITEWEIGHT STEEL CEILING
C150/12 PURLIN
5mm PURLIN CLEAT
2/M12 PURLIN BOLT ASSEMBLIES EACH END
SEALANT
16mm CONNECTION PLATES
4/M16 8.8 TB BOLTS
2 D 03 RIDGE DETAIL 1 : 5
ROOF CORRUGATED IRON 0.42mm BMT ZINCALUME IRON ROOF
COLUMN HEIGHT
5° SLOPE
40mm PIR WALL PANEL - WHITE
250mm THICK CONCRETE RAT WALL
100mm SLAB
RAT WALL
RL
0
B D 07 SECTION B 1 : 50
5mm PURLIN CLEAT
-C200/12 WALL PLATE HERE
-2/M12 PURLIN BOLT ASSEMBLIES
150 x 100 x 5.0mm RHS TRUSS
SP 224° CHANNEL
50 x 8mm XPE AIR CELL
12mm CONNECTION PLATES
-6/M16 8.8 S BOLTS
150 x 100 x 5.00mm RHS HAUNCH
150 x 100 x 5.00mm RHS COLUMN
3 D 03 COLUMN AND TRUSS CONNECTION DETAILS 1 : 10
PROPOSED NEW CONSTRUCTION - preliminary drawings
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Fax 1300 816 868 (+61) 07 3281 6295
Email enquiries@santrevpoultry.com
Web www.santrev.com.au
ABN: 43 124 978 878
BSA QLD: 1145296
QCBA SA: BLD211630
BC VIC: CB-L31372
REV 00 DESCRIPTION INITIAL CONCEPT DRAWINGS DATE 29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title: DETAILS
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): As indicated
drawing no: D 07
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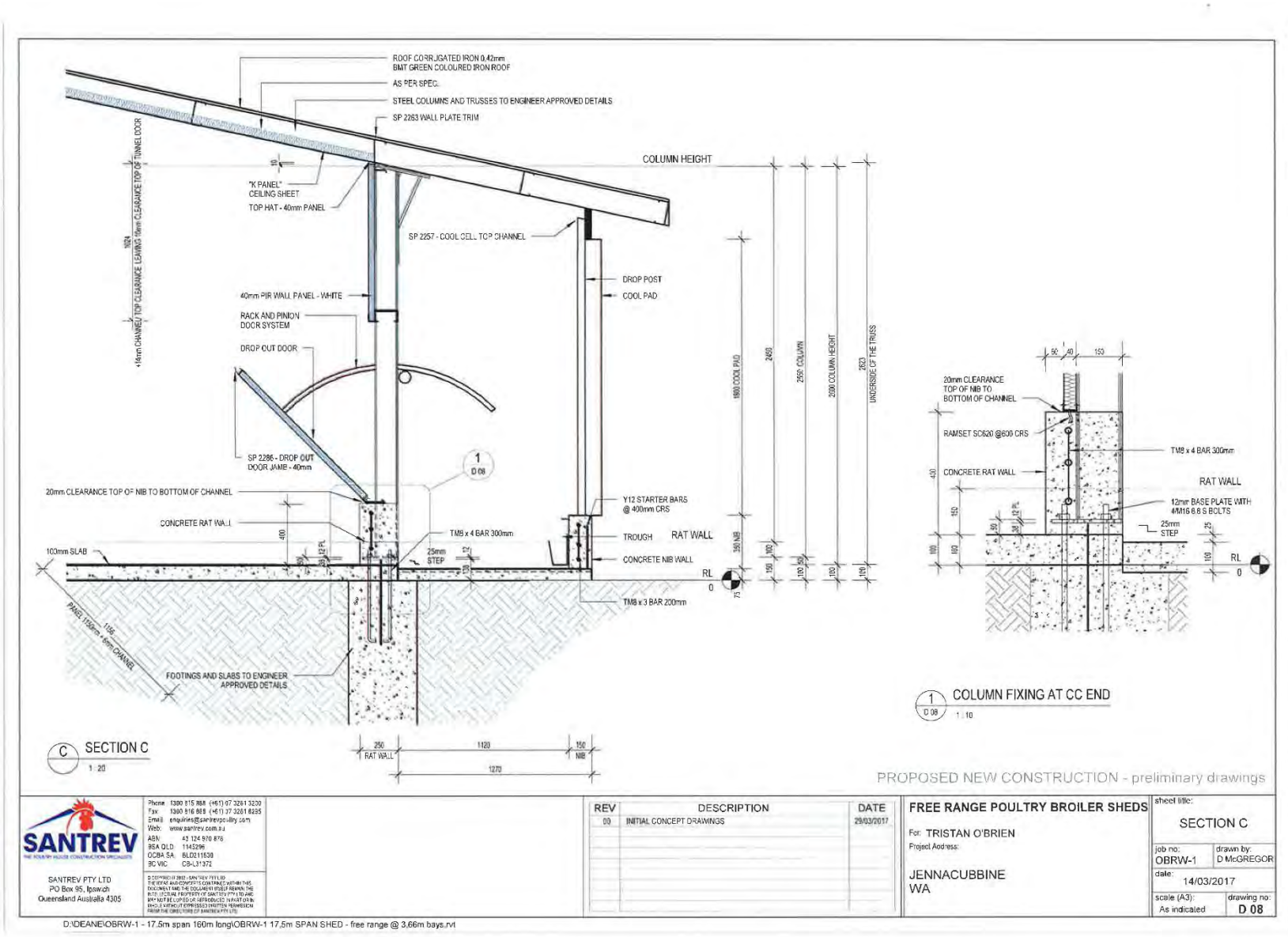
ROOF CORRUGATED IRON 0.42mm
BMT GREEN COLOURED IRON ROOF
AS PER SPEC.
STEEL COLUMNS AND TRUSSES TO ENGINEER APPROVED DETAILS
SP 2263 WALL PLATE TRIM
COLUMN HEIGHT
"K PANEL" CEILING SHEET
TOP HAT - 40mm PANEL
SP 2257 - COOL CELL TOP CHANNEL
DROP POST
COOL PAD
40mm PIR WALL PANEL - WHITE
RACK AND PINION DOOR SYSTEM
DROP OUT DOOR
SP 2286 - DROP OUT DOOR JAMB - 40mm
20mm CLEARANCE TOP OF NIB TO BOTTOM OF CHANNEL
CONCRETE RAT WALL
100mm SLAB
TM8 x 4 BAR 300mm
25mm STEP
Y12 STARTER BARS @ 400mm CRS
TROUGH
RAT WALL
CONCRETE NIB WALL
TM8 x 3 BAR 200mm
FOOTINGS AND SLABS TO ENGINEER APPROVED DETAILS
1600 COOL PAD
2400
2550 COLUMN
2600 COLUMN HEIGHT
7623 UNDERSIDE OF THE TRUSS
SECTION C
1 : 20
20mm CLEARANCE TOP OF NIB TO BOTTOM OF CHANNEL
RAMSET SC620 @600 CRS
TM8 x 4 BAR 300mm
CONCRETE RAT WALL
RAT WALL
12mm BASE PLATE WITH 4/M16 8.8 S BOLTS
25mm STEP
COLUMN FIXING AT CC END
1 : 10
PROPOSED NEW CONSTRUCTION - preliminary drawings
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SANTREV PTY LTD
PO Box 95, Ipswich
Queensland Australia 4305
REV
DESCRIPTION
DATE
00
INITIAL CONCEPT DRAWINGS
29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title:
SECTION C
job no: OBRW-1
drawn by: D McGREGOR
date: 14/03/2017
scale (A3): As indicated
drawing no: D 08
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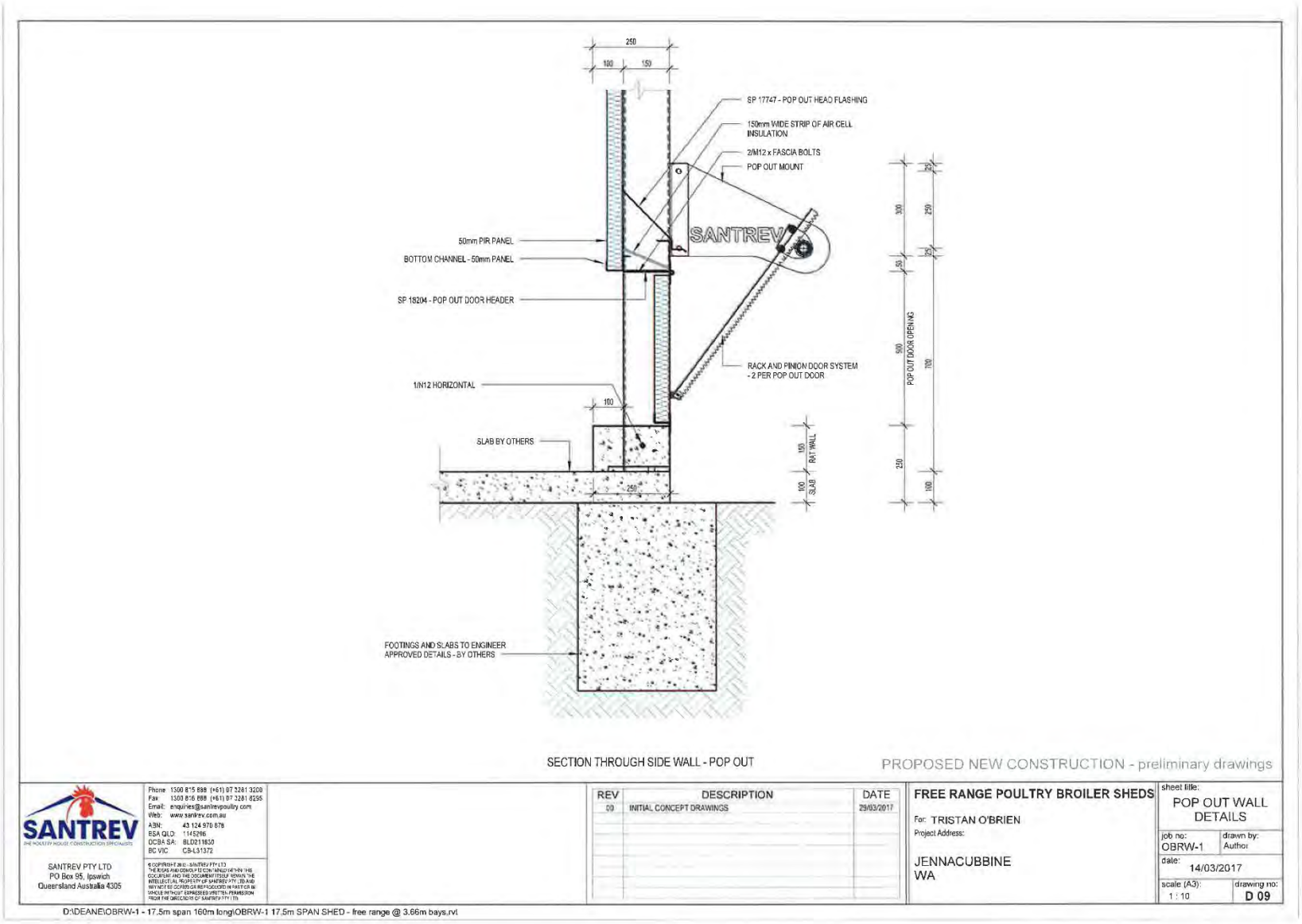
250
100
150
SP 17747 - POP OUT HEAD FLASHING
150mm WIDE STRIP OF AIR CELL INSULATION
2/M12 x FASCIA BOLTS
POP OUT MOUNT
SANTREV
50mm PIR PANEL
BOTTOM CHANNEL - 50mm PANEL
SP 18204 - POP OUT DOOR HEADER
RACK AND PINION DOOR SYSTEM - 2 PER POP OUT DOOR
1/M12 HORIZONTAL
100
SLAB BY OTHERS
250
150
RAT WALL
100
SLAB
300
250
50
500
POP OUT DOOR OPENING
700
250
100
FOOTINGS AND SLABS TO ENGINEER APPROVED DETAILS - BY OTHERS
SECTION THROUGH SIDE WALL - POP OUT
PROPOSED NEW CONSTRUCTION - preliminary drawings
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Fax 1300 816 898 (+61) 07 3281 8295
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Web: www.santrev.com.au
ABN: 43 124 970 878
BSA QLD 1145296
DCBA SA: BLD211650
BC VIC CB-L31372
REV
DESCRIPTION
DATE
09
INITIAL CONCEPT DRAWINGS
29/03/2017
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For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title:
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job no: OBRW-1
drawn by: Author
date: 14/03/2017
scale (A3): 1 : 10
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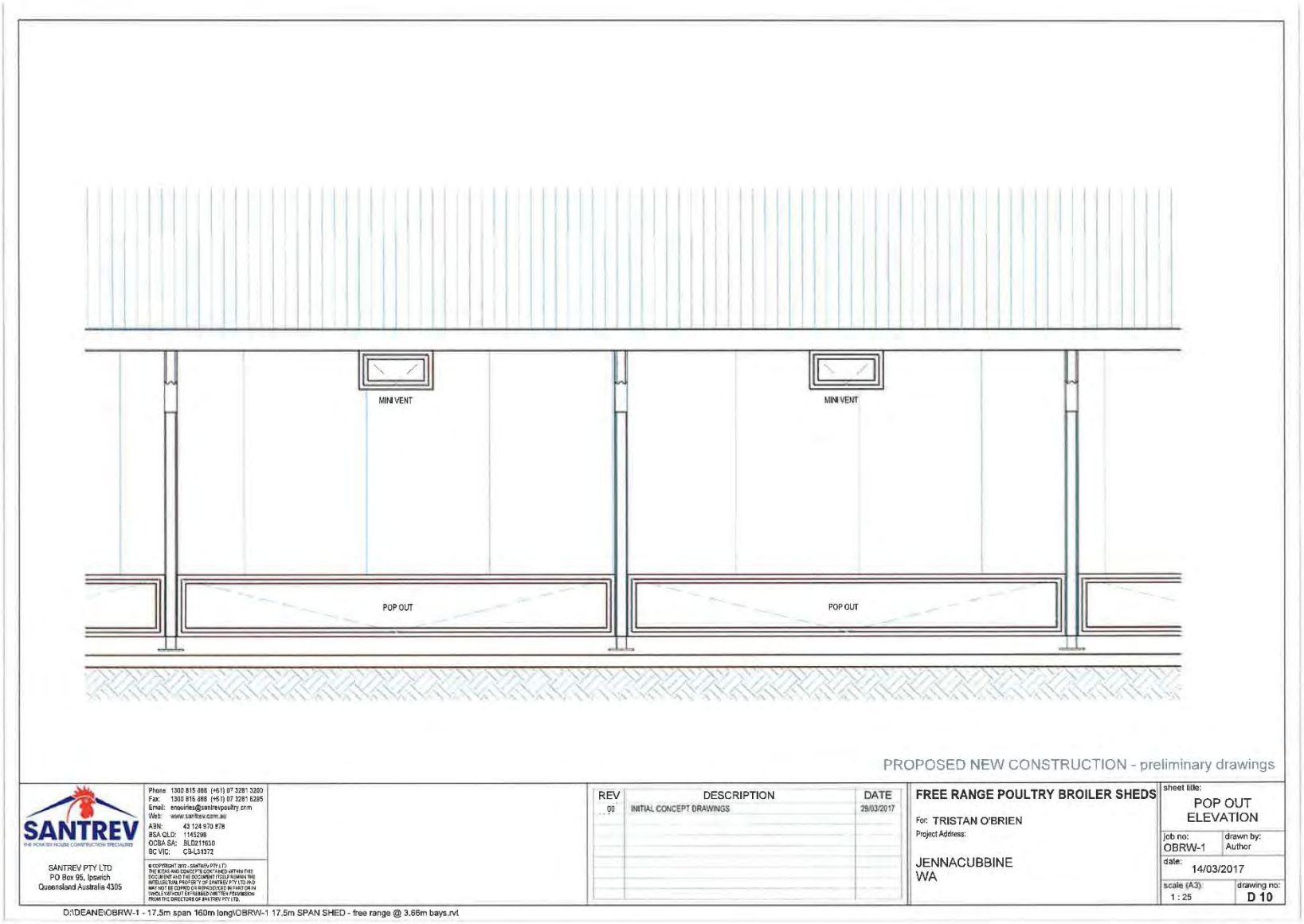
MINI VENT
MINI VENT
POP OUT
POP OUT
PROPOSED NEW CONSTRUCTION - preliminary drawings
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Queensland Australia 4305
Phone 1300 815 868 (+61) 07 3281 3260
Fax 1300 815 868 (+61) 07 3281 6295
Email: enquiries@santrevpoultry.com
Web: www.santrev.com.au
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REV
DESCRIPTION
DATE
00
INITIAL CONCEPT DRAWINGS
29/03/2017
FREE RANGE POULTRY BROILER SHEDS
For: TRISTAN O'BRIEN
Project Address:
JENNACUBBINE
WA
sheet title:
POP OUT
ELEVATION
job no:
OBRW-1
drawn by:
Author
date:
14/03/2017
scale (A3):
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drawing no:
D 10
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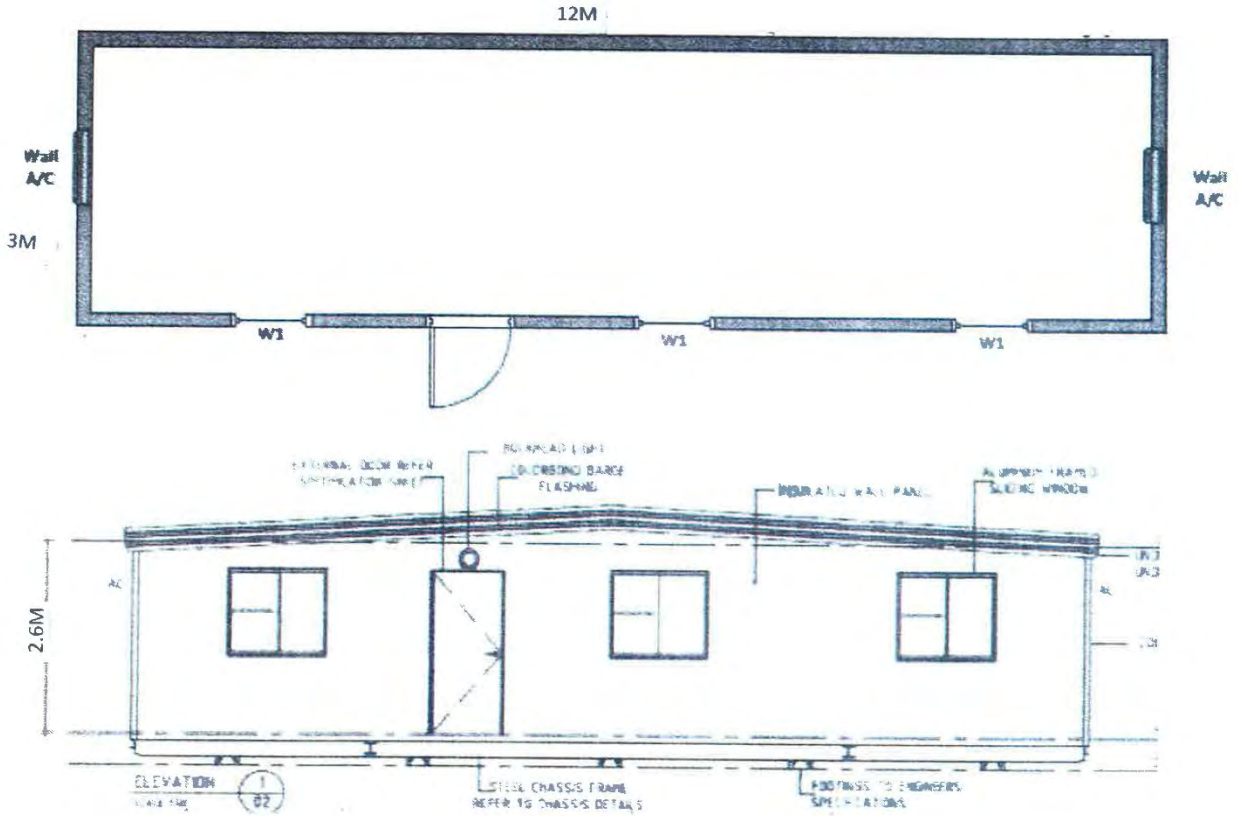
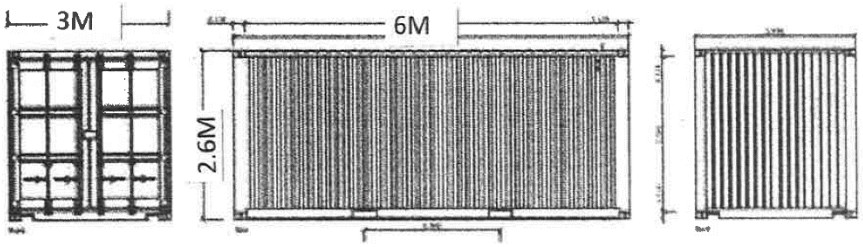
SELF CONTAINED DONGAS



SEA CONTAINERS



Attachment 3

Lot 13 Northam-Cranbrook Road Northam

Development Application – Broiler Poultry Farms

Prepared by Avon Valley Poultry Pty Ltd

1st May 2017 Version 3

TABLE OF CONTENTS

Appendices

1.0 INTRODUCTION

This application is made by Avon Valley Poultry Pty Ltd, for planning approval of a proposed free range broiler (meat) poultry farming operation on Northam - Cranbrook Road, in the Shire of Northam. The current farming property in its entirety is on 5 different titles being

- Avon Location P5
- Avon Lot 13 Diagram 94266
- Lot 91 - 94
- Lots 401-409
- Avon Lot 22

All proposed sites to be located on the one title being Avon Lot 13 Diagram 94266.

The proposal comprises 4 free range chicken broiler modules, each comprising 4 sheds (total of 16 sheds), spread across the 2,877 hectare site. In addition to the growing sheds, each module includes ancillary facilities. Each module will house a maximum of approximately 180,000 birds at any given time. The proposal includes shared internal access and water supply.

It is intended that that the modules will be constructed according to a staging plan agreed with Ingham's, the company which the chickens are being grown for.

Stage 1

- **Module 1 – construction of 3 sheds to be completed by October 2017**
- **Module 2 – construction of 3 sheds to be completed by February 2018 (total of 6 sheds)**

Stage 2

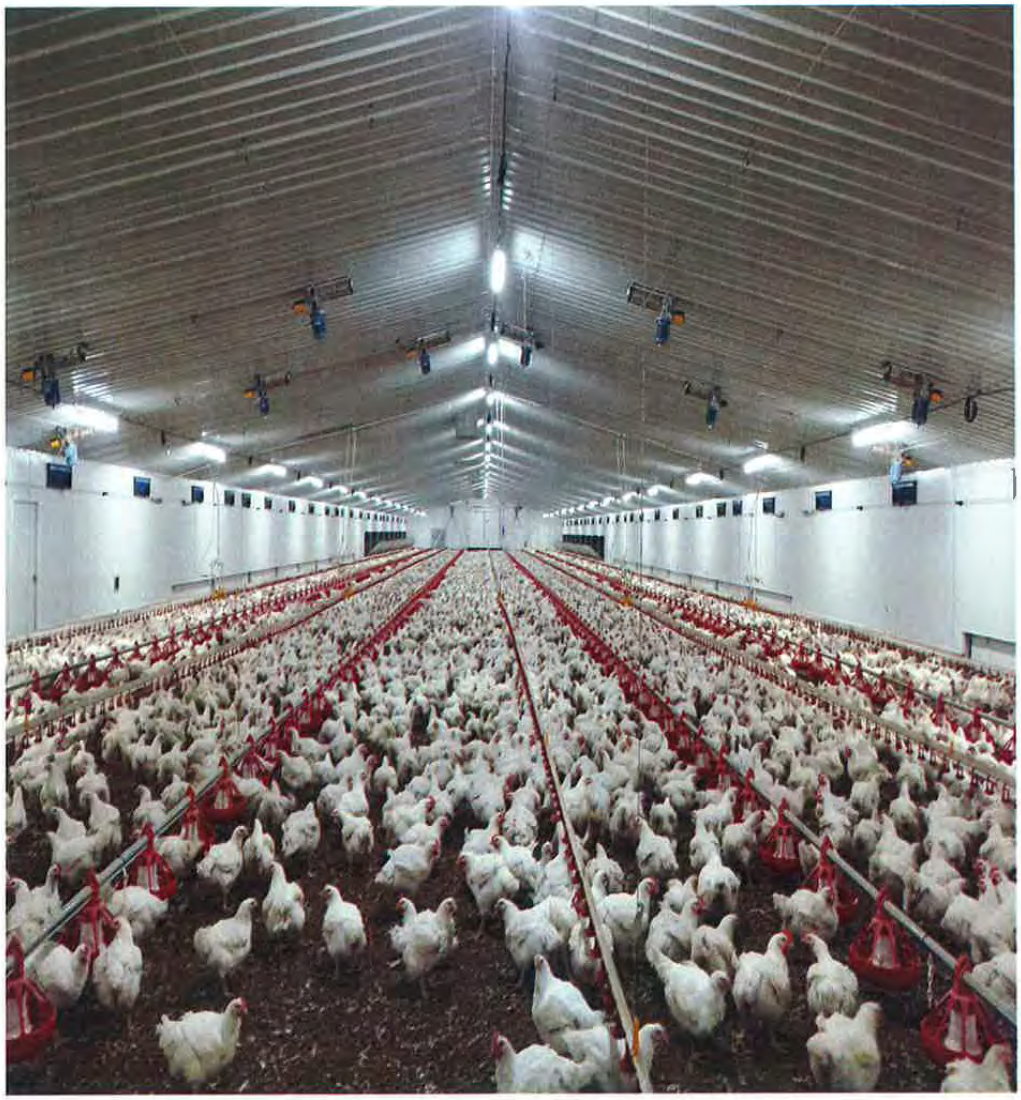
- **Module 3 – construction of 3 sheds at Ingham's discretion, 6 months' notice must be given to the grower (total of 9 sheds)**

Stage 3

- **All 4 Modules constructed to have 4 sheds – total of 16 sheds on the entire property, which will be approximately completed in the next 2-3years at Ingham's discretion**

An environmental report has been completed by Aurora Environmental, this report was based on 4 modules each comprising 6 sheds, a total of 24 sheds. While there is no need for this size operation in the future, a long term view was taken in the chance that consumer demand changed and Ingham's required additional sheds in Free Range Poultry.

The proposal represents a significant economic development opportunity for the Shire of Northam. The development will comply with all planning requirements and industry codes of practice. Aurora Environmental has prepared a report addressing all potential concerns relating to the natural environment and odour emissions, as addressed in **Appendix A**.



3

2.0 THE SITE

2.1 TITLE DETAILS

The property subject to this application is legally described as Lot 13 on Diagram; Certificate of Title Volume 2125, Folio 166. A copy of the Certificate or Title and Deposited Plan is included in **Appendix B.**

2.2 SITE DESCRIPTION

Lot 13 is located between Muluckine Road and Rogers Road. The lot has frontage to Northam-Cranbrook Road of approximately 3.5 kilometres. The current land uses are sheep grazing and cropping. The surrounding land uses comprise of

- Rural land to the North
- Rural small holdings and residential land to the east
- Muresk Agricultural College to the south west

The site has an area of 2,877 hectares and is mostly cleared.

2.3 SITE SELECTION

Site have been carefully selected to reduce disturbance to the outside community and neighbouring properties. Consideration was given to the Environmental Code of Practise for Poultry Farms in Western Australia, which states the following requirements for the location of poultry sheds to be;

- 500m from any existing or future residential zones
- 300m from any existing or future rural residential zone
- 100m from the boundary of the poultry farm

All modules comply with the Environmental Code. Module 4 is 3km away from the Northam town site, which suffices this regulation by 6 times. Module 1 is 2.2km away from Muluckine town site, which suffices regulations by over 4 times. Module 4 is the closest to an internal farm boundary being 175m which suffices the third requirement of being 100m from the boundary. All Sites are located inside the property to reduce any visual impact to the community.

The proposed location is under 2 hours from Ingham's processing plant in Osborne Park, which is a guideline set by the processor. Proposed site locations on Lot 13 can be viewed in the maps seen in **Appendix C**.

2.3.1 EARTHWORKS

To reduce amount of earthworks required for each site a cut and fill procedure will be undertaken. This procedure see's the dirt to be removed from the higher elevations of the land and moved to fill in the lower lying areas. A surveyor has been used to select sites that require minimal earthworks and has design a cut and fill procedure for each site. This can be viewed in **Appendix D.**

3.0 DESCRIPTION OF PROPOSED DEVELOPMENT

The application for planning approval comprises 4 poultry broiler modules, each comprising 4 broiler sheds, 16 sheds in total, spread across the 2,877 hectare site. The development comprises the following key components;

- 4 independently operated modules, all served by 4 sheds
- 16 free range chicken sheds, each 160.4m long x 17.30m wide (2,774.92m²), all orientated 'east-west' and having a roofed area of 108,494m²
- Each shed will have 40 internal bays with 9 cooling bays
- Each shed will have 16 to 20 axial fans, with fans positioned allowing discharge of air into the middle of the property with evaporative cooling pads on the opposite side
- Spacing between each shed is 34m
- Stocking capacity of 44,842 birds per shed (16.2 birds per m²)
- Total of 716,800 birds maximum capacity
- 8 individual water tanks (375,000L each) – 2 per module
- 24 storage silos (5m high) – 6 per module
- 4 self-contained dongas which will be approximately 12m x 3m x 2.6m (including office, lunchroom and shower) – 1 per module, connected to individual on-site effluent disposal systems
- 4 generator sheds - 1 per module, which will be approximately 3m x 2m x 2.5m in size
- 4 sea containers - 1 per module which will be approximately 6m x 3m x 2.6m to house machinery
- 4 Gas Tanks (25,000L capacity) – 1 per module

The Table below outlines the maximum amount of birds on the farm at any one given time. This is based on 44,800 birds per shed and that there will be 5.79 batches per year.

Table.1

	Module	Sheds	Birds per farm per batch	Birds per year
Stage 1	1	3	134,400	778,176
	2	3	134,400	778,176
	TOTAL	**6**	**268,800**	**1,556,352**
Stage 2	1	3	134,400	778,176
	2	3	134,400	778,176
	3	3	134,400	778,176
	TOTAL	**9**	**403,200**	**2,334,528**
Stage 3	1	4	179,200	1,037,568
	2	4	179,200	1,037,568
	3	4	179,200	1,037,568
	4	4	179,200	1,037,568
	TOTAL	**16**	**716,800**	**4,150,272**

3.1 OVERVIEW POULTRY FARMING

Broiler chicken farms typically operate using purpose built sheds to house birds. Day old chicks are provided by Ingham's and reared to an age between 42 and 56 days, when the batch is transported to the processing plant.

The young chicks are kept warm, generally up to 14 days of age, by gas heaters. At approximately 21 days of age the chickens are allowed to access the free range area. Water and feed is provided by automatic gravitational/mechanical means to appropriate feeder pans or water points. The floors of the sheds which are concrete are covered in deep litter of 10-15cm in depth of straw. The sheds are ventilated by large fans encouraging air flow and evaporative cooling systems able to be used in hot conditions. The shed temperature, humidity and air quality are all electronically controlled.

At the end of a growing period birds are caught be hand by the processors contractors in the sheds, placed in crates, to be transported to the processor. The catching and transportation process takes place from midnight to dawn, when the birds are quieter and causes less stress before processing. Sheds are then cleaned by removing the deep litter. Sheds are washed and sprayed with disinfectant to reduce the risk of disease in preparation for the next batch. There is usually a 1 week to 2 week period between batches when the sheds are empty.

3.2 BROILER SHEDS

The application proposes 4 poultry modules, comprised of 4 broiler free range sheds. Each broiler free range shed is 160m x 17.3m and can accommodate approximately 44,800 chickens per shed, totalling approximately 179,200 chickens per site. Each shed is separated by a distance of 34 meters, being the range area for the birds. Detailed photographs can be seen in **Appendix E.**

Sheds will be constructed from fabricated hot-dipped galvanised steel, with concrete floors to Ingham's specification. All sheds have clean skin ceilings. Sheds will also be built in accordance to RSPCA guidelines to ensure good welfare and provide sufficient space for the birds to move around.

All sheds are mechanically ventilated, both tunnel and side ventilation. Tunnel ventilation is achieved by using 10 x 1.4m diameter exhaust fans. Sheds are constructed to be fully integrated with cooling, heating, feeding and watering systems. Detailed drawings can be seen in **Appendix F.**

3.3 BUILDINGS

Other structures will include

- 4 self-contained dongas – 1 per module, which will be approximately 12m x 3m x 2.6m (including office, lunchroom and shower), connected to individual on-site effluent disposal systems
- 4 generator sheds - 1 per module, which will be approximately 3m x 2m x 2.5m in size
- 4 sea containers - 1 per module which will be approximately 6m x 3m x 2.6m to house machinery

- 4 Gas Tanks (25,000L capacity) – 1 per module
- 24 storage silos (5m high) – 6 per module

3.3.1 SELF CONTAINED DONGAS

There will be 4 self-contained dongas – 1 per module, which will be used for an office, lunchroom and shower/toilet facilities. These will be approximately 12m x 3m x 2.6m in size. Self-contained dongas will be using the same water tanks on site that the broiler sheds draw from. Waste generated by employees will be picked up by Avon Waste, there is already a collection point on the Northam-Cranbrook road for existing staff. Each self-contained donga will have a separate septic tank attached. Floor Plans and elevations can be seen in **Appendix G**.

3.3.2 SEA CONTAINERS

There will be 4 sea containers – 1 per module which will house machinery used on each site. These will be approximately 6m x 3m x 2.6m in size. Floor Plans and Elevations can be seen in **Appendix H.**

3.4 VEHICLE ACCESS AND PARKING

Currently the farm has an internal road system which is 15m wide and is accessible in all weather conditions. The proposed free range poultry module will connect onto this internal laneway system which has an access point on the Northam-Cranbrook Road. The entry off Northam-Cranbrook road is highly visible, being an open stretch of road, as can be seen through the below photo. Additional photos can be found in **Appendix I**.

Traffic generated by the proposed development arise from

- Staff Vehicles
- Feed Delivery Trucks
- Bird Delivery Trucks
- Bird Removal Trucks
- Waste Removal Trucks
- Dead Bird Removal

All of these movements will be during daylight hours, except bird removal trucks which will enter at night and leave in the morning around 8am. Traffic created based on 16 sheds (4 sheds per module) and all stages of the proposal completed.

Staff vehicles	2 staff per module, plus 1 manager for the whole operation, being 9 staff in total using light vehicles
Feed Delivery Trucks	A bird consumes around 4.4kg over 56 days,
	44,000 birds x 4.4kg x 4 sheds = 774t of feed
	774t x 4 sites = 3,096t of feed per batch
	Average road train carries 48t

8

	3,096/48t = 65 road trains per batch
	A batch is 63 days
Bird Delivery Trucks	Single semi-trailer per shed or road train for 2 sheds (5.79 batches per year, or every 63 days)
	4 sheds x 2 trucks x 4 sites = 32 per batch
	32 trucks / 63 days = 0.5
Bird Removal Trucks	6,000 birds per trailer or 12,000 for road train
	Shed 44,000 birds / 12,000 = 3.6 trucks per shed
	3.6 trucks x 4 sheds x 4 sites = 57.6 per batch
	57.6 / 63 = 0.9
Waste Removal Trucks	1 road train is required per shed
	1 x 4 shed x 4 sites = 16 trucks per batch
	16 / 63 = 0.25
Dead Bird removal	Light 8t truck is used to remove birds, this will service all sites
	Pick up will vary depending on batch cycle
	75% of mortalities are in first 10 days (birds are small around 45 grams)
	Removal will occur approximately 3 times a week

Therefore the traffic entering and exiting Northam- Cranbrook Road will be an average of 3.05 trucks per day. This can be seen summarised in the Table below.

	Average Number of Movements per Day	Average Number of Movements per Month	Average Number of Movements Per Quarter
Staff Vehicles	9	270	810
Feed Delivery Trucks	1	30	90
Bird Delivery Trucks	0.5	15	45
Bird Removal Trucks	0.9	27	81
Waste Removal Trucks	0.25	8	24
Dead Bird removal	0.4	12	36
Total Trucks	3.05	92	276

All staff will use light vehicles and access via Northam-Cranbrook road, and parking will be adjacent to self-contained dongas on each module. Truck parking will be short term, however there is sufficient room within our internal laneway system for trucks to manoeuvre and park. Visitors will be minimal due to biosecurity.

3.5 INFRASTRUCTURE

3.5.1 WATER

A hydrologist was consulted to locate, construct and test an appropriate water source for this project. An aquifer was located within the property with the drawdown being confined to this local area and wont impact or affect any other water supplies in neighbouring properties or localities.

The water which has been sourced by a bore has the capacity to produce 6L/second. Each shed will require a supply capable of providing approximately 6ML/year. The proposed development will generate the following demands for water:

- Drinking water for the birds
- Cooling of ventilation systems
- Irrigation of pastures/vegetation
- Supply of water to amenity buildings
- Cleaning out of sheds

2 individual water tanks are proposed per module, which will hold water drawn from the bore via the pump and pipeline. These tanks are designed to provide sufficient capacity to allow the modules to run.

4.0 ENVIRONMENTAL ASSESSSMENT AND MANAGEMENT PLAN

4.1 ODOUR – LITTER MANAGEMENT

The proposed modules were selected mainly due to the great distance between them and their nearest dwellings. This practice was implemented to decrease any nuisance of noise and odour to neighbours. Air flow direction from exhaust fans are position so that all movement is directed into the middle of the property. Therefore channelling any odour away from neighbouring properties. This can be seen in **APPENDIX C.** In accordance to the Free Range Broiler Growing Manual written by Ingham's, in cold or rainy weather birds should be confined to the shed for warmth, this also applies in windy conditions. Both these management practices will also reduce external spread of odours.

The free range area is to be grassed to allow the birds to freely roam between the sheds and this area. In accordance to the Free Range Broiler Growing Manual the grassed area is to be maintained regularly via cutting and raking of debris. Good husbandry reduces the risk of disease and improves the performance of the birds.

The main odour associated with a broiler farm is the litter. Sheds will be cleaned out firstly using bobcats with litter being placed onto trucks immediately and not stored on site. This is mainly done for biosecurity and also to reduce emissions. Tarpaulins will be fitted to truck trailers and secured before the truck leaves site, to contain any odours. Sheds will then washed down, with waste water from inside the sheds due to clean out being contained internally and not exiting the shed. In accordance to the Free Range Broiler Growing Manual litter is required to be maintained in a dry condition and therefore will be turned on a weekly basis also reducing any odour issues.

4.2 DRAINAGE MANAGEMENT

Sheds are designed with a pitched roof and no gutters, therefore water from rainfall is designed to drain onto the range area. The Free Range area which is twice the size of the shed is where most of the drainage occurs. Therefore promoting the grassed areas for the birds to range and in turn reducing the dust and odours which get absorbed through the vegetation. Swale drains are also added in the event of excess rain to prevent erosion.

4.3 BIRD DEATHS

On a new style shed design a mortality rate of between 4% is expected. 75% of this 4% occurs in the first 10 days with the remaining 25% occurring throughout the batch. Therefore working on a shed having 44,800 birds there is an approximate mortality of 1,792 birds. Of these 1,344 occur in the first 10 days where the bird weighs an average of 45grams.

In accordance to the Free Range Broiler Growing Manual written by Ingham's dead birds are to be removed from the shed to reduce the risk of disease and disposed of on a daily basis. Dead birds will be stored in a sealed container called a BiobiN. A BiobiN is an onsite capture and containment system used for organic material processing in an odour-free easy accessible vessel. It starts the composting process on site. It will then be collected by an outside contractor. Collection will occur as required and is current practise on broiler farms throughout the industry. The dead birds will be taken down to Cwise in Mandurah where they will be composted for soil mixes.

The Environmental Assessment and Management Plan in **Appendix A**, also explores the following issues

- Noise and Odour
- Bushfire Management
- Environmental Assessment
- Visual Impact
- Social Impact

Attachment 4

2 Bulwer Street
PERTH WA 6000
T: (+61) 8 9227 2600
F (+61) 8 9227 2699
www.auroraenvironmental.com.au

Avon Valley Farm
Free Range Broiler Poultry Farm
Shire of Northam, WA
Environmental Assessment and Management Plan

Prepared For:	Avon Valley Farming RMB 820 JENNACUBBINE WA 6401
Report Number:	AA2017/004
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Aurora Environmental has implemented a comprehensive range of quality control measures on all aspects of the company's operation.

An internal quality review process has been applied to each project task undertaken by us. Each document is carefully reviewed and signed off by senior members of the consultancy team prior to issue to the client.

Document No: AVF-2017-001_ENV_001_mp_V3

Report No: AA2017/004

Author:	Melanie Price Associate Environmental Scientist	Signature	1 May 2017 Date
Reviewed by:	Noel Davies Manager - Waste & Special Projects	Signature	1 May 2017 Date

DISTRIBUTION

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pdf	AVF-2017-001_ENV_001_mp_V3	V3	1 May 2017	Avon Valley Farming	MP

TABLE OF CONTENTS

ATTACHMENTS

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AHD	Australian Height Datum
APL	Australian Pork Limited
BGL	Below ground level
°C	degrees Celsius
DER	Department of Environment Regulation
DoW	Department of Water
ESA	Environmentally Sensitive Area
kL	kilolitre
km	kilometre
m	metres
meq	milli equivalent
mg/L	milligrams per litre
mm	millimetre
NEGP	National Environmental Guidelines for Piggeries
NMP	Nutrient Management Plan
PBI	Phosphorus Buffering Index
SPU	Standard pig unit
TDS	Total dissolved solids
WQPN	Water Quality Protection Note

GLOSSARY

Free range: Animals that are not closely confined and have some access to the outdoors (RSPCA, 2013a).

Sensitive land use: Land uses sensitive to emissions include residential developments, hospitals, hotels, motels, hostels, caravan parks, schools, nursing homes, child care facilities, shopping centres, playgrounds, and some public buildings. Some commercial, institutional and industrial land uses which require high levels of amenity or are sensitive to particular emissions may also be considered "sensitive land uses". Examples include some retail outlets, offices and training centres, and some types of storage and manufacturing facilities (EPA, 2005). Single residential dwellings are not sensitive land uses in the context of EPA Guidance Statement No. 3 (EPA, 2005).

Separation distances: Distances provided between the operation and sensitive receptors (e.g. residences, recreational areas, towns etc.) are an important secondary measure for reducing the risk of amenity impacts. Separation distances are measured as the shortest distance measured from the operation to the nearest part of a building associated with the sensitive land use.

EXECUTIVE SUMMARY

Aurora Environmental has been engaged to undertake an environmental assessment of Avon Valley Farm, Northam, where Avon Valley Farm Pty Ltd proposes to develop a free-range poultry farm and grow chickens for the meat bird (broiler) market. Broiler poultry are bred as meat birds and free range indicates that the birds have access to open areas during the day (and for safety are confined during the night).

This environmental assessment includes a review of the environmental setting of the site. A review of planning elements is also provided, including zoning, current policies, recommended buffer distances to sensitive receptors, and management strategies to be implemented at the site. Management methodology is also outlined.

The 2,874 ha property (Figures 1 and 2) currently operates as a grazing and cropping agricultural enterprise and the landowners propose to establish the free range poultry farm on Avon Lot 13 Northam York Road. Lot 13 has been largely cleared, and no additional clearing of native vegetation is proposed.

The proponent has requested that this assessment consider the ultimate construction of four modules of six poultry sheds (24 sheds in total). However, the application submitted for development approval is for four modules of four sheds (16 sheds in total). Should the proponent ultimately wish to expand to 24 sheds, an additional development approval will be sought.

Each module will be separated by at least one kilometre and serviced with access tracks, water and feed tanks, a work shop and areas to store straw (litter). The sheds, each comprising 160m by 17.3m will be constructed of steel, with doors open for at least 5 hours per day (once the birds are old enough to forage outdoors). The floors of the sheds will be concrete and spread with straw bedding. Each shed will contain 44,800 birds for each batch, with 5.79 batches per year. This will result in an output of approximately 6.11 million birds per year for the 24 shed model and 4.150 million birds per year for the 16 shed model. Approximately 1.075 million chickens (of varying ages) will be on the property at any one time for the 24 shed model (716,100 for the 16 shed model).

The process for raising the poultry will be in line with *Meat Chickens, RSPCA Approved Farming Scheme Standards* (RSPCA, 2013). The grow out cycle will be 63 days comprising arrival of day old chicks which will be reared for 21 days prior to being allowed to free range. After approximately 35 more days, the poultry will be large enough to remove for processing. At the end of each cycle, the litter (straw and manure) will be removed from the property over a seven day period, prior to cleaning and spreading of new bedding.

Overall, the environmental setting of the site is considered compatible with the proposed poultry farm based on recommended separation distances set out in *Environmental Code of Practice for Poultry Farms in Western Australia* (WABGA *et al.*, 2004).

The Avon and Mortlock Rivers, located to the west and east of the subject land, respectively are considered the primary environmental receptors. The proposed poultry farm has appropriate separation from these waterways and has adequate vertical separation from the groundwater table. Separation distances to adjacent residences exceed 1000m. The site zoning of 'Rural' is compatible with the proposed poultry farm use.

Based on available information, it is considered that the proposed development can be operated without impacting the health or amenity of surrounding property owners and the wider public.

Various landowner commitments are proposed in order to ensure the site is managed in a manner that minimises opportunity for environmental impacts. Contingencies are proposed, to allow for appropriate responses, should issues be identified. This will allow for review and implementation of improvement options.

1 INTRODUCTION

1.1 PROPOSAL

Avon Valley Farm Pty Ltd is seeking planning scheme consent from the Shire of Northam to establish a free range meat bird (broiler) poultry operation at Avon Valley Farm. Parcels of land included in the land holding are shown in Table 1 and Figures 1 and 2. The 2,874 ha property comprises seven land parcels and currently operates as a grazing and cropping agricultural enterprise.

The landowners propose to establish the free range poultry farm on Avon Lot 13 (1,832.7ha). The lot proposed to be used for the operation is zoned 'Rural' under the Shire of Northam Local Planning Scheme No. 6. The lot has been largely cleared of native vegetation. No additional clearing of native vegetation is proposed.

TABLE 1: LAND PARCELS

Lot/ Location	Parcel Identifier	Area (ha)
Lot 91	P23146	90.234
Lot 92	P23146	50.174
Lot 93	P23146	50.150
Lot 94	P23146	154.17
Lot 13	D94266	1,832.7
Lot 150	D9351	2.8258
Lot 22	P77700	661.70

Broiler poultry are bred as meat birds and free range indicates that the birds have access to open areas during the day (and to prevent predation are confined during the night). Free range areas are fenced (compound fencing) to prevent predation. Day old chicks are transported to the sheds, enclosed and kept warm for 21 days (brooding stage). The young poultry are then allowed to free range during the day until they reach a minimum weight. At this stage, approximately 56 days into the cycle, collection of the birds occurs. Cleaning of the shed then takes up to seven days.

The poultry farm infrastructure will comprise four modules (each containing six sheds) on Avon Lot 13 Northam York Road (1,832.7ha) (Figure 3). Each module will be a minimum of 1,200m apart. Each of the 24 sheds (160m by 17.3m) will be constructed from steel with doors which will be open for at least 5 hours per day (apart from the brooder stage). The floors of the sheds will be concrete and spread with straw bedding. Sheds will be aligned along the contour or on as flat an alignment as possible and oriented to maximise cross ventilation.

Each of the 24 sheds will contain 44,800 birds per batch with 5.79 batches per year. This equates to production of 6,114,240 birds per year (or 1,075,200 at any one time). Each module will contain water and feed tanks, a work shop, a generator for backup power and an area to store straw (litter). Site infrastructure will include access roads.

It is proposed to remove the spent litter, comprising manure and bedding, from the property for beneficial reuse. This will be done using a bobcat type front end loader, with litter placed in a covered

side tipper truck for removal from the site. Litter is not proposed to be stockpiled or composted on site. Dead birds will be removed from the property.

1.2 LEGISLATION, GUIDELINES AND POLICIES

Establishment and operation of poultry farms requires approval from the Shire of Northam as indicated by Local Planning Scheme No. 6 where the land use falls under the category of 'Animal Husbandry – Intensive' which is a use that requires consideration and approval by the Shire Council.

Operation and management of issues related to poultry farms is guided by a number of policies and guidelines, listed below and discussed in applicable sections of the document.

Policies and planning documents which are relevant to the proposed development of the site as a free-range poultry farm are identified as follows:

- *State Planning Policy 2.5 Rural Planning* (WAPC, 2016).
- *Draft Guidance Statement – Separation Distances* (DER, 2015).
- *Environmental Code of Practice for Poultry Farms in Western Australia* (WABGA *et al.*, 2004).
- *Health Act 1911.*
- *National Water Biosecurity Manual, Poultry Production* (Department of Agriculture, Fisheries and Forestry, 2009a).

Bird management will be undertaken in accordance with guidance provided by the Royal Society for the Prevention of Cruelty to Animals (RSPCA) in *Meat Chickens, RSPCA Approved Farming Scheme Standards* (RSPCA, 2013).

2 EXISTING ENVIRONMENT

2.1 CURRENT LAND USE

Current land uses on the subject land include:

- A residence;
- Sheep grazing; and
- Cropping.

Most of the farm is zoned 'Rural' under the Shire of Northam Local Planning Scheme No. 6 (Appendix A). Lot 22 (661.70 ha) contains an area zoned 'Research Station' which is also used for sheep grazing and cropping. Photographs of the module locations are shown in Appendix C.

Surrounding land uses comprise:

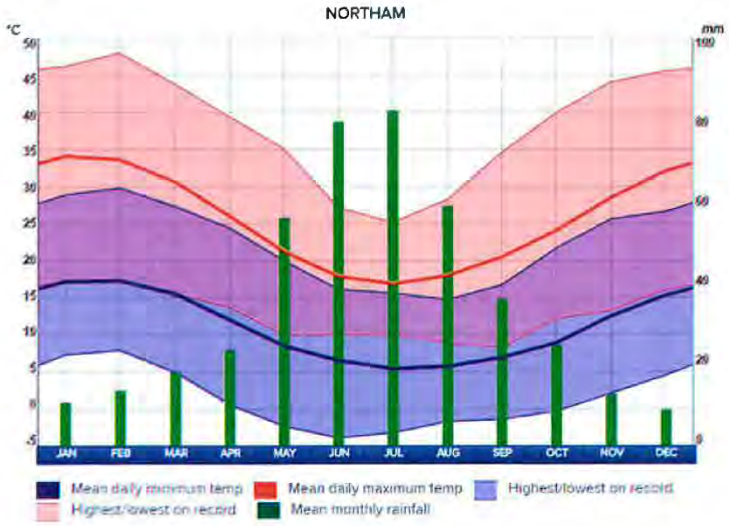
- Northam Townsite to the north;
- Muluckine East Townsite, including rural small holdings and residential land to the east;
- Muresk Agricultural College to the south west; and
- Other rural land uses (mostly grazing and cropping).

The Shire of Northam Local Planning Strategy (Shire of Northam, 2013) indicates that an area south of the current town site is designated for 'Future Residential' use (Appendix B). The southern edge of this area is 2.7km from the nearest proposed module (Module 4)

2.2 CLIMATE

The Northam area is described as having a Mediterranean climate, characterised by hot dry summers and mild wet winters. Climate data has been sourced from the Bureau of Meteorology averages for Northam Weather Station (Plate A; Site number: 10111) for the period 1877 to 2017 (BOM, 2017).

PLATE A: CLIMATE



Source: Weatherzone, 2017: http://www.weatherzone.com.au/climate/station.jsp?lt=site&lc=10111

Rainfall in the Northam area is seasonal and is generally confined to the winter months (May to August). Mean monthly rainfall is highest in July at 82.2 mm. The lowest mean monthly rainfall is 8.9 mm in December. The average annual rainfall is 415.3 mm, with an average of 76.8 rain days per year.

The mean annual maximum and minimum temperatures for Northam are 25.3°C and 10.9°C, respectively. The highest temperatures are usually experienced in January, when the mean monthly maximum temperature is 34.2°C and the mean monthly minimum temperature is 5.4°C in July.

2.3 TOPOGRAPHY

A review of the WA Atlas (Landgate, 2016) topography contours indicates the subject land has plateau areas with relatively gently slopes with high points around 265 mAHD (Figure 3). A sub catchment divide runs from north east to south west, with land sloping down to the east (157 mAHD) and west (204 mAHD). The poultry operations will be located on the higher elevations of the subject land, between 190 m and 265 m AHD. The lowest areas of the subject land are associated with ephemeral drainage lines which drain to the eastern and western boundaries.

2.4 LANDSCAPE AND GEOLOGY

The subject land is located in the Rejuvenated Drainage Zone (with the Darling Range Drainage Zone to the west and the Ancient Drainage Zone to the east). The Rejuvenated Drainage Zone has an active drainage system with north-south flowing branches of the Avon River that meet at Northam and break through the Darling Range to join the Swan River. The landscape is relatively dissected, with variable soils formed from dissected laterite profiles and underlying crystalline rock.

Geologically the area is associated with the Yilgarn Craton which is characterised by features such as faults, dykes, major rock formations and waterways trend NW/SE, E/W or NE/SW. The north-west alignment of major rock bands of the Yilgarn Craton reflects its formation over many hundreds of million years as rafts of land on tectonic plates collided to form bands of gneiss that were intruded by granites. Stresses associated with these events caused cracking and intrusion of the dolerite dykes that occur throughout the craton.

The Northam district contains few sedimentary rocks compared with the Perth basin. Igneous rocks include granite, dolerite, gabbro, quartz and metamorphic rocks such as gneiss, migmatite and banded ironstone that are the parent materials for wind and waterborne deposits, laterites and a range of soils. Outcrops are relatively common in dissected (rejuvenated) areas.

2.5 SOIL TYPES AND LAND CAPABILITY

Department of Agriculture and Food (DAFWA, 2012) soil mapping indicates the subject land contains soil types as shown in Table 2 and Figure 4. The poultry farm is proposed to be located in soil type 256JcYO – Jelcobine York Subsystem.

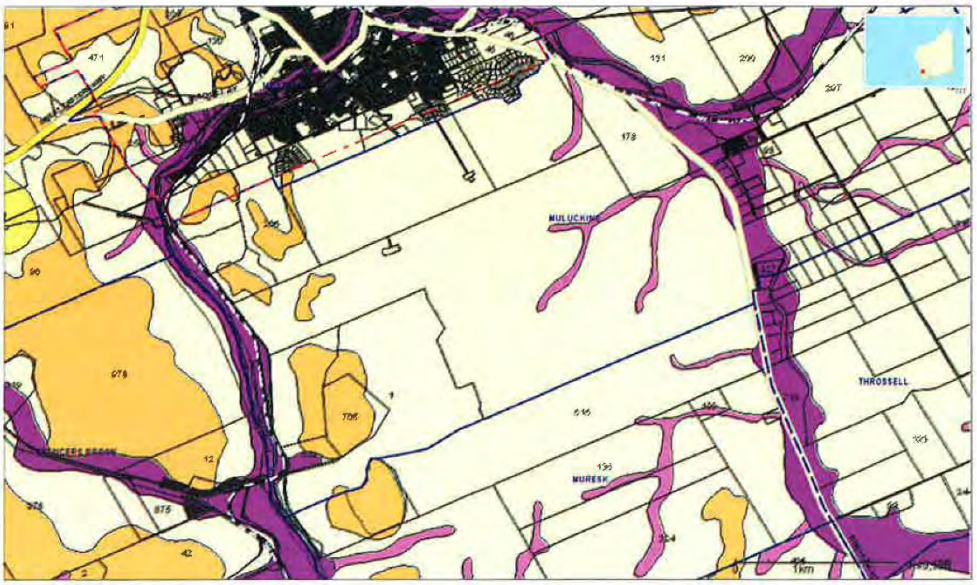
TABLE 2: SOIL TYPES

MAP UNIT	MU NAME	MU SUMMARY DESCRIPTION
256JcYO	Jelcobine York Subsystem	Areas of soils derived from freshly exposed rock. This unit is typified by the red soils of the Avon Valley but also includes areas of similar, but often greyer and lighter textured soils to the east of the valley.
256JcR2	Steep Rocky Hills 2 Subsystem (Jc)	Areas of steep, rocky hills.
256JcHM	Hamersley Subsystem (Jc)	Narrow, minor drainage lines that occur predominantly within the York unit and lead down to major drainage systems such as the Avon and Dale rivers.

Source: Department of Agriculture and Food, Soil-landscape Mapping – Best Available (DAFWA-033), 2017 http://www.nationalmap.gov.au/

Land capability mapping (DAFWA, 2013: Landgate, 2017) indicates that Lot 13 mostly comprises soils which are not considered to be at risk of phosphorus export. Drainage lines within Lot 13 have a moderate risk of phosphorus export.

PLATE 2: PHOSPHORUS EXPORT RISK



Source: Landgate, 2017 (Soil landscape land quality – Phosphorus Export Risk (DAFWA-010) (13-06-2013). Purple shading indicates high phosphorus export risk. Tan and yellow shading indicates moderate export risk. Buff colour indicates low export risk.

2.6 SOIL SAMPLING

Soil sampling was undertaken on Lot 13 in 2014 with results shown in Table 3. Soil sampling locations are shown in Figure 4.

TABLE 3: SOIL SAMPLING RESULTS

Y-P-S	Lat	Lon	Colwell-P	Colwell-K	OC	pH top	Texture	NO3-N	NH4-N	KCl40-S	PBI
14: Howlett's-1	-31.698749	116.7284	32	196	1	5.3	1.5	3	4	9	30
14: Howlett's-10	-31.70185686	116.7211	37	154	0.95	4.4	1.5	2	5	16	28
14: Howlett's-11	-31.70504381	116.7215	44	119	0.62	4.6	1.5	2	8	12	34
14: Howlett's-12	-31.700654	116.7268	45	480	1.49	5.4	2.5	4	5	14	41.8
14: Howlett's-13	-31.70355928	116.7185	39	112	0.86	4.9	2	6	5	12.5	23.2
14: Howlett's-2	-31.70180848	116.7359	54	63	0.82	4.9	2	4	6	13	35
14: Howlett's-3	-31.70421193	116.7305	22	197	0.99	4.8	2	2	4	9	27
14: Howlett's-4	-31.7054554	116.7269	33	294	1.26	4.7	1.5	6	7	11	30
14: Howlett's-5	-31.70619944	116.7291	55	176	1.25	4.8	1.5	7	9	15	21
14: Howlett's-6	-31.70305548	116.7251	33	162	1.59	5.1	1.5	8	7	15	21
14: Howlett's-7	-31.70218459	116.7288	44	147	1.02	5.3	1.5	5	4	10	24
14: Howlett's-8	-31.70024122	116.7244	46	68	1.01	4.9	1.5	4	4	6	24
14: Howlett's-9	-31.70430063	116.7169	41	274	1.07	5.3	1.5	8	4	11	22
14: Pipe in Creek-1	-31.68570728	116.7102	51	125	1.83	7	2.5	7	4	10.5	69.7
14: Pipe in Creek-2	-31.68294728	116.7166	39	217	1.07	5.9	2	21	2	8.7	21.3
14: Airstrip-1	-31.69530238	116.7093	37	371	0.91	5.2	2.5	12	5	7.4	26
14: Airstrip-2	-31.69961096	116.7097	42	275	0.93	4.9	2	15	10	11.5	26.6
14: Trigg-1	-31.68553873	116.6965	63	176	2.09	5	2	22	6	35	37.2
14: Trigg-2	-31.6911131	116.6877	29	195	0.93	5.4	1.5	29	5	8.3	24.3

Interpretation of soil sampling results are included in Table 4. As a farm actively run for cropping and grazing, soil parameters are within expected ranges. Fertilisers are applied annually, depending on crop types and soil testing results.

TABLE 4: SOIL TESTING RESULTS - INTERPRETATION

PARAMETER	RESULT RANGE	COMMENT
Texture	Soils across the site comprise 1.5: sand to sandy loam to 2.5: loam to clay loam	1: Sand, 1.5: sand to sandy loam, 2: sandy loam to loam, 2.5: loam to clay loam, 3: clay loam to clay, 3.5: clay to heavy clay.
Gravel %		Gravel present in some areas
Ammonium Nitrogen (mg/Kg)	2 - 10	Less than 5 is considered low. Relatively low to moderate levels present, indicates that some areas need nitrogen application for agricultural performance. #
Nitrate Nitrogen (mg/Kg)	2 - 29	Less than 5 is considered low. Nitrate-nitrogen concentrations less than 20mg/kg indicate relatively low - moderate levels, usually linked with fertiliser history and previous crops grown (e.g. legumes). #
Phosphorus Colwell (mg/Kg)	22 - 63	The soils at the site have moderate levels of P, indicating a consistent fertiliser history.*
Potassium Colwell (mg/Kg)	<63 - 480	An adequate range for agriculture is 120 – 250. Levels range from low to relatively high across the site for K.#
Organic Carbon %	0.62 – 2.09	In sand, levels less than 0.5 indicate low C, 0.5 – 1.0 indicate moderate C and >1 indicate high. Soil samples indicate moderate and high organic content across the site.
pH Level	4.4 – 5.9	pH in a range of 5 – 8 is considered acceptable. Soils in the district are known to be slightly acidic so 4.4 is in a range acceptable for the area.

Source: * APL (2013) *Environmental Guidelines for Rotational Outdoor Piggeries* Section 14.2.2 and # Government of South Australia, 2016.

2.6.1 Phosphorus Buffering Indices

Phosphorus Buffering Index (PBI) provides a measure of the phosphorus holding capacity of soils. Phosphorus retention is important as it provides an indication of whether nutrients discharged will be bound to soils and held in the soil profile or leached into the environment. High PBI scores indicate a high nutrient retention capability (levels above 100). PBI results for the subject land range from 21 to 69.7 which corresponds to Very, Very Low to Very Low (Table 5). In a cropping environment, lower PBIs indicate that phosphorus is more available and that less needs to be added for crop health.

TABLE 5: PHOSPHORUS BUFFERING CATEGORIES

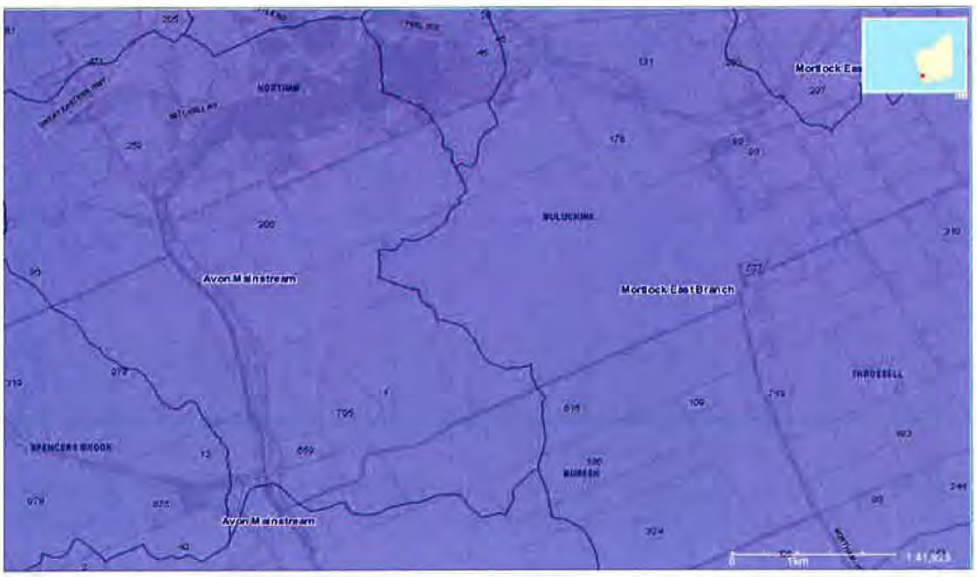
INDEX	PBI CATEGORY
< 5	Exceedingly low
≤5-10	Exceptionally low
≤10-15	Extremely low
≤15-35	Very very low
≤35-70	Very low
≤70-140	Low
≤140-280	Moderate
≤280-840	High

Source: DAFWA, 2015.

2.7 CATCHMENTS

The southern and eastern portion of the subject land is in the Mortlock East Branch sub catchment. Water from this area flows into the Mortlock River East and discharges into the Avon River just west of Northam (Landgate, 2017). The north and western portion of the subject land is in the Avon Mainstream sub catchment (Plate 3) which flows into the Avon River. The Avon River ultimately discharges into the Swan River.

PLATE 3: SUB CATCHMENTS



Source: Landgate, 2017

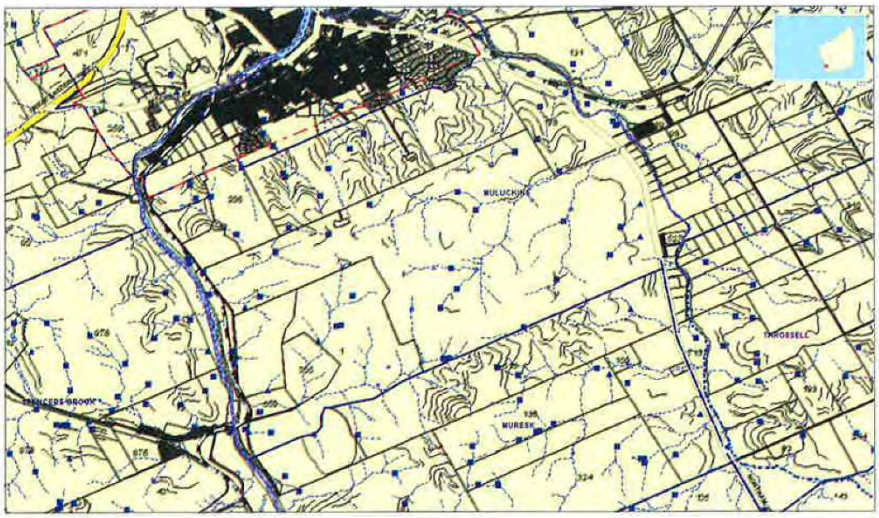
2.8 WATERCOURSES, GROUNDWATER AND WETLANDS

There are no perennial watercourses on the property. There are poorly defined ephemeral water courses within Lot 13 (Plate 4). As discussed in Section 3.2, water course separations have been

calculated based on likelihood of risk in relation to the form of the water course and its position in the landscape.

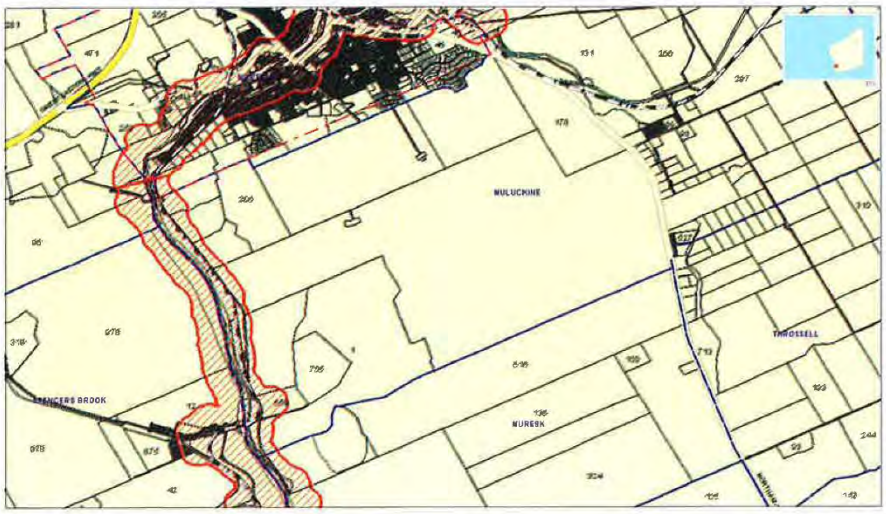
The Avon River is located to the west of the property (and 3km from the western boundary of Lot 13). The Avon River has an associated 1 in 100 annual recurrence interval (ARI) or 1% annual exceedance probability (AEP) Floodplain Development Control area (Landgate, 2017; DoW-032, 2016; Plate 1). The proposed poultry farm infrastructure will be in an elevated area, well outside the floodplain development control area. The Mortlock River lies 200m east of the eastern boundary of the subject land.

PLATE 4: DRAINAGE LINES AND WATER FEATURES



Source: Landgate, 2017

PLATE 5: FLOODPLAIN DEVELOPMENT CONTROL AREA



Source: Landgate, 2017

Soil landscape mapping by DAFWA (Landgate, 2017; 2013) indicates that areas associated with the Mortlock East River and Avon River can have a high risk of flooding, with the poorly defined drainage lines on the eastern portion of the subject land having a medium risk of flooding (Plate 5; Flood prone indicated by purple and pink shading). Poultry farm infrastructure will not be placed in flood prone areas.

Significant, low salinity groundwater resources within the Shire are rare (Shire of Northam, 2013). Groundwater quantity and quality decreases from west to east across the Shire in accordance with annual rainfall. On the Darling Scarp in the west, potable groundwater in small quantities can reliably be found in shallow bores and wells sunk through laterite into the granite below. For the remainder of the Shire, groundwater quality is mainly suitable only for stock watering purposes although in smaller catchments, where geological conditions are suitable, small quantities of potable groundwater can be found, however, this is of limited significance.

An investigation to quantify the volume and quality of possible groundwater sources in relation to the subject land is currently being undertaken (Aquageo, 2017). Preliminary results (Aquageo, pers. Comm.) indicate that sufficient resource will be available for the poultry farm. Groundwater at the investigation site was 15m below ground level (approximately 150m AHD; Figure 3), with a minimum separation to groundwater for the four modules of 30m.

The subject land does not contain any wetlands or groundwater dependent ecosystems.

PLATE 6: FLOOD PRONE AREAS

Source: Landgate, 2017 (Soil landscape land quality - Flood Risk (DAFWA-009) (13-06-2013). Purple shading indicates high flooding risk.

2.9 VEGETATION

The subject land is located in the Avon Wheatbelt P2 biogeographical region, one of 89 bioregions recognized under the Interim Biogeographic Regionalisation for Australia (IBRA). The subject land is within the Southwest Botanical Province as described by Beard (1980) and contains Beard Vegetation

Unit: York_352.6 which is characterised by Eucalyptus woodland and Acacia mixed open shrubland with *Eucalyptus loxophleba*, *Eucalyptus accedens*, *Allocasuarina huegeliana*, *Acacia acuminata*, *Hakea preissii*, *Acacia pulchella*, *Allocasuarina campestris*, *Gastrolobium spinosum*, *Grevillea sp.*, *Leptospermum ellipticum*.

Source: Landgate, 2017 (Native vegetation Extent (DAFWA-001, 2016)

A search of the Commonwealth Department of Environment and Energy's (DEE) database of Matters of National Environmental Significance (MNES) indicated that there could be a Threatened Ecological Community (TEC) in the vicinity of the subject land. The TEC is called 'Eucalypt Woodlands of the WA Wheatbelt' and is described by Commonwealth of Australia (2016) as:

> *Eucalypt Woodlands are found on the flatter landscapes and lower rises of the wheatbelt. The main trees are eucalypts that typically have a single trunk. They occur as a complex mosaic involving about 30 species, including many iconic trees of the Wheatbelt including York gum, Flooded gum, Flat-topped yate, Mallets, Wheatbelt wandoo, Kondinin blackbutt, Lake mallets, Swamp mallets, Salt River gum, Salt salmon gum, Salmon gum, Red morrel, Gimlet, Merrit and Wandoo. The trees present varies from patch to patch. The native understorey is diverse and very variable, ranging from largely bare to grassy to herbs and wildflowers to shrubby.*

The subject land has been mostly cleared for agricultural purposes. Areas with vegetation remaining are shown in Plate 7 and Figure 2. The poultry farm location does not require clearing of native vegetation.

2.10 HERITAGE

The Department of Aboriginal Affairs Heritage database has been sourced (Landgate, 2017). No listed Aboriginal heritage places are known to occur on the subject land. The nearest known sites are associated with the Great Eastern Highway (Site 3522: Northam Hill) and the railway line (Site 4030; Grass Valley 1).

2.11 BUSHFIRE

The Department of Fire and Emergency Services *Map of Bush Fire Prone Areas* (2016) indicates that none of the modules are within areas considered to be 'Bush Fire Prone'.

Source: https://maps.slip.wa.gov.au/landgate/bushfireprone2016/

3 PLANNING GUIDELINES

This section outlines the guidance provided in various planning documents in relation to poultry farms. Where required, additional detail about how management strategies to be implemented at the site to address the guidelines is presented in the following section.

3.1 ZONING

State Planning Policy No. 2.5: Rural Planning (SPP 2.5) seeks to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. The policy notes that animal premises are important contributors to the food and economic need of Western Australia. The WAPC policy states that animal premises on rural land are a rural land use and are generally supported and encouraged where rural amenity and environmental impacts can be effectively managed.

The subject land is zoned Rural, consistent with this policy. In order for the site to be developed as a poultry farm, however, it requires Shire of Northam approval for this use, as intensive animal husbandry (which includes poultry farms) is a discretionary land use under Shire of Northam Local Planning Scheme No. 6.

3.2 BUFFER DISTANCES

WAPC *SPP 2.5 Rural Planning* states that avoiding land use conflict can be achieved through application of separation distances based on environmental policy and health guidance, prescribed standards, accepted industry standards and/or codes of practice by considering:

(i) whether the site is capable of accommodating the land use; and/or

(ii) whether surrounding rural land is suitable, and can be used to meet the separation distances between the nearest sensitive land use and/or zone, and would not limit future rural land uses; and

(iii) whether if clauses (i) and/or (ii) are met, a statutory buffer is not required.

The Environmental Protection Authority (EPA) guidance statement *Separation Distances Between Industrial and Sensitive Land Uses* (EPA, 2005) acknowledges that a code of practice for the poultry industry exists and indicates that buffer distances of between 300m and 1000m are recommended, depending on the size of the poultry farm. This is consistent with the EPA's 2015 *Draft Environmental Assessment Guideline for Separation Distances between Industrial and Sensitive Land Uses*.

There is approximately 1.1 km separation between Module 2 and the nearest existing residence at Lot 340 (No. 585) on Northam York Road. Distances from other modules to other neighbouring residences exceeds 1.1 km (as shown in Figure 2).

The *Environmental Code of Practice for Poultry Farms in Western Australia* (WABGA *et al.*, 2004) sets out additional recommended buffer distances between poultry farm infrastructure, adjacent properties and environmental receptors, as summarised in Table 6.

TABLE 6: RECOMMENDED BUFFERS FOR POULTRY FARMS

Facility	Poultry sheds (same farm operator)	Poultry sheds (different Farm operator)	Existing or future residential zone	Existing or future rural residential zone	Farm boundary	Water supply bores	Wetlands, waterways and floodways	Water table
New free to range sheds [1]	20m between enclosures	1000m	500m	300m	100m	50m	200m	3m
Manure storage compounds	Not applicable to this operation							
Burial of dead birds	Not applicable to this operation					100m	50m	3m
Manure/ litter application to land	Not applicable for this operation							

Source: WABGA et al. 2004. Notes: [1] buffer starts 20 m outwards from the shed perimeter.

The proposed poultry farm layout meets buffer requirements for:

- Recommended 1000m separation from offsite commercial or private poultry farms.
- Recommended 50m separation between poultry shed water discharge and groundwater bores.
- Recommended 20m between free-range sheds and enclosures, 200m to waterways, and 3m to groundwater.
- Recommended 100m separation from groundwater bores, 50m to waterways, and 3m to groundwater.

The above lateral separation distances are all incorporated in the proposed site layout. In addition, the distance between modules is at least 1.1 km, for biosecurity purposes.

The standard practice for determining setbacks to water courses is consideration of risk associated with discharge of nutrients. A site inspection and reference to air photos indicates that upper reaches of the poorly defined ephemeral water courses on the subject land do not actually appear on the subject land as water ways (see aerial photo, Figure 2 and Appendix C). In this case, separation distances have been determined based on where water courses become defined and therefore present a higher risk for nutrient export (Plate 8). All the modules meet the requirements for the 200m setback to a waterway.

Vertical separation distances are also achieved at the site, with a groundwater separation of at least 30m for each of the four modules. This allows for a more than adequate vertical separation from the proposed poultry sheds to groundwater.

PLATE 8: WATERCOURSES USED FOR 200M SEPARATION ESTIMATION

3.3 NUISANCE

Provisions of the *Health Act 1911* would apply to the site if a local government Environmental Health Officer determined that site operations created a nuisance that was not appropriate to site operations. The *Health (Poultry Manure) Regulations 2001* do not apply to the site, as it is not located within a local government area subject to the regulation.

Nuisance issues associated with poultry farms would typically include emission of odour or fly breeding. Given that the nearest residence to the site is more than 1000m from the sheds at their closest point, it is not anticipated that odour issues would arise.

Fly breeding risk is minimal as litter will be removed from site when sheds are cleaned out (without storage on-site).

4 MANAGEMENT STRATEGIES

This section sets out management strategies to be employed at the site in order to manage potential environmental impacts associated with site operations. The proposed site layout is presented on Figure 4.

4.1 ODOUR, DUST & NOISE

The nearest residence is located more than 1.1 km east of the nearest shed of Module No. 1. This exceeds the maximum buffer distance of 1000m indicated in the EPA separation distance guideline (EPA, 2005 and EPA, 2015). All site buildings will be set back at least 100m from the subject land boundaries.

The risk of significant offsite odour, dust or noise impacts is considered to be low due to the distance to the nearest residence (1.1 km to the east). Daytime site noise will generally be in line with that associated with farming activities in a rural area. While some activity will take place at the site at night, such as catching operations and the arrival and departure of associated vehicles, there is not anticipated to be a high level of noise that would result in offsite disturbance.

Odour and dust risks will also be minimised by:

- Cleaning litter from sheds between batches of birds in as short a time as is practicable (this usually takes less than a day). Cleaning takes place inside the shed with doors shut to prevent excessive dust and odour dispersal.
- Maintaining watering and sprinkler systems to ensure that litter does not become too wet (or too dry). Moisture content of between 30 – 40% and less than 50% will reduce the risk of odour generation. Should litter become too wet, it can be rotary hoed or have extra absorbent material added.
- Immediate removal of litter from the property (i.e. without stockpiling/ storage on the property).
- Dust generation will be minimised by ensuring that litter contains between 30 – 40% moisture.
- A speed limit of 25km per hour will be applied to vehicles within the property. Litter being removed from the property will be covered to prevent discharge of odour and dust.
- Planting banks of trees to reduce visual impacts and potential dust.

Noise risks will be minimised by:

- Selecting equipment which has specifications for low noise generation (e.g. fans, pumps and other equipment). Equipment such as forklifts and bobcats will be 'quietened' with use of lights instead of beepers (subject to Occupational Safety and Health Act and regulation compliance).
- Positioning potentially noisy operations as far away as possible from surrounding residents (including access roads). This can be achieved through placing machinery on the side of buildings which are furthest away from sensitive receptors.
- Orienting sheds to maximise natural ventilation to reduce the need for use of fans.
- Setting a 25km speed limit for vehicles travelling within the property.
- Maintaining and servicing equipment so that it runs smoothly and quietly.

- Induction of staff to ensure that they operate equipment quietly (with signs to reinforce the need for noise minimisation).
- Scheduling most activities to occur during daylight hours (except for capture of birds for removal from farm).
- Bird removal trucks will arrive in the late afternoon and be loaded during the night. The trucks will depart the property at approximately 8am to reduce the risk of truck noise during the night.

4.2 LITTER MANAGEMENT

The risks associated with management of litter (fly breeding, uncontrolled runoff, and nutrient infiltration to groundwater) are reduced for this project as all litter from the sheds will be removed from the property for beneficial uses (without on-site stockpiling or storage).

4.3 NUTRIENT AND FREE RANGE AREA MANAGEMENT

While litter will be removed from the sheds at the end of each batch of chickens, some manure will be deposited in the free range areas. There will be no litter distributed in the free range area (i.e. sawdust or straw). Given that the chicks are too small for free ranging for the first 21 days (brooding stage), there is approximately 35 days in each cycle when manure is likely to be deposited. During the 35 day grower phase, the majority of nutrients (90%) are expected to be deposited within the shed structures, with 10% deposited outside during free ranging (as described in *Environmental Code of Practice for Poultry Farms in Western Australia*; WABGA *et al.* 2004). The Environmental Code suggests that 750 kg of manure is produced per 1000 birds over the growing period, so 10% of this equals 75 kg per 1000 birds. As each shed has approximately 44,800 birds per batch, this equates to 3.3 tonnes of manure per batch or 19.1 tonnes per shed per year (based on 5.79 batches per annum). For the 24 sheds, approximately 458.5 tonnes of manure per year will be produced in the free range areas. Table 7 indicates the volumes of manure and nutrient content.

It is proposed to rotate the free range areas available to the chickens from one side of the shed to the other to maintain grass cover. While one side is being used, the other side will have 80% of the manure removed using a bobcat and rake. This manure will be removed from the farm. This rotation will also allow for rehabilitation of the resting free range area. The remaining 20% of manure will be assimilated into the farming system, which, due to its significant size, does not pose a risk to the surrounding environment. Additional resting of the free range area will occur while the chicks are growing to a size where they are capable of free ranging.

The free range area will be maintained with grass as much as possible through rotation of birds, mowing and raking (where hollows and dust bath areas may form).

The proponent will plant vegetation buffers around each of the four modules. Planting will comprise local native species. The planting will assist in minimising visual impacts, create a wind break for the free ranging birds and assist in reducing risks associated with dust dispersion.

TABLE 7: COMPOSITION OF BROILER MANURE (NO LITTER)

	Total Volume	Total Nitrogen	Ammonium NH4 –N	Total Phosphorus	Potassium
Fresh Poultry Manure (kg/tonne)*		13	5	8.5	5.5
Poultry manure in free range area per batch per shed	3.3 tonnes	42.9 kg	16.5 kg	28.05 kg	18.15 kg
Poultry Manure in free range area per shed per year	19.1 tonnes	248.3 kg	95.5 kg	162.35 kg	105.05 kg
Poultry Manure in free range area. All sheds for one year	458.6 tonnes	5959.2 kg or 3.2 kg/ha/year	2292 kg or 1.25 kg/ha/year	3896 kg or 2.12 kg/ha/year	2521.2 kg or 1.34 kg/ha/year
80% of manure removed from free range area	199 tonnes removed	4767.36 kg	1833.6 kg	3117.12 kg	2016.96 kg
20% of manure assimilated into Lot 13 (1,832.7 ha)	49.9 tonnes	1191.84 or 0.65kg/ha/year	458.4 or 0.25 kg/ha/year	779.28 or 0.42 kg/ha/year	2016.96 or 0.27 kg/ha/year

Source:* Zublena *et al.* 1997.

To illustrate the ability of Lot 13 to assimilate the balance of nutrients, the Department of Water's *Water Quality Protection Note 22 – Irrigation with Nutrient Rich Wastewater*[1] (July 2008) provides some recommended maximum nutrient application rates for nitrogen and phosphorus (Table 8). Although the nutrients from this operation are in the less mobile form of solid waste rather than in wastewater as specified in the document, the values are useful as a basis for determining a sustainable nutrient loading rate to the soils.

The closest water bodies would be pools which form in the Mortlock and Avon Rivers as described in Section 2.8. The Avon River is 3km from Module 4 and the Mortlock River is 2km from Module 1. Given the soil types and the distance from any surface water bodies, the production area would fall within the Risk Category D (Table 8).

For a Category D site, the suggested application rate for nitrogen and phosphorus is 480kg/ha/year and 120 kg/ha/year (See Table 8). As Lot 13 is 1,832.7 ha, even if 100% of the free range manure was assimilated, the nutrient loading of nitrogen and phosphorus would be significantly less than the trigger amount (N – 0.25 kg/ha/year and P – 0.42 kg/ha/year, respectively).

The application of nutrients to land in the form of solid waste is unlikely to have negative environmental impacts and will result in improved soil quality and productivity. This is especially the case as fertilisers are already applied for cropping and pasture on the property.

[1] We note that use of this WQPN has been queried by a DoW officer (RF9496-03, 20 April 2017). The use of this WQPN is standard practice for assessments by DoW, Department of Environment Regulation and Department of Health as it includes consideration of the assimilative capacity for land based on a management unit.

TABLE 8: NUTRIENT APPLICATION RATES FOR SOIL/RECEIVING ENVIRONMENT RISK CATEGORIES

CHARACTERISTICS OF IRRIGATED SOILS	EUTROPHICATION RISK OF SURFACE WATERS WITHIN 500 METRES OF IRRIGATION SITE	RISK CATEGORY
Coarse grained soils e.g. sands and gravels	Significant	A
	Low	B
Fine grained soils (PBI above 100) e.g. loams, clays, clay. In this case, solid waste reduces risk compared to irrigation	Significant	C
	Low	D

RISK CATEGORY	MAXIMUM INORGANIC NITROGEN (AS N)	MAXIMUM REACTIVE PHOSPHORUS (AS P)
	APPLICATION RATE (KG/HA/YEAR)	APPLICATION RATE (KG/HA/YEAR)
A	140	10
B	180	20
C	300	50
D	480	120

4.4 DRAINAGE MANAGEMENT

Management of drainage from the poultry operation will be undertaken to reduce the risk of erosion and nutrient export. The sheds will be constructed along the contour on gently sloping areas to reduce the need for cut and fill.

Runoff from the shed roofs will be directed to the free range area to encourage the growth of grass. This area will be shaped and contoured to prevent ponding of water. These areas will be maintained, rotated and rested to ensure that assimilation of water and nutrients is maximised in the area immediately surrounding the sheds. If water reaches the fenced perimeter of the free range area, the abutting paddock will be used to assimilate water and nutrients through cropping and grazing on a rotation basis. The paddocks already contain drainage systems established via a direct drilling cropping methodology, which has created micro drainage systems to capture and infiltrate surface water flow. Runoff will be prevented from entering drainage lines which could contribute to nutrient export through the installation of rollover drains and similar structures, as required.

However, given that the area is already subject to controlled fertiliser application for cropping, the use of direct drilling as a drainage methodology and the relatively low annual average rainfall in Northam (415 mm), risks related to nutrient export, erosion and scouring are considered to be low. Monitoring will occur to ensure that if any runoff or scouring occurs, additional rollover or cut off drains will be installed to capture and infiltrate runoff. This will ensure that the relatively small risk of nutrient export from overland flow from manure deposited in the free range areas will be further reduced.

All internal roads will have adequate drainage to minimise erosion, including swales, culverts and basins as required.

4.5 BIOSECURITY

Adequate biosecurity is required on a poultry farm to maintain sanitation, disease control and vermin management and is integral to the health of the flock and quality of the product. This means that access to a poultry farm needs to be limited to authorised personnel with a high standard of hygiene at all times. This free range poultry farm will comply with the *National Farm Biosecurity Manual for Poultry Production* (Department of Agriculture, Fisheries and Forestry, 2009).

4.5.1 Distance between Modules

For biosecurity reasons, there will be a minimum distance of 1000 m between the modules. Hygiene protocols will be implemented for staff and activities that will operate between the four modules, to reduce the risk of spread of disease.

4.5.2 Access to Poultry Areas by Ruminants

There is a ban on feeding restricted animal material to ruminants to reduce the risk of introduction of Bovine Spongiform Encephalitis (BSE). Chicken manure may contain restricted animal material including feathers, tissue and poultry feed. Grazing animals will be kept out of the free range area through installation of a fence.

4.5.3 Staff and Visitor Management

Staff amenities will be provided at each module site, including a toilet serviced by a septic tank and drinking water. A transportable office will also be provided (e.g. 12m x 3m x 2.59m high).

Staff induction will be a key part of operations to ensure that strict hygiene and management practices are maintained.

Visitors and their vehicles must remain outside of the designated production areas. There will be an induction process for people who visit the production area.

A sign will be placed close to the entry of the production area to advise visitors of biosecurity requirements (Plate 9).

PLATE 9: BIOSECURITY SIGNAGE

4.5.4 Rodent Control

The main pests of concern in a poultry grower facility are rodents such as the black rat (*Rattus rattus*) and the European mouse (*Mus musculus*). Foxes (*Vulpes vulpes*) may also pose a risk of loss of poultry

by predation. The goal of pest management is to reduce pests to an acceptable level. Pest management will be approached in an integrated manner and will be implemented using the following methods:

- Monitoring of pest levels will be undertaken through deploying sampling devices/traps and visual inspections.
- Preventative measures will include:
  - Feed for poultry will stored securely and will only be supplied inside the shelters, to reduce access by pests;
  - Frequent clean-up of spilled food;
  - Reducing shelter for rats and mice;
  - Fencing of free range areas; and
  - Deployment of bait stations.

4.6 BIRD DEATHS, ACCIDENT MANAGEMENT AND EMERGENCY RESPONSE

A mortality rate of 4-6% of chickens per batch is generally allowed for on broiler farms (WABGA *et al.* 2004). This could mean that up to 2,688 birds could be expected to die in a 44,800 batch over the grow-out period. In a year, this could equate to 373,524 birds (for 24 sheds of 44,800 birds and 5.79 batches per year). The highest mortality is generally in the first several weeks when the birds are small. Management of dead birds will comprise onsite storage in refuse bins (BiobiN: http://www.biobin.net/index.php?id=2) with periodic pick up by a contractor (Shark Enterprises) with transport to C.Wise for composting (http://www.cwise.com.au/).

Mass bird deaths due to factors such as abnormal heat stress or disease rarely occur. However, a plan is required for disposal of the birds should mass deaths occur and management of the issue should the cause be an infectious disease. When disease is the cause of death, the farm owner will obtain a veterinary report and immediately contact the Shire of Northam Environmental Health Officer (EHO). The EHO will assist by reporting the incident to the Department of Agriculture and Food (DAFWA) and provide data to the Department of Health (DOH). These agencies will provide guidance to the landowner on disease control and hygiene, transport and disposal of diseased dead birds.

4.7 CHEMICAL STORAGE & USE

Various chemicals will be kept at the site for use in site operations, such as disinfectants, pesticides, and pharmaceutical products. This is typical of rural operations. Chemicals will be stored in enclosed areas with concrete floors to minimise the risk of spills affecting soil and groundwater, and absorbent materials (e.g. kitty litter) will be kept on site to assist managing spills which may occur. Chemicals will be used in accordance with manufacturer's directions, and containers will be disposed of in an appropriate manner. The main shed (Figure 4) will house the primary chemical storage area. Its location incorporates the recommended 200m buffer to waterways (WABGA *et al.*, 2004).

4.8 LIGHTING FOR SHEDS

Sheds will be lit internally for night time collection of birds. Outside lighting will be minimal to meet health and safety requirements for night workers. External lights will be directed away from external vantage points. The distances from the modules to vantage points (roads and residences) is a minimum of 1km. Night lighting will not cause a loss to visual amenity.

4.9 RESPONSE TO COMPLAINTS AND CONTINGENCIES

If site operators are contacted in regards to complaints about odour, noise or any other relevant issue, the complaint will be logged (date received, date/time of event of concern, contact person). The potential cause of the complaint will be considered by site managers, and the complainant contacted within one week to provide a response. If repeat complaints are received, management will investigate what site practices are potentially causing the issue and consider modification of these practices in order to resolve the issue. If the complaints do not appear to relate to a particular site activity or weather conditions, it may be necessary to liaise with Shire of Northam council staff to try to reach a resolution with the complainant.

5 SUMMARY AND COMMITMENTS

Development of Lot 13 within the subject land as a free-range poultry farm will require construction of four groups of six sheds, each to house 44,800 chickens. The proposed poultry farm infrastructure layout is indicated on Figure 4.

Poultry will be raised in batches lasting 62 days (nearly nine weeks), and the animals will be taken offsite for slaughter and processing. Poultry farms are required to meet exacting standards to ensure that the end product meets processor and market expectations. This site will comply with poultry management standards set by the RSPCA in *Meat Chickens, RSPCA Approved Farming Scheme Standards* (RSPCA, 2013). It will also meet environmental guidance set out in *Environmental Code of Practice for Poultry Farms in Western Australia* (WABGA *et al.*, 2004).

A review of available guidelines has identified recommendations for separation distances between poultry farm operations (overall, and for specific farm elements) and various receptors. The proposed site layout meets the lateral separation distance requirements identified, including separation from adjacent residences and setback from waterways. The Avon and Mortlock Rivers are considered the primary environmental receptors. As the waterways are located at least 200m from the poultry farm modules, there will be removal of most manure and nutrients, with no surface water vectors, risks to the rivers are considered to be low. In addition, the depth to groundwater is at least 30m below ground surface level. This is well above the recommended minimum separation distance of 2m between surface and groundwater.

Based on a desktop review and assessment of site-specific information about physical attributes, including soil and groundwater conditions, it is considered that the proposed development can be managed to meet desired objectives for its operations without impacting on the environment, or the health or amenity of surrounding property owners and the wider public.

In order to ensure that the site is managed in a way that should minimise opportunity for environmental impacts, the commitments listed in Table 9 are made in support of this proposal:

Disposal of dead birds will be managed onsite via removal from the property, unless mass bird deaths occur.

TABLE 9: COMMITMENTS AND RESPONSIBILITIES

ITEM	ACTION	RESPONSIBILITY/ TIMING
Separation distances: Sensitive receptors, waterways, groundwater	Separation distances to be maintained as outlined in: • Environmental Code of Practice for Poultry Farms in Western Australia (WABGA et al., 2004) • EPA, Environmental Protection Authority (2005) EPA Guidance for the Assessment of Environmental Factors - Separation distances between Industrial and Sensitive Land Use. Guidance No. 3, June 2005; and • EPA, Environmental Protection Authority (2015) Draft Environmental Assessment Guideline for Separation Distances between Industrial and Sensitive Land Uses.	Proponent (at all times)

ITEM	ACTION	RESPONSIBILITY/ TIMING
Site security and biosecurity	Installation of a gate and signage at the site entry. Entry by authorized personnel only	Proponent (prior to commencement)
Nutrient, odour, dust and pest management	Removal of spent litter from the subject land for beneficial reuse. Other practices as outlined in Section 4.1	Proponent (at all times)
Management of free range areas	Free range areas will be managed as per requirements of Ingham Chickens, which includes rotation of free range areas, mowing and raking to reduce manure levels and prevent ponding of water. A vegetation buffer will be planted around each module to provide a wind break for birds, visual buffer and to reduce dust risk.	
Drainage management	Site selection for gently sloping locations Design to direct storm water from roofs through free range areas Surrounding paddocks have inherent drainage management via direct drilling for seeding of crops. Additional drainage controls (e.g. rollover drains to be installed where risk of overland flow or erosion is identified through monitoring) Internal roads to have adequate drainage to prevent erosion	Proponent (prior to commencement)
Management of pests and predators	Fencing of free range areas (compound fencing) Monitoring of pests, with treatment and control as required	Proponent (during operations)
Disposal of dead birds	Storage in BiobiNs and removal from the property by contractor	Proponent (during operation)
Mass death of birds	Mass death to be dealt with as per Section 4.6	Proponent with advice from relevant agencies and authorities (in case of mass death)
Safe storage and use of chemicals	Storage of chemicals in enclosed areas with concrete floors, located at least 200m from waterways. Availability of materials safety data sheets for chemicals used on site. Use of chemicals in accordance with manufacturer's directions.	Proponent (during operations)
Lighting of sheds	Internal lighting of sheds for night time collection of birds. Minimal external lighting for safety of staff. External lights will be directed away from external vantage points.	
Response to complaints	Logging of complaints received, review of associated issues, and documentation of follow-up undertaken. Contingencies for operation modification, if required.	Proponent (during operations)

6 REFERENCES

Aquageo Pty Ltd (2017) Electrical Resistivity and FDEM-8B Geophysical Survey – O'Brien Farm.

BOM, Bureau of Meteorolgy (2017) Sourced from: http://www.bom.gov.au/

Commonwealth of Australia (2016) Eucalypt Woodlands of the Western Australian Wheatbelt: a nationally protected ecological community.

DAFWA, Department of Agriculture and Food Western Australia (2013a) Sensitive Sites. Sourced 7 March 2017: https://www.agric.wa.gov.au/grains/sensitive-sites-western-australia

DAFWA, Department of Agriculture and Food (2017) Soil-landscape Mapping – Best Available (DAFWA-033) http://www.nationalmap.gov.au/

DAFWA, Department of Agriculture and Food (2013) Land Capability Mapping. Sourced from WA Atlas, 2017.

DAFWA, Department of Agriculture and Food (2015)

EPA, Environmental Protection Authority (2005) EPA Guidance for the Assessment of Environmental Factors - Separation distances between Industrial and Sensitive Land Use. Guidance No. 3, June 2005.

EPA, Environmental Protection Authority (2015) Draft Environmental Assessment Guideline for Separation Distances between Industrial and Sensitive Land Uses.

RSPCA, Royal Society for the Prevention of Cruelty to Animals (2013a) Sourced: 20 October 2013: http://kb.rspca.org.au/What-is-the-difference-between-free-range-bred-free-range-organic_92.html

RSPCA, Royal Society for the Prevention of Cruelty to Animals (2013b) Meat Birds – RSPCA Approved Farming Scheme Standards. Deakin West, Australian Capital Territory.

Shire of Northam (2013) Local Planning Strategy.

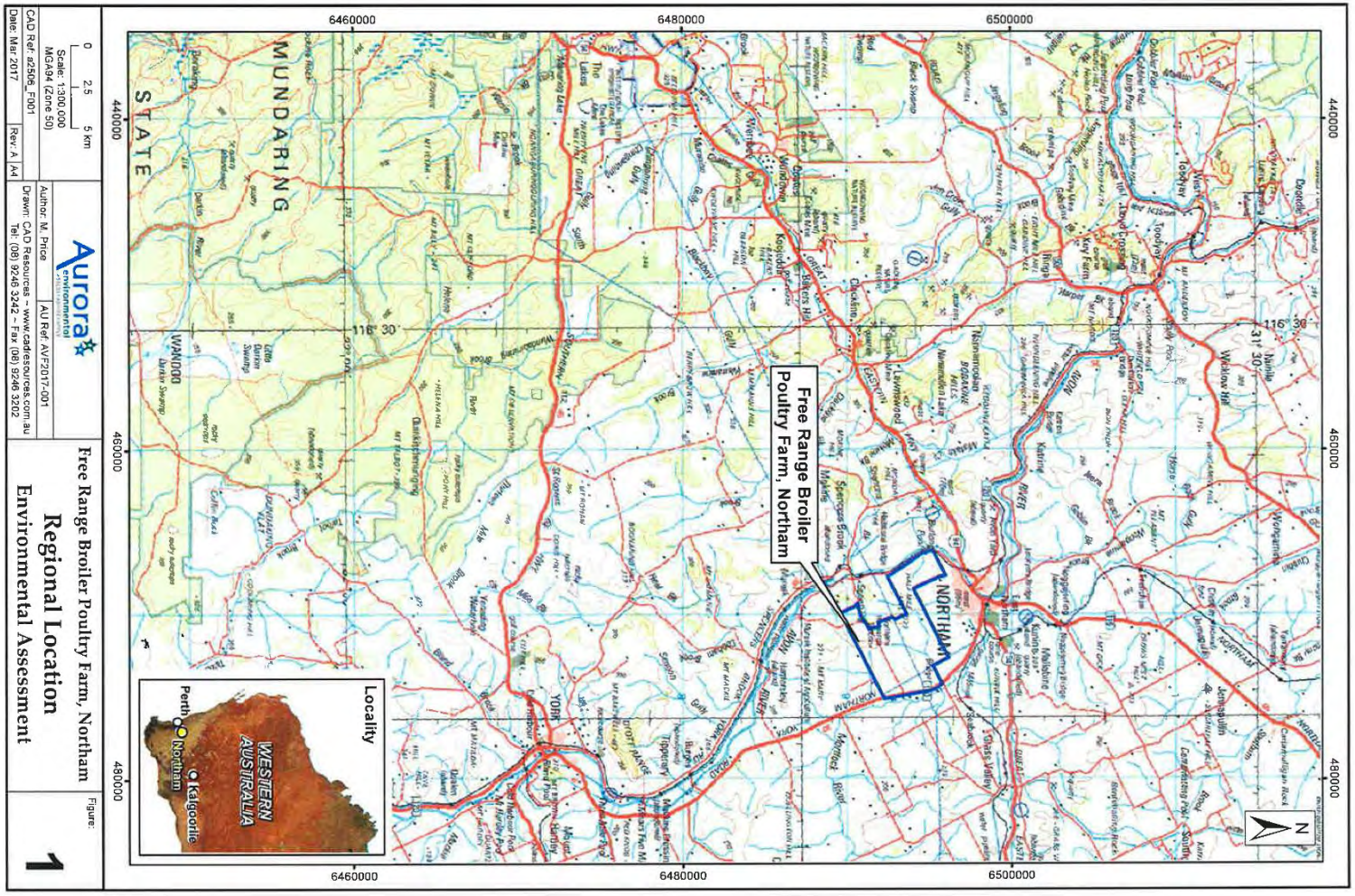
WABGA and PFAWA, Western Australian Broiler Growers Association and the Poultry Farmers Association of Western Australia (2004) Environmental Code of Practice for Poultry Farms in Western Australia. Western Australian Broilers Growers Association, Poultry Farmers Association of Western Australia, Department of Environment, Department of Agriculture, Department of Health, Department for Planning and Infrastructure, Western Australian Local Government Association, Shire of Gingin, Shire of Serpentine Jarrahdale.

WAPC, Western Australian Planning Commission (2003) Statement of Planning Policy No. 4.3 – Poultry Farms Policy. Perth, Western Australia.

Weatherzone (2017) Northam Climate. Sourced from: http://www.weatherzone.com.au/climate/station.jsp?lt=site&lc=10111

Zublena J.P., Barker, J.C. Carter, T.A. (1997) Poultry Manure as a Fertilizer Source. North Carolina Cooperative Extension Service. AG-439-5

FIGURES


Free Range Broiler Poultry Farm, Northam
Regional Location
Environmental Assessment
Figure: 1
Locality
Perth
Northam
Kalgoorlie
WESTERN AUSTRALIA
MUNDARING
STATE
NORTHAM
YORK
WANDOO
6460000
6480000
6500000
440000
460000
480000
116° 30'
31° 30'
N
0 2.5 5 km
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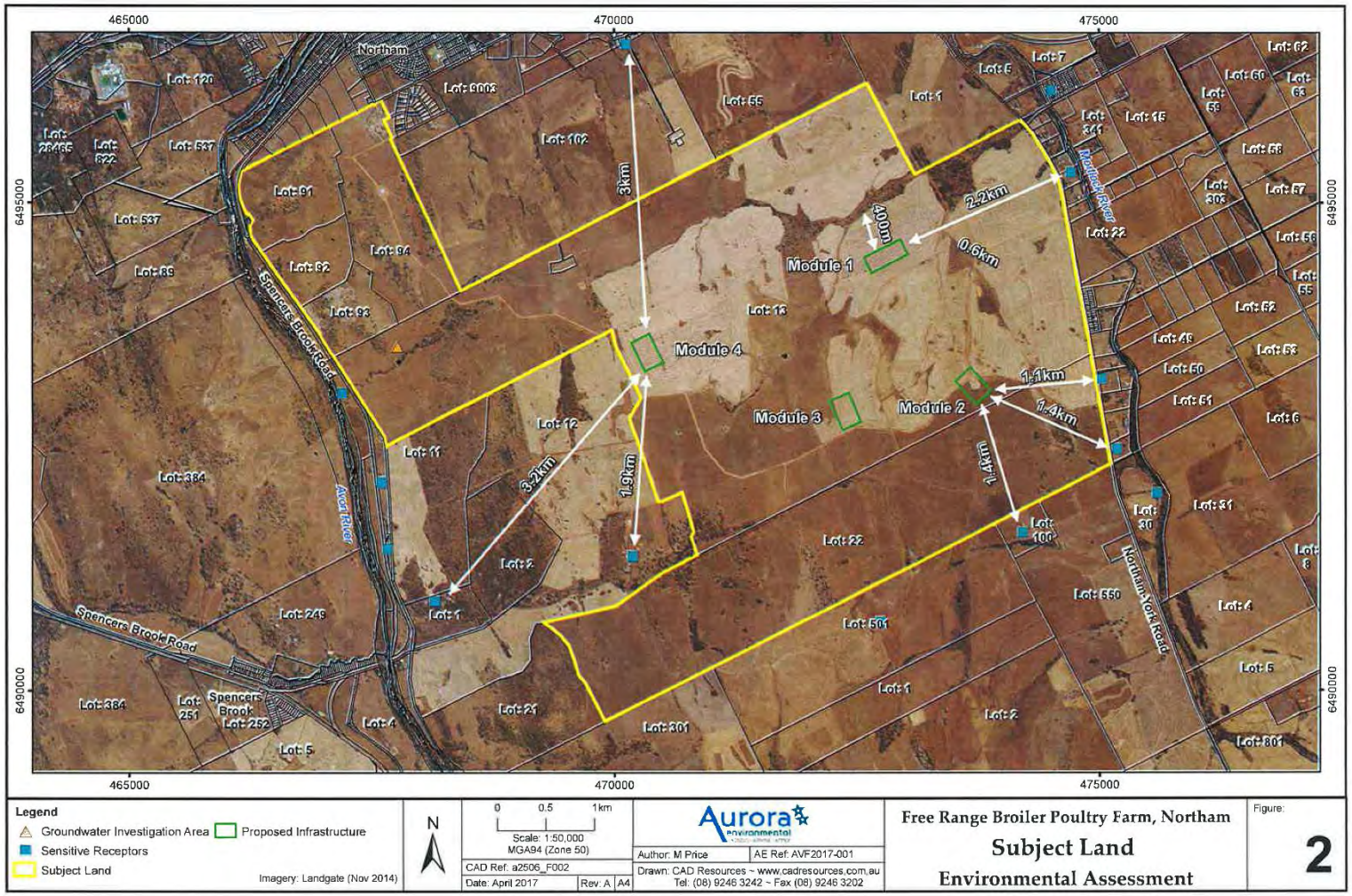
Date: Mar 2017
Rev: A
Author: M. Price
AU Ref: AVF2017-001
Drawn: CAD Resources - www.cadresources.com.au
Tel: (08) 9240 3242 – Fax (08) 9240 3202


465000
470000
475000
6495000
6490000
Northam
Lot: 120
Lot: 9003
Lot: 55
Lot: 1
Lot: 7
Lot: 6
Lot: 62
Lot: 60
Lot: 63
Lot: 59
Lot: 15
Lot: 441
Lot: 58
Lot: 57
Lot: 305
Lot: 56
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Lot: 50
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Lot: 6
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Lot: 8
Lot: 4
Lot: 5
Lot: 801
Lot: 28466
Lot: 822
Lot: 537
Lot: 91
Lot: 94
Lot: 92
Lot: 93
Lot: 89
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Lot: 4
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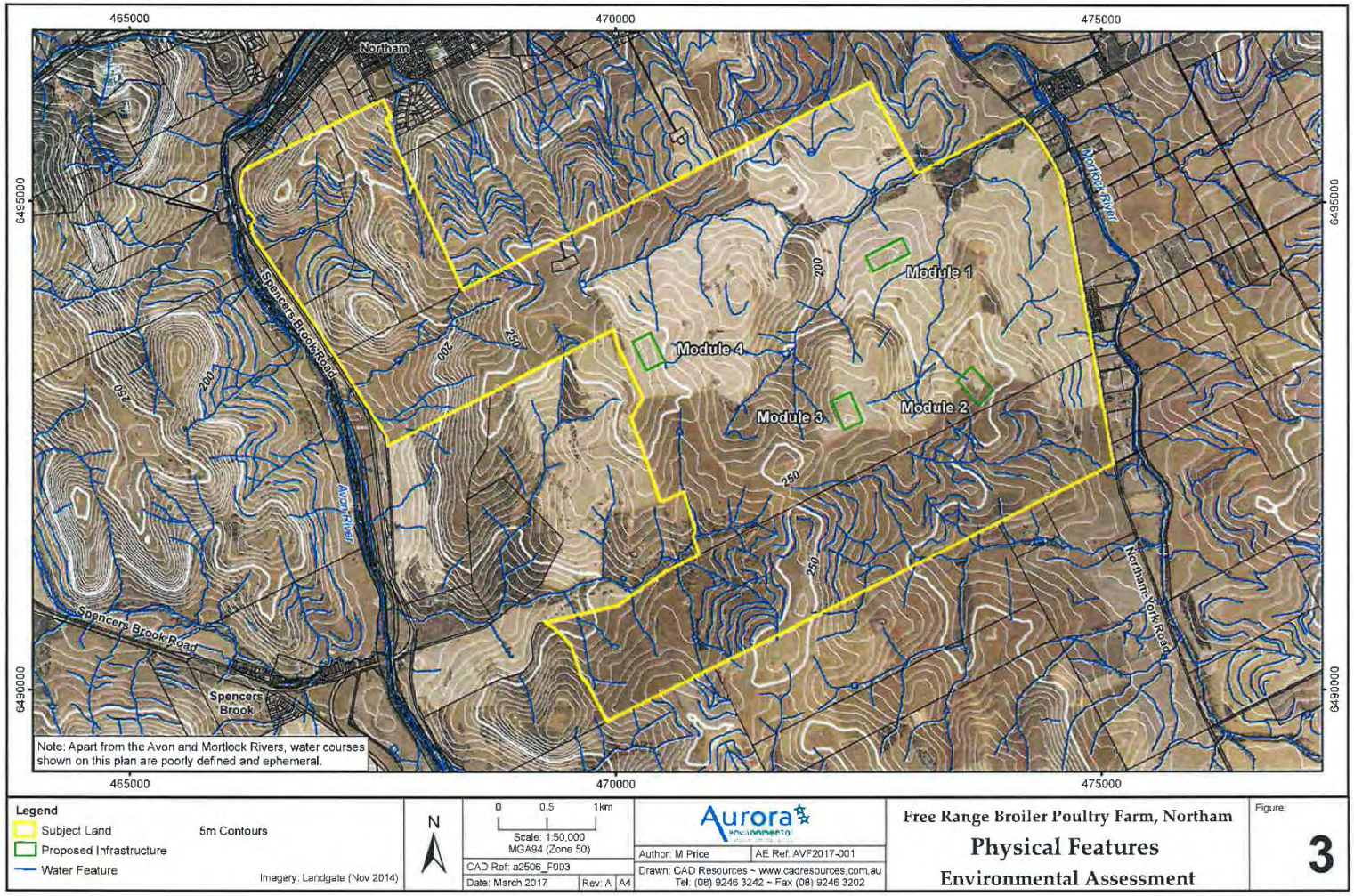
Lot: 301
Lot: 22
Lot: 501
Lot: 550
Lot: 30
Lot: 100
Lot: 1
Lot: 2
3km
400m
2.2km
0.6km
Module 1
Module 4
Module 3
Module 2
1.1km
1.4km
3.2km
1.9km
1.4km
Spencers Brook Road
Avon River
Northam-York Road
Spencers Brook
Legend
Groundwater Investigation Area
Proposed Infrastructure
Sensitive Receptors
Subject Land
Imagery: Landgate (Nov 2014)
N
0 0.5 1km
Scale: 1:50,000
MGA94 (Zone 50)
CAD Ref. a2506_F002
Date: April 2017
Rev: A
A4
Aurora environmental
Author: M Price
AE Ref: AVF2017-001
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202
Free Range Broiler Poultry Farm, Northam
Subject Land
Environmental Assessment
Figure:
2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470000
475000
6495000
6490000
Northam
Spencers Brook Road
Avon River
Mortlock River
Northam-York Road
Module 1
Module 2
Module 3
Module 4
200
250
Spencers Brook
Note: Apart from the Avon and Mortlock Rivers, water courses shown on this plan are poorly defined and ephemeral.
Legend
Subject Land
Proposed Infrastructure
Water Feature
5m Contours
Imagery: Landgate (Nov 2014)
N
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MGA94 (Zone 50)
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Date: March 2017
Rev: A
A4
Aurora
Author: M Price
AE Ref: AVF2017-001
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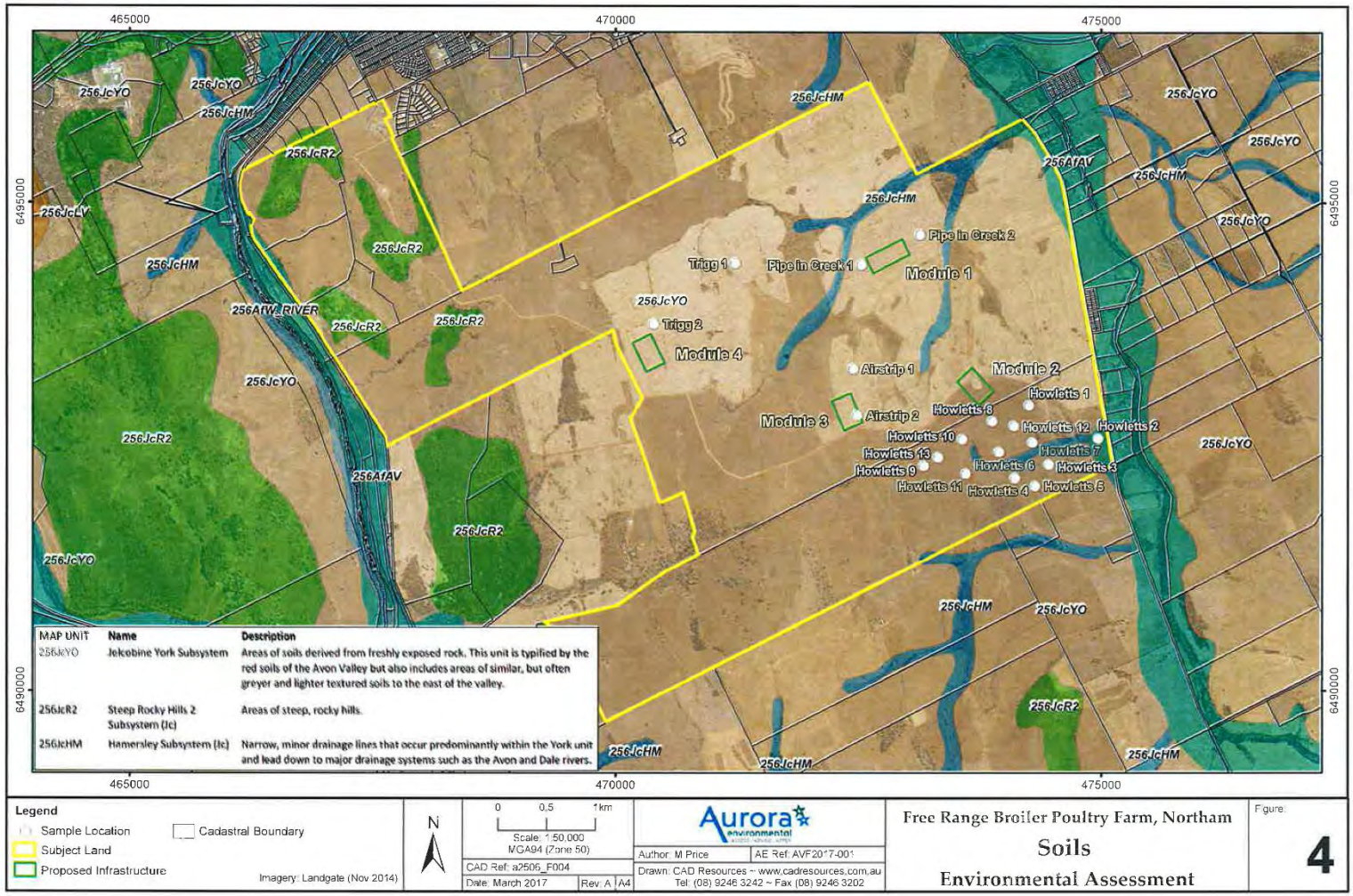
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202
Free Range Broiler Poultry Farm, Northam
Physical Features
Environmental Assessment
Figure
3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470000
475000
6495000
6490000
256JcYO
256JcHM
256JcR2
256JcLV
256AfW_RIVER
256AfAV
Trigg 1
Trigg 2
Pipe in Creek 1
Pipe in Creek 2
Module 1
Module 2
Module 3
Module 4
Airstrip 1
Airstrip 2
Howletts 1
Howletts 2
Howletts 3
Howletts 4
Howletts 5
Howletts 6
Howletts 7
Howletts 8
Howletts 9
Howletts 10
Howletts 11
Howletts 12
Howletts 13
MAP UNIT | Name | Description
256JcYO | Jekobine York Subsystem | Areas of soils derived from freshly exposed rock. This unit is typified by the red soils of the Avon Valley but also includes areas of similar, but often greyer and lighter textured soils to the east of the valley.
256JcR2 | Steep Rocky Hills 2 Subsystem (Jc) | Areas of steep, rocky hills.
256JcHM | Hamersley Subsystem (Jc) | Narrow, minor drainage lines that occur predominantly within the York unit and lead down to major drainage systems such as the Avon and Dale rivers.
Legend
Sample Location
Cadastral Boundary
Subject Land
Proposed Infrastructure
Imagery: Landgate (Nov 2014)
N
0 0.5 1km
Scale: 1:50,000
MGA94 (Zone 50)
CAD Ref: a2506_F004
Date: March 2017
Rev: A
A4
Aurora environmental
Author: M Price
AE Ref: AVF2017-001
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202
Free Range Broiler Poultry Farm, Northam
Soils
Environmental Assessment
Figure:
4

Attachment 5

ODOUR AND DUST IMPACT ASSESSMENT

NORTHAM POULTRY FARM

Prepared for Avon Valley Poultry Pty Ltd

by

ENVALL

Environmental Alliances Pty Ltd

May 2017

Disclaimer and Limitation

Environmental Alliances Pty Ltd (ENVALL) will act in all professional matters as a faithful adviser to the Client and exercise all reasonable skill and care in the provision of its professional services.

This report has been prepared on behalf of the Client and is subject to, and issued in accordance with, the agreement between the Client and ENVALL. ENVALL accepts no liability or responsibility whatsoever in respect of any use of, or reliance upon, this report by any third party.

This report is based on the scope of services agreed with the Client, budgetary and time constraints requested by the Client, the information supplied by the Client (and its agents), methodologies consistent with the preceding and, where applicable, our understanding and interpretation of current regulatory requirements.

Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by the client or their nominees during the visit, visual observations and any subsequent discussions with regulatory authorities. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

ENVALL has not attempted to fully verify the accuracy or completeness of the written or oral information supplied for the preparation of this report. While ENVALL has no reason to doubt the information provided, the report is complete and accurate only to the extent that the information provided to ENVALL was itself complete and accurate.

This report does not intend to give legal advice, which can only be given by qualified legal advisors.

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Client: Avon Valley Poultry Pty Ltd

Job No: L7122	Version	Prepared by	Reviewed by	Submitted to		
Status				Person/Org	Copies	Date
Draft Report	V1a	DP	KP	Client	*.doc *.pdf	15/5/2017
Final Report	V1b	DP	-	Client	*.pdf	15/5/2017

Environmental Alliances Pty Ltd
Tel: (08) 9343 0554
Fax: (08) 9343 0079
ABN: 75 103 600 620

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

TABLE OF APPENDICES

1. INTRODUCTION

Avon Valley Poultry Pty Ltd proposed to establish a free range broiler (meat) poultry farming operation on Lot 13 on Diagram; Certificate of Title Volume 2125, Folio 166 on the Northam - Cranbrook Road, in the Shire of Northam.

Details of the proposal are described in Lot 13 Northam-Cranbrook Road Northam Development Application – Broiler Poultry Farms Prepared by Avon Valley Poultry Pty Ltd 1st May 2017 Version 3".

Environmental Alliances (ENVALL) has been engaged by Avon Valley Poultry Pty Ltd to undertake odour and dust emissions modelling to support the Development Application.

The site locality is shown in Figure 1[1]. The nearest residence to any farm shed is 1.1 km.

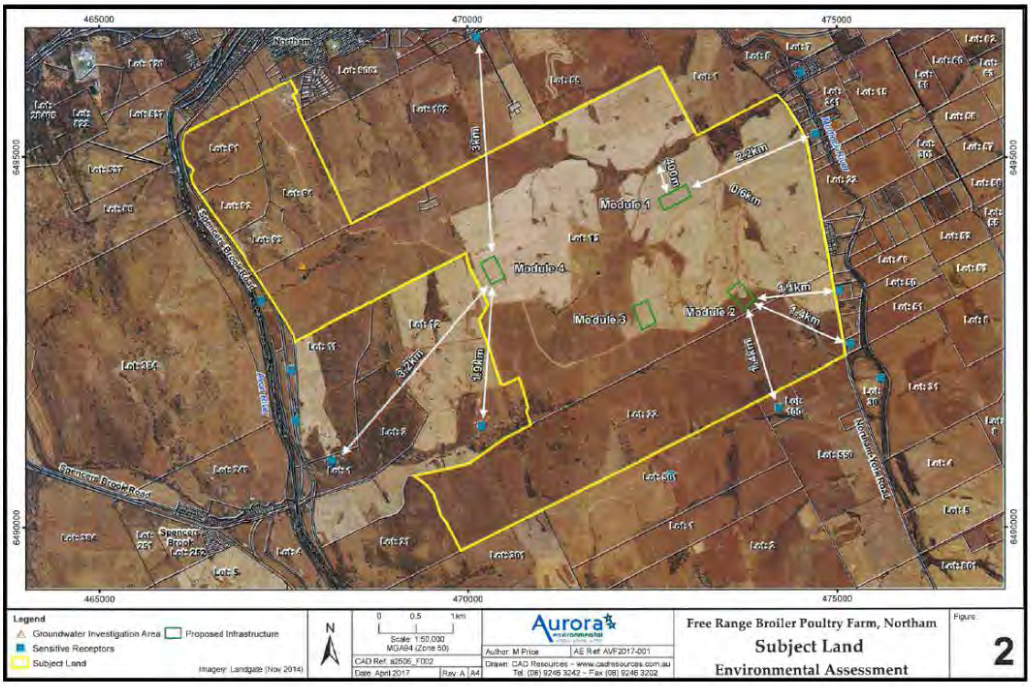

Figure 1 Proposed poultry farm, Northam

Ref: Aurora (2017).

[1] Note that all proposal-related map information used for this assessment has been manually digitised from this Figure and hence should be considered for illustrative purposes only.

2. OVERVIEW OF POULTRY FARMING

Broiler chicken farms typically operate using purpose built sheds to house birds. Day old chicks are provided by Ingham's and reared to an age between 42 and 56 days, when the batch is transported to the processing plant.

The young chicks are kept warm, generally up to 14 days of age, by gas heaters. At approximately 21 days of age, the chickens are allowed to access the free-range area. Water and feed is provided by automatic gravitational/mechanical means to appropriate feeder pans or water points. The floors of the sheds which are concrete are covered in deep litter of 10-15 cm in depth of straw. The sheds are ventilated by large fans encouraging air flow and evaporative cooling systems able to be used in hot conditions. The shed temperature, humidity and air quality are all electronically controlled.

At the end of a growing period birds are caught be hand by the processors contractors in the sheds, placed in crates, to be transported to the processor. The catching and transportation process takes place from midnight to dawn, when the birds are quieter and causes less stress before processing. Sheds are then cleaned by removing the deep litter. Sheds are washed and sprayed with disinfectant to reduce the risk of disease in preparation for the next batch. There is usually a 1 week to 2 week period between batches when the sheds are empty (Aurora 2017).

The placement of birds and harvesting follows a rotational pattern whereby each shed in a module is successively placed approximately every alternate day, whilst in the other most offset module, each successive shed is harvested approximately every alternate day.

3. FARM CONFIGURATION

Details of the farm layout and operation (at ultimate capacity) relevant to modelling the dispersion of odour and dust emissions are as follows:

- 4 poultry broiler sites ("Modules");
- each module comprises 6 broiler sheds, (making 24 sheds in total for the farm);
- each shed is 160.4m long x 17.3m wide, aligned east-west, x 4.6m high at the apex;
- each shed has concrete floor with straw litter lining and nipple drinkers;
- each shed has 16 to 20 axial fans with a total maximum capacity of 55,000 m3/hour per fan discharging internal air towards the middle of the property, with evaporative cooling pads on the opposite end, and an automated environment management system with alarms for conditions exceeding pre-determined set-points (no foggers are required);
- spacing between each shed is 34 m north-to-south;
- stocking capacity is 44,842 birds per shed (16.2 birds per m^2) making a total of 1.076 million birds maximum capacity on the farm at any one time;
- average of 5.79 batches per year per shed;
- the "average" growth cycle (i.e. within variations as indicated below), is 63 days, comprising:
  - days 1 to 21 - chicks kept inside sheds;
  - day 22 onwards - chicks allowed to migrate into free range area during the day;
  - days 35 to 56 - harvesting, with the actual timing dependent on prevailing market demands; and
  - shed clean-out, disinfectant and rest taking a minimum of 7 days;

Management measures include:

- litter is used only once for each batch;
- daily inspections of shed litter with immediate replacement of any wetted litter areas; and
- the farm will be accredited under RSPCA Approved Farming Scheme.

The layout of the Modules and proximity to the nearest residences is shown in Figure 2.

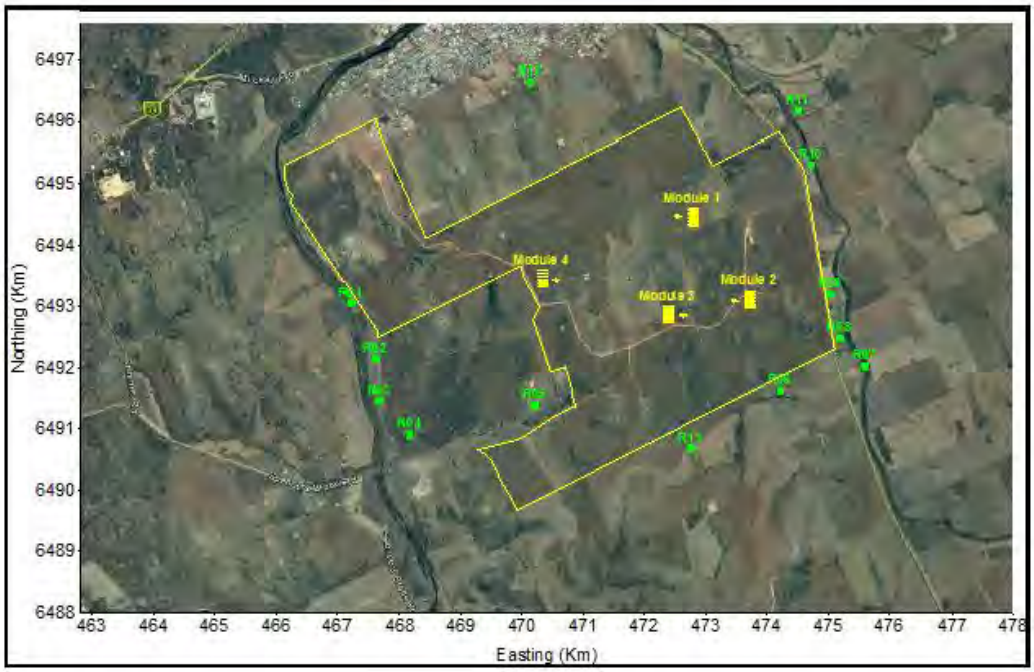

Figure 2 Location of proposed poultry farm Modules and nearest surrounding residences

Notes: Nearest surrounding residences shown as green squares (from Aurora 2017).
Proposed tunnel sheds shown in yellow.
The direction of air flow from the sheds shown as yellow arrows.

4. ODOUR AND DUST IMPACT ASSESSMENT METHODOLOGY

This study follows the approach recommended by the Department of Environmental Regulation (DER) to assess air quality impacts from industrial proposals, which is to use a recognised computer dispersion model to predict the dispersion of air emissions, then to compare the predictions to criteria for acceptable impacts, as described in "Air Quality Modelling Guidance Notes" (DER 2006).

5. ASSESSMENT CRITERIA

5.1 ODOUR

5.1.1 Odour measurement

The basis for quantifying odour concentrations is "dynamic olfactometry". Dynamic olfactometry is the term used to describe the measurement of odour by presenting a sample of odorous gas to a panel in a range of dilutions in a laboratory, and seeking a response from the panellists on whether they can detect the odour. The correlations between the known dilution ratios and the panellists' responses are used to calculate the number of dilutions of the original sample required to achieve the odour detection threshold.

The odour concentration of the sample is expressed in "odour units" (ou), being the ratio of the volume which the sample would occupy when diluted to the odour threshold, to the volume of the sample, as determined in the laboratory. An Australian Standard describing these procedures was published in 2001 (Standards Australia 2001).

5.1.2 Odour criteria

Regulatory odour criteria for odour levels from industrial emissions are not intended to achieve "zero" odour at all times, but rather to prevent odour "nuisance". The "FIDOL" factors widely accepted as contributing to odour nuisance are:

- the Frequency of the exposure;
- the Intensity of the odour;
- the Duration of the odour episodes;
- the Offensiveness of the odour; and
- the Location of the source.

In determining the offensiveness of an odour, it needs to be recognised that for most odours, the "context" (i.e. the "Location" factor) in which an odour is perceived is important. Some odours, for example the smell of sewage, hydrogen sulphide, butyric acid, landfill gas etc., are likely to be judged offensive regardless of the context in which they occur. Other odours such as the smell of jet fuel may be acceptable at an airport, but not in a house, and diesel exhaust may be acceptable near a busy road, but not in a restaurant.

ENVALL has undertaken many hundreds of hours of field-based odour assessments in rural environments and the list below indicates the type of odours which have been commonly encountered without being considered to cause a "nuisance":

- Animal (Hide)
- Burnt Wood (Charred)
- Diesel
- Dry Cement
- Dry Grass
- Eucalypt
- Fruity (Fruit trees)
- Grass
- Gravel Dust
- Hay
- Manure (Cow/Sheep/Horse)
- Plant
- Pollen
- Rotting Fruit
- Smelly Socks (Plant)
- Smoke
- Sweet
- Train
- Vegetation
- Vehicle
- Wood

The numerical criteria currently used by the DER to assess acceptable odour impacts from new proposals[2] for sources other than wake-free stacks, and are applicable to this proposal, are:

- C99.9, 1hr=8ou[3]; and
- C99.5, 1hr=2.5ou.

The "Cnn.n" denotes annual percentiles.

"C99.9" is the 99.9th percentile of 1-hour average odour concentrations predictions. The 99.9th percentile is taken to be the 9th highest 1-hourly predicted odour concentration in the year.

"C99.5" is the 99.5th percentile of 1-hour average odour concentrations predictions, taken to be the 44th highest 1-hourly predicted odour concentration in the year.

In practical terms, in order to compare modelling predictions to this criterion, the 8,760 1-hour average concentration values predicted by the model at each grid point are ranked from highest to lowest. The 99.5 percentile is the 44th highest ranked concentration. The predicted 99.5 percentile, 1-hour average concentrations at each gridded receptor, may then be contoured using a computer software package to draw continuous lines of equal concentrations. The software interpolates the concentrations required for the contours as selected by the user between the values predicted at each discrete grid point. The 2.5 ou contour shows the extent from the source within which the EPA's criterion is exceeded. Areas outside the 2.5 ou contour have odour levels less than the criterion.

Similarly, the 99.9 percentile is the 9th highest ranked concentration. Areas outside the 8 ou contour have odour levels less than the criterion.

5.2 DUST

5.2.1 Nature of dust

Particulates, alternatively referred to as particulate matter (PM), aerosols or fine particles, are tiny particles of solid (a smoke) or liquid (an aerosol) suspended in a gas. They range in size from less than 10 nanometers to more than 100 micrometers (μm) in diameter. "Dust" is a more common name for particulate matter and is generally defined as particles that can remain suspended in the air by turbulence for an appreciable length of time. Dust can consist of crustal material, pollens, sea salts and smoke from combustion products.

Typically, particulate matter is characterised by its size, as measured by collection devices specified by regulatory agencies. The particulate size ranges specified in ambient air guidelines are:

- Total suspended particulate (TSP),
- Particulate matter measured with a sampler with 50% cut point at 10 μm (PM10); and
- Particulate matter measured with a sampler with 50% cut point at 2.5 μm (PM2.5).

---

[2] D Griffiths *pers com* 19/10/2012.

[3] Also accepted by Environmental Protection Authority (WA) – see ENVIRON, 2014, "Phoenix Energy Kwinana WTE Project – Air Dispersion Modelling Assessment", 23 May 2014.

TSP refers to particulate that can remain suspended in the air or can be measured though a TSP sampler. The particle size is not a fixed physical size, but varies, as the size of particle that can remain suspended in the air is a function of air turbulence.

PM10 and PM2.5 particles are more commonly associated with the potential for health impacts because particles below these sizes may enter the lung.

5.2.2 Criteria for Concentrations

The criteria used to assess air quality impacts of airborne particulate matter for this study and the associated reference, are shown in Table 1. These are residential criteria.

5.2.3 Background concentrations

It is understood that the DER's preference for estimating background concentrations for short-term criteria ($\leq$ 1 day averages) is to use the 90th percentile of measured data from the most representative site where data are available. The adopted background levels compared to criterion are shown in Table 1.

Table 1 Criteria used to assess air quality impacts of airborne particulate matter and adopted background concentrations

Pollutant	Averaging period[c]	Criteria	Reference	Background concentration (µg/m3)	Background concentration data source	Background concentration as % of criteria
Particles as PM10	1 day	50 µg/m^3	National Environment Protection Measure for Ambient Air Quality (NEPC 2016)	26.3 (90th percentile)	DER (2015) – Caversham	48
	1 year	25 µg/m^3		16.7		67
Particles as PM2.5	1 day	25 µg/m^3		11.9 (9.6) (90th percentile) [e]		38
	1 year	8 µg/m^3		8.1 (5.6) [e]		70
Particles as TSP	1 day	150 µg/m^3 (Limit)	Kwinana EPP Area C[b]	52.6	TSP concentrations estimated from PM10 measurements using NPI factor of 2 times (NPI 2012)	35
	1 day	90 µg/m^3 (Standard[a])		52.6		58
Deposited Dust[d]	Annual	4 g/m^2/month as total maximum from all sources; equivalent to: - 2 g/m^2/month as additional maximum from a proposal of 2 g/m^2/month background; or - 3 g/m^2/month as additional maximum from a proposal of 1 g/m^2/month background.	NSW (2005)	1	Estimated[f]	NA

[a] Standard is "desirable not to be exceeded".
[b] Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1992 and Environmental Protection (Kwinana) (Atmospheric Waste) Regulations 1992.
[c] Averaging times defined as calendar periods.
[d] Deposited dust is determined as the insoluble solids as defined by AS 3580.10.1-2003.
[e] The value in brackets is the corrected value after the revised correction provided in PEL (2013). The DER $PM_{2.5}$ measurements (un-bracketed) are undertaken using Tapered Element Oscillating Microbalances (TEOMs). These are recorded as unadjusted for temperature, but with the manufacturers recommended equivalency (correction) factor of 1.03x + 3.00. This correction was developed primarily from studies at urban sites in the US and accounts for the volatilization of volatile organics on the filter paper due to the heated inlet and may introduce a significant bias to sampling at rural WA sites. In using data from the urban sites in the NEPM review (PEL, 2013), a comprehensive analysis was performed to determine a more appropriate Australian correction. This work is reported in Appendix B of PEL (2013). The conclusions were that the manufacturer's correction be removed and be replaced by a correction factor of 1.16 for the PM_{10} measurements and 1.14 for the $PM_{2.5}$ measurements (PEL 2013, Appendix B, page 42 and 43).
[f] Assumed for rural environment away from anthropogenic activities.

6. ESTIMATION OF EMISSIONS

There have been a large number of studies of odour emissions from poultry farms, with successive studies tending to provide an increasing level of detail on the parameters affecting emissions. Therefore, the most recent relevant publically available reports have been referenced for this study. These are in order:

- PAE Holmes, 2011, "Best Practice Guidance for The Queensland Poultry Industry – Plume Dispersion Modelling And Meteorological Processing", Job No: 5324, 20 May 2011.
- Dunlop, 2011, "Project No: 04-45 - Dust and odour emissions from meat chicken sheds", Australian Poultry CRC Final Report Program (3B) Project No: 04-45, 25 September 2011.
- Dunlop M. and David Duperouzel, D., 2014, "Monitoring mechanical ventilation rates in poultry buildings - For the application of odour and dust control technologies", RIRDC Publication No. 13/024 RIRDC Project No. PRJ-000599, January 2014.
- Featherston, D., Pollock, T., and Power, M., 2014, "Odour Dispersion Modelling of Meat Chicken Farms - Comparison of AERMOD, AUSPLUME and CALPUFF models", RIRDC Publication No 14/102 RIRDC Project No PRJ-009544, October 2014.

In summary, the rate at which both odour and dust are emitted from tunnel ventilated poultry sheds is highly time variant, depending on the following:

- birds density or total live weight which are a function of the number of birds and their mass through the growth cycle; and
- the combined interaction between the internal shed "target temperature", which is dependent on stage of the growth cycle; the prevailing ambient temperature, and therefore the programmed ventilation rate of the shed.

6.1 GROWTH RATE

The bird growth rate used for this study was taken from the relationship in PAE Holmes (2011) and also used in Featherston et al (2014), as shown in Figure 3.

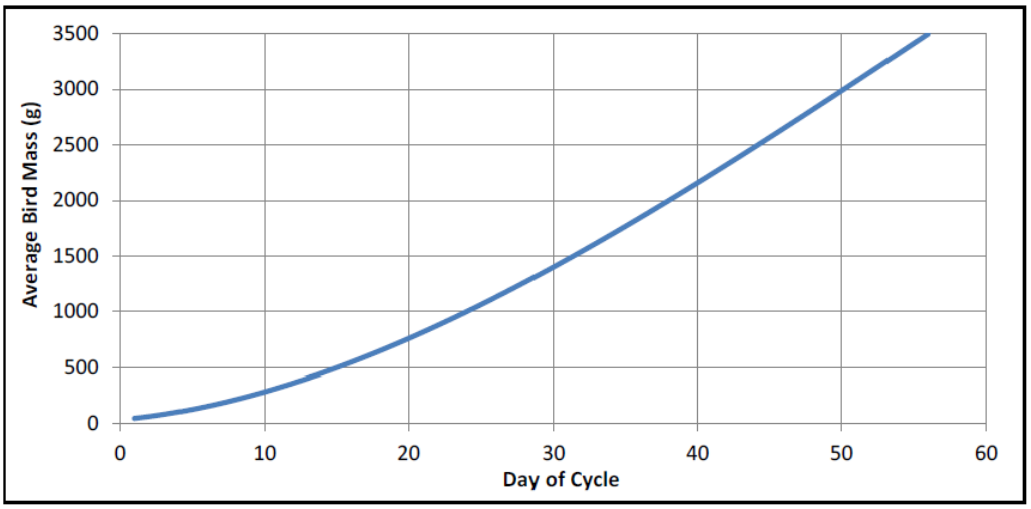

Figure 3 Illustration of modelled bird mass curve

Ref: Featherston et at (2014) Figure 4. This is based on initial bird placement density of 16 birds/m^2, as per this proposal.

6.2 VENTILATION RATE

The sheds ventilation rate can be highly variable based on the amount of cooling air required to maintain the appropriate internal shed temperature for the stage of the growth cycle.

6.2.1 Internal shed target temperature

As bird mass increases and the chicks fledge, the thermo-natural temperature setting required for optimum bird performance decreases. Ventilation is used to manage internal shed temperatures, where optimal shed temperature decreases with bird age, ranging from 31 °C to 34 °C when the chickens are first brought into the shed, down to 18 °C to 21 °C by week 5.

The internal shed Target (effective) temperature[4] used for this study was taken from the relationship in PAE Holmes[5] (2011) and also used in Featherston et al[6] (2014), which is shown in Figure 4.

[4] Note that the internal target temperature setting for a shed is not the effective temperature shown in Figure 6, as the effect of wind chill needs to be included. Thus, the actual internal temperature when fans are running will be higher than the effective target temperature by about 5 °C (PEL 2015).

[5] Original data source cited as "Cobb-Vantress Inc. (2008). Broiler Management Guide.".

[6] Original data source cited as "Cobb-Vantress Inc., 2008. Broiler Management Guide, (http://67.43.0.82/docs/default-source/guides/cobb-broiler-management-guide---english.pdf?sfvrsn=8) Accessed 24th June 2014.", however link as at 9/5/2017 was not available.

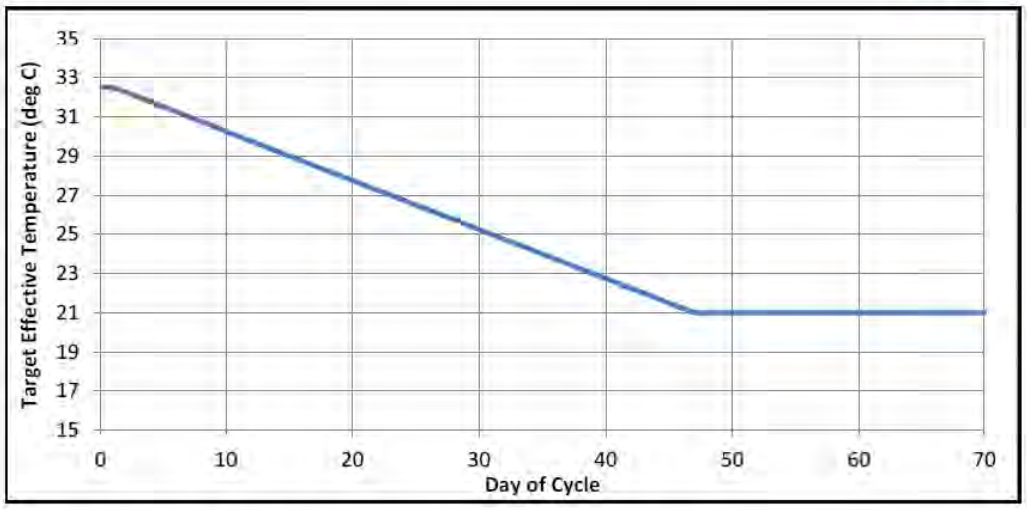

Figure 4 Target effective temperature as a function of bird age

Ref: Featherston et at (2014) Figure 6.

6.2.2 Ventilation function

PAE Holmes (2011) provides an estimate of shed ventilation referenced from data from the University of Georgia, as shown in Table 2.

Table 2 Shed ventilation as a percentage of maximum ventilation

Bird Age (weeks)	1	2	3	4	5	6	7	8
Temperature (°C) above Target	Ventilation Rate (as a percentage of the maximum)							
<1	1.28	2.55	5.11	7.66	9.79	11.49	17.03	17.03
1	1.28	12.5	12.5	25	25	25	25	25
2	1.28	25	25	37.5	37.5	37.5	37.5	37.5
3	1.28	37.5	37.5	50	50	50	50	50
4	1.28	37.5	37.5	50	50	50	50	50
6	1.28	37.5	37.5	62.5	75	75	75	75
7	1.28	37.5	37.5	62.5	75	75	87.5	100
8	1.28	62.5	62.5	62.5	75	75	100	100
9	1.28	62.5	62.5	87.5	100	100	100	100

A review of original University of Georgia source data in Featherston et al (2014) noted that "some differences in the 2011 and 2013 reports were found. In addition the data was not able to be readily found at the stated source". As a consequence, Featherston et al (2014) for their study used the

ventilation calculation approach from Dunlop and Duperouzel (2014), as this was a very comprehensive study of tunnel-shed ventilation rates used on five Australian poultry farms.

The Dunlop and Duperouzel (2014) study developed three ventilation models for tunnel sheds based on different input data. Featherston et al (2014) used "Model 2", which as it is based on more readily available inputs data. "Model 2" calculates ventilation from:

- total live weight;
- internal shed target temperature; and
- ambient temperature.

The average[7] of the "Model 2" function (shown below) from the five farms sampled in Dunlop and Duperouzel (2014), were used for this study (as further discussed in Section 6.2.4):

Fan activity = A × Total Live Weight + B× Target Temperature + C × Ambient Temperature + D × Ambient Temperature² + E × Ambient Temperature × Total Live Weight + F **Equation 1**

Where:

Fan activity is the percentage of maximum tunnel fan activity (%).

A, B, C, D, E and F are coefficients as shown below:

Coefficients	Farm A	Farm B	Farm C	Farm D	Farm E
A	0.000156	-0.000264	-0.000466	-0.000286	-0.0007203
B	-3.458	-6.015	-4.902	-4.874	-3.077
C	-0.69	3.279	2.16	0.759	0.053
D	0.076	-0.01793	-0.02378	0.0246	0.00634
E	2.512×10^{-05}	2.076×10^{-05}	0.0000417	0.00000424	0.00006222
F	75.6	116.85	117.8	134	92.23

Total Live Weight is the total mass of birds in the shed (kg).

Target Temperature (°C).

Ambient Temperature (°C).

Where the application of this function to the shed parameters resulted in predicted ventilation rates below 0.702 m³/hr/kg bird mass, a minimum ventilation rate of 0.702 m³/hr/kg bird mass is applied, based on the recommendations in Ross Broiler Management Manual (Ross 2014) as needed to provide oxygen for respiration and to provide acceptable shed air quality.

6.2.3 Effect of Thinning

Whilst the mass of an individual bird will continue to increase whilst the birds remains in the shed, the total live weight of birds in a shed will fall immediately following a thinning, typically after day 35.

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[7] i.e. the Fan Activity was evaluated using Equation 1's coefficients for each farm, then the average of the resulting Fan Activitys were used.

Therefore, if after day 35, the odour and dust emissions were calculated from total live weight, they would show a dramatic drop immediately after each thinning.

Featherston et at (2014) considered this to be unrepresentative of actual odour emission measurements as it failed to take into account the accumulation of bird droppings in the litter that is not removed with the harvested birds.

It was considered that a similar argument may also hold for dust emissions estimates, assuming that accumulated droppings would also contribute to dust emissions.

Therefore, for this study, to deal with the effect of thinning on the calculation of emissions (see later sections), the total live weight for each shed was held at the day 35 value (see Figure 5).

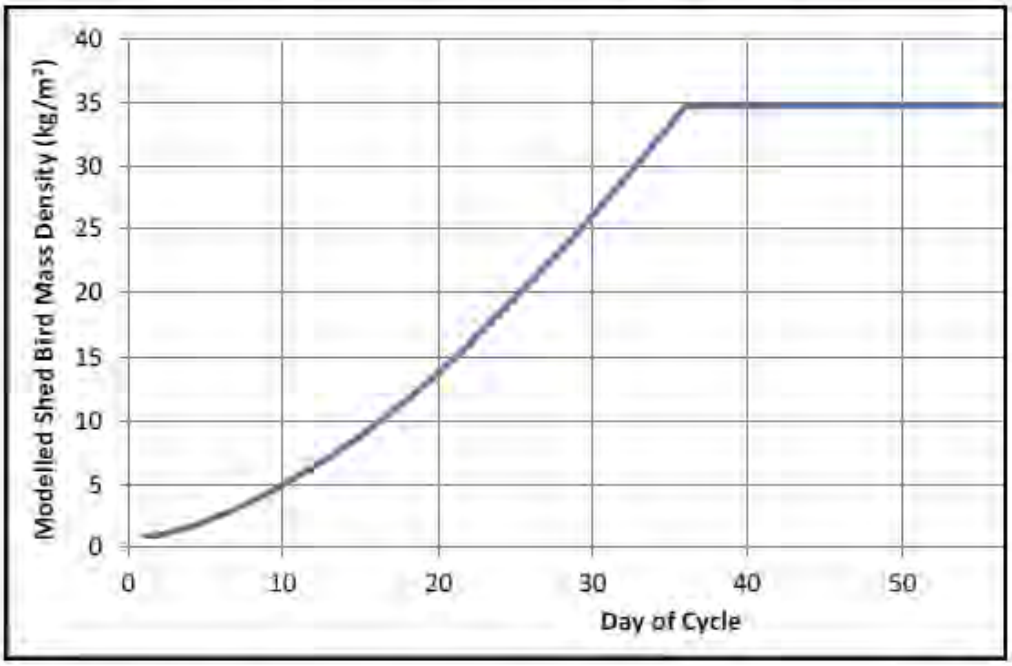


Figure 5 Illustration of modelled shed bird mass density

Ref: Featherston et at (2014) Figure 5[8]. This is based on initial bird placement density of 16 birds/m^2, as per this proposal.

6.2.4 Final ventilation

The application of the PAE Holmes (2011) and Dunlop and Duperouzel[9] (2014) ventilation functions for the proposed Northam poultry farm is shown in Figure 6.

[8] Figure originally from PAE Holmes (2011).

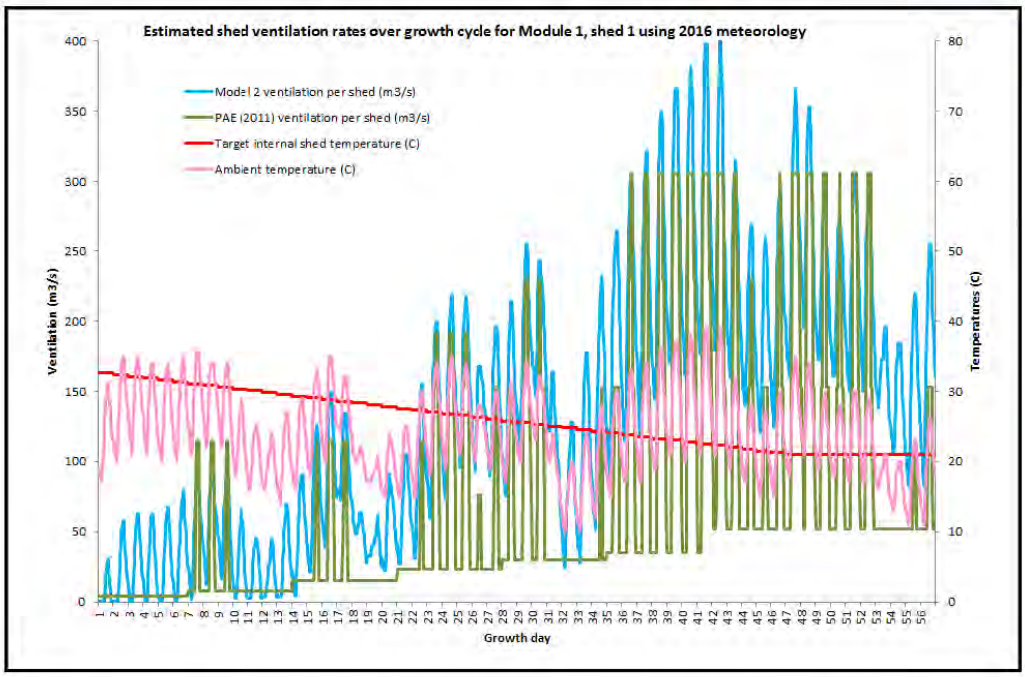


Figure 6 Estimated shed ventilation rates for over growth cycle for Module 1, shed 1 using 2016 meteorology

From Figure 6:

- the overall trend of increasing ventilation demand with growth cycle stage is fairly similar for the PAE Holmes (2011) and both Model 2;
- for the period of highest odour emission rates – week 5 to 6 in this instance, the daily maximum ventilations predicted by PAE Holmes (2011) were lower than that predicted by Model 2;
- the PAE Holmes (2011) ventilations are far more sensitive to typical diurnal ambient temperature variation than the Model 2 predictions. In particular, the PAE Holmes (2011) night-time ventilation rates after week 3 are about one-half of the Model 2 predictions. This implies that the odour emission rates during night-time using the PAE Holmes (2011) approach would be about 75% of that using Model 2 (see Section 6.5).

The lookup table approach of PAE Holmes (2011) appears to have a shortcoming in that it may exaggerate step changes in predictions from the growth cycle and temperature inputs. It is also based on U.S measurements, whereas Model 2 is based on measurements from Australian poultry farms. Considering these issues, Model 2 would probably be the more realistic approach for the Northam proposal however, in order to ensure conservativism of the ultimate ambient odour predictions:

9 For the inputs of the proposed Northam poultry farm sheds and prevailing meteorology over 2016, Model 2 calculated a maximum ventilation up to 142% of the maximum fans capacity. While this could be considered unrealistic, it may also indicate higher ventilation requirements for the Northam poultry farm than the farms measured for the study. Therefore, the results were used conservatively, as subsequently discussed.

- the Model 2 (i.e. highest) ventilation prediction is used to estimate the odour emission rate (i.e. this will be conservative because it will estimate higher odour emission rates and hence higher ambient odour concentrations); and
- the minimum of the Model 2 and PAE Holmes (2011) (i.e. lowest) ventilation prediction is used to estimate plume buoyancy (i.e. this will be conservative because this will produce lower predicted plume rise (when there is plume rise) and hence higher ambient odour concentrations).

6.3 SHED CLEANOUT, DISINFECTION AND REST PERIOD

Excessive odour and dust emissions during the shed clean-outs can be managed by minimising ventilation during this process. Once the shed is cleaned out and disinfected, there will be no odour or dust emissions for the ensuing week whilst it is empty.

For additional conservatism, this absence of emissions was ignored for modelling purposes, and the emissions from each shed were assumed to recommence immediately following day 56.

6.4 SHED PLACEMENT AND HARVESTING ROTATIONS

In reality, the effect of the staggering of placements between the sheds in each module will be to "average" out the total emissions from the module at any point in time.

For modelling however, placements were assumed to be simultaneous across the farm, which will cause the modelled peak odour concentrations at any time in the year to be higher than they otherwise would be.

6.5 ODOUR

The prediction of the odour emission rate (OER) from a shed at any given stage of the growth cycle given in PAE Holmes (2011) and used in Featherstone et al (2014) is:

$$OER = 0.025\ K\ A\ D\ V^{0.5} \qquad \text{Equation 2}$$

where:

OER is the odour emission rate ($ou.m^3/s$).

K = is a scaling factor between 1 and 5, where a value of 1 represents a very well designed and managed shed and management practices particularly aimed at controlling litter moisture.

A is the total shed floor area (m^2).

D is the average shed bird density (kg/m^2).

V is the ventilation rate (m^3/s).

The value of K estimated for the Northam poultry farm is shown in Table 3.

Table 3 Derived K Factor based on proposed design and operation parameters

Factor	Option	Rating	Farm Rating
Shed Design	Best Available Design	0	0
	Retrofitted/Soft Walls, etc	1	
No. Batches Litter Used	1	0	0
	2	0.5	
	3	1	
	>3	2	
Drinking System	Nipple	0	0
	Cup/Bell	2	
Automated Shed Environment Control with Alarm	Yes	0	0
	No	1	
Inspect and replace wet litter daily	Yes	0	0
	No	2	
Max Shed wind speed > 2.5m/s	Yes	0	0
	No	1	
Externally Accredited Management System	Yes	0	0
	No	2	
Litter Type	Shavings/Rice Hulls	0	1
	Saw Dust/Other	1	
Floor Type	Concrete	0	0
	Earth	1	
Foggers Installed	Yes	See Note	No
	No		
Derived value for K (sum of individual ratings)			**1**

Note: Foggers are treated separately. If ambient temperatures rise sufficiently to require foggers (above 35°C) the scaling factor (*K*) is increased by 1 (to a maximum of 6) for the remainder of the cycle.

An illustration of the odour emission rate variation with growth cycle and the influence of prevailing ambient temperature – both diurnal and seasonal, is shown in Figure 7.

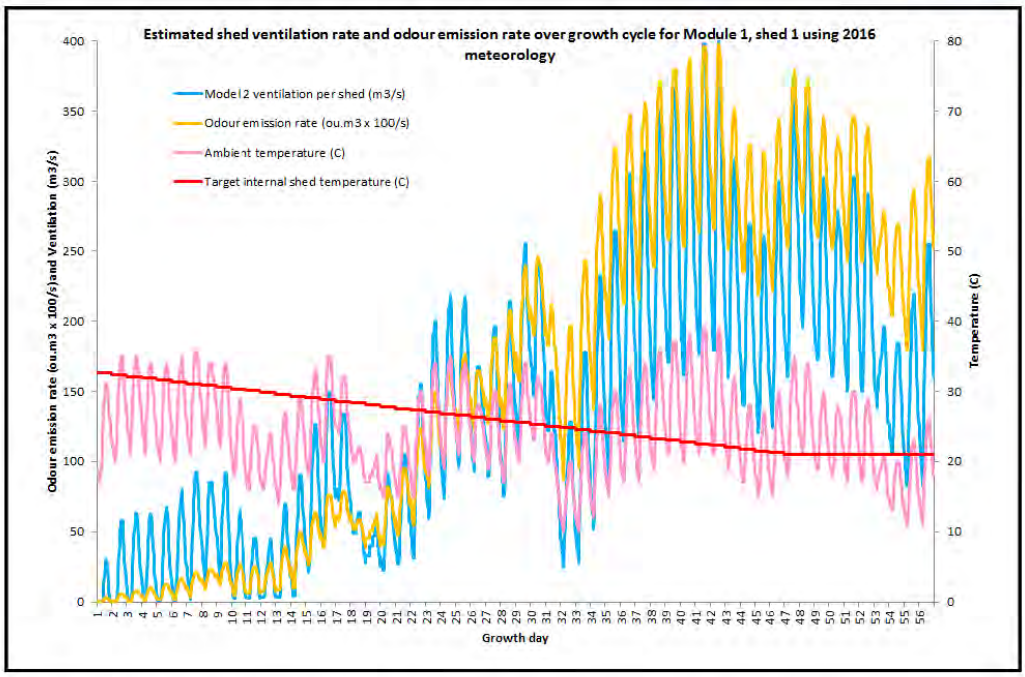


Figure 7 Time series profile of estimated odour emission rate for growth cycle commencing 1 January 2016

The resulting odour emissions statistics for the proposal are summarised in Table 7.

Table 4 Summary statistics of odour emissions for the proposal

Percentile	Odour emission rate per shed over growth cycle commencing 1/1/2016 lasting 56 days(ou.m^3/s)	Odour emission rate per Module over growth cycle commencing 1/1/2016 lasting 56 days(ou.m^3/s)
100	39,749	238,495
99.9	38,943	233,658
99.5	36,613	219,681
99	33,863	203,176
50	16,431	98,583
Average	16,348	98,090

6.6 DUST

Dust emissions were estimated using data in Dunlop (2011), as this report appears to represent the most recent and comprehensive analysis of dust emissions from tunnel ventilation poultry sheds.

The Dunlop (2011) report contained sampled PM10 and PM2.5 from three farms. Dust samples were obtained by drawing air through an isokinetic sampling probe that was inserted into the polyethylene duct fitted at the fan outlet. The isokinetic probe was designed specifically for the project in accordance with AS 4323.2–1995 (Standards Australia, 1995b).

The general conclusion in Dunlop (2011) was "Dust emission rates need to be individually considered along with environmental and in-shed conditions at the time of measurement (for example ambient temperature, ventilation rate, litter moisture content, bird age and total bird live weight)".

The Dunlop (2011) report did not, however, contain an over-riding relationship between these factors and dust emissions.

It was considered important for the Northam study to incorporate the diurnal variation of ventilation in calculating dust emissions, since the juxtaposition of dust emission rates and time of day will affect the dispersion modelling outcome.

Therefore, for this study, the Dunlop (2011) raw data was analysed to determine a relationship between dust emissions and ventilation that could be applied more generally than for the specific farms in the Dunlop (2011) study.

The raw data from the Dunlop (2011) study is presented in their Appendices 18-23. These include concentration measurements along with farm data, production data and ventilation rates.

It is noted that the Dunlop (2011) data contained a single, very high, PM10 and PM2.5 measurement on day 35 from one of the farms sampled. This was considered a true measurement based on an extreme condition at the time.

One of the conclusions in the Dunlop (2011) study was that "When no birds were present in the shed, dust emissions were substantially lower than emissions when birds were present". This implies that dust generation is driven by bird activity, rather than "erosion" of the litter material.

The relationship between PM10 concentration and the ventilation rate normalised against Total Live Weight, derived from the raw Dunlop (2011) data, is shown in Figure 8.

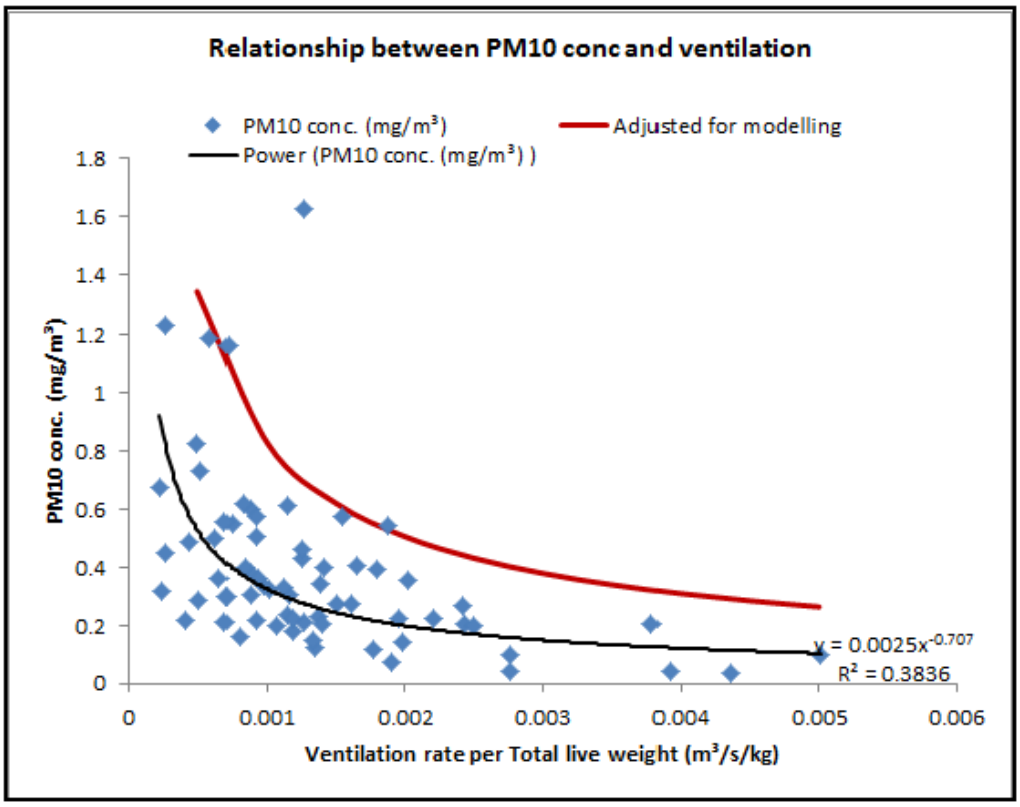


Figure 8 Relationship between PM10 concentration and ventilation

The general decrease in PM10 concentration (with normalised ventilation) is consistent with the expectation that, if dust generation is driven by bird activity and therefore "constant", increasing the ventilation would cause a reduction in the concentrations.

The relatively higher dust generation for a low ventilation per live weight, may correspond to the post-thinning period when there is a cooler target temperature (hence high ventilation) but there is also more space and hence room for bird mobility.

The best fit curve from the actual data was adjusted to derive a function used for modelling that lies beyond most of the maximum data pairs and hence will be conservative.

An illustration of hourly ventilation and PM10 emission rate over growth cycle in single shed is shown in Figure 9. This shows the general increase associated with birth growth overlaying the diurnal pattern associated with shed temperature management.

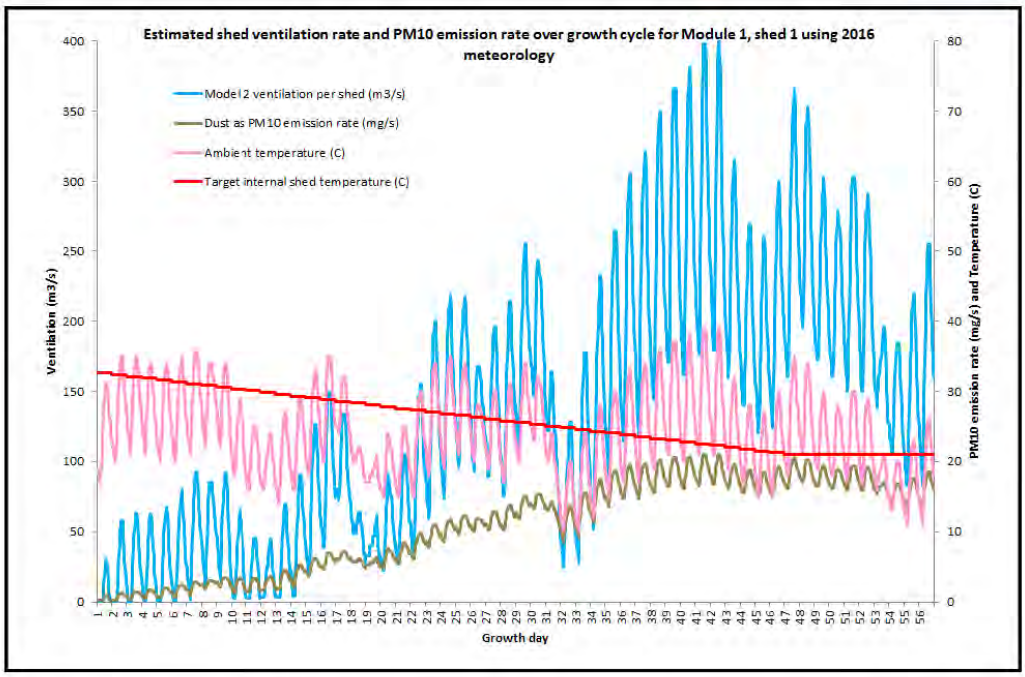


Figure 9 Illustration of hourly ventilation and PM10 emission rate over growth cycle in single shed

6.6.1 Comparison of results

The results of the emissions estimates from this study are compared against the summary data shown from Dunlop (2011) in Table 5. These estimates appear to be generally higher than the Dunlop (2011) measurements[10], noting that the Dunlop (2011) results are specific to the sheds sizes and prevailing meteorology so would not be expected to be identical.

Table 5 Comparison of estimated PM10 emissions per shed

Dust fraction	Reported in Dunlop (2011)		This study based on 2016 local meteorological data (hourly)	
	Full measured range	Range for the majority of data	Minimum and maximum	Average
PM10 conc (mg/m^3)	0.04-1.62	0.1-0.8	0.11-2.6	1.3
PM10 ER (mg/s)	1.8-158.5	5-50	1.2-105	43

A comparison of the PM10 emission rates per 1000 birds sampled in Dunlop (2011) and predicted for Northam over a growth cycle is shown in Figure 10. These show a good trend correspondence as well as being very comparable in magnitude. Again, the emissions rates are dependent on prevailing

[10] Excluding the Dunlop (2011) single very high measurements during the extreme condition.

ambient temperature (and hence ventilation and emissions rate) so would not be expected to be identical.

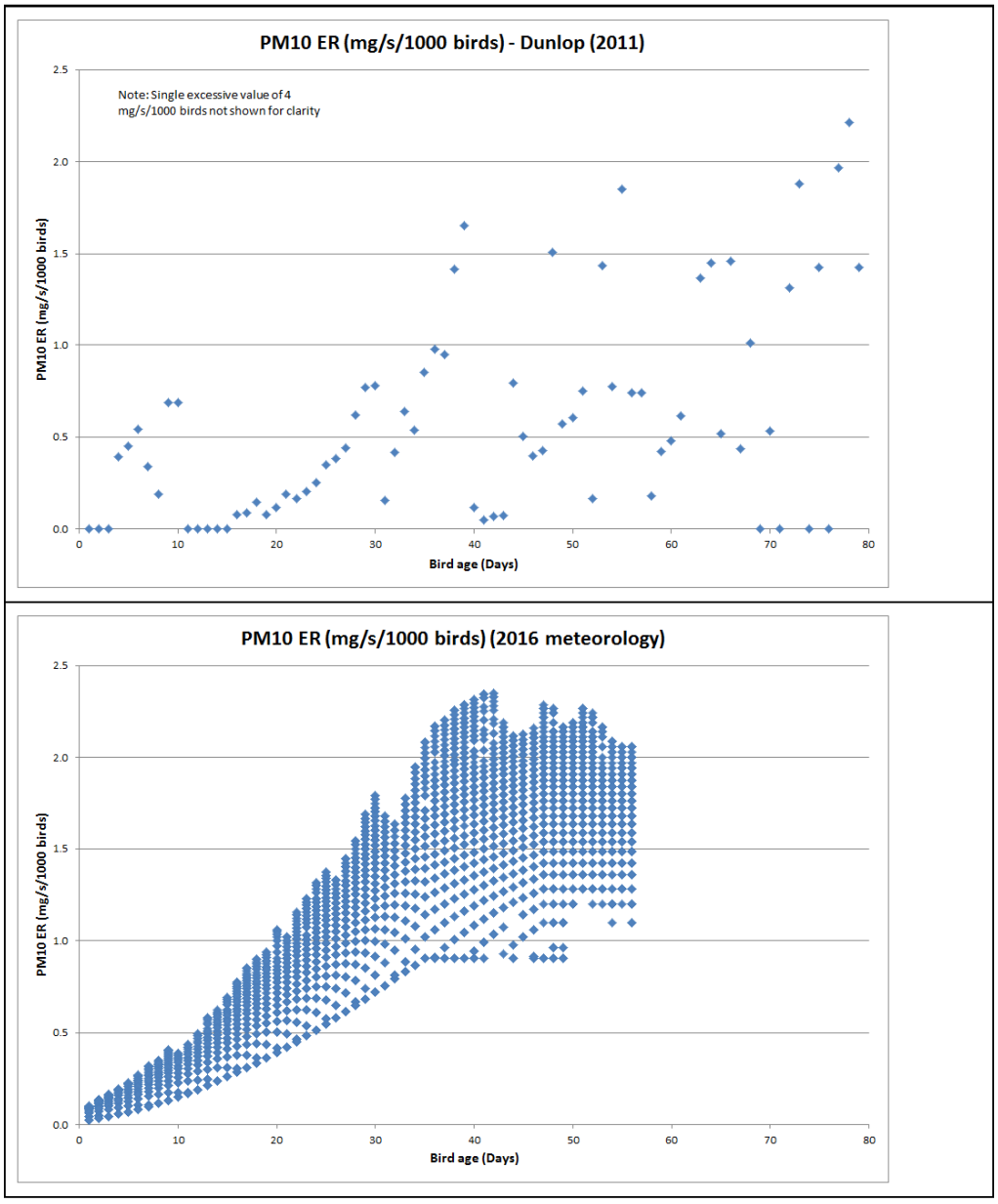


Figure 10 Comparison of PM10 emission rates sampled in Dunlop (2011) and predicted for Northam poultry farm

6.6.2 PM2.5

The average PM2.5:PM10 ratio from the Dunlop (2011) measurements of emissions from the tunnel sheds was 0.19.

From the PM10 and TSP emission ratios in PEL (2015), the highest TSP to PM10 ratio occurs when the birds reach their maximum size. At this time, the PM10:TSP ratio is 0.45. This gives a dust fraction above 10 um as 0.55 of the total dust. Therefore, the total dust emissions as TSP were calculated from 1/0.45=2.22 times the PM10 emissions.

6.6.3 Particle size distribution

The combined particle size distribution used for modelling from the above is shown in Table 6.

Table 6 Particle size fractions

Particle size	Assumed equiv diameter (um)	Fraction composition of TSP
PM30	22	0.55
PM10	6	0.26
PM2.5	1.7	0.19
Total	-	1

For modelling, the tilted plume option was not used in CALPUFF, as this would have very little effect on predicted concentrations and deposition for the very low level emissions from the tunnel sheds.

Particle dry deposition was, however, incorporated in the modelling.

6.6.4 Summary of emissions

The TSP emissions statistics for the proposal are summarised in Table 7.

Table 7 Summary statistics of TSP emissions for the proposal (46 sheds)

Statistic	TSP 1-hourly emission (g/s)
Maximum	12.4
99.9 percentile	12.3
99.5 percentile	11.9
50 percentile	4.5
Average	4.8

6.7 SOURCE REPRESENTATION

6.7.1 Accounting for plume buoyancy

The PAE Holmes (2011) Best Practice Guidance states that "Given the existence of buoyant plume rise in exhaust emissions from meat chicken farms at certain times (Dunlop et al. 2010), it is

preferable that plume rise effects be incorporated into modelling". However, tunnel ventilation forces plumes horizontally from the end walls of sheds, therefore there is no vertical momentum rise, which is normally incorporated into most dispersion models. CALPUFF includes a 'rain hat' switch that sets the vertical momentum of a point source to zero. This neatly accounts for buoyant horizontal releases, allowing buoyancy-induced rise without momentum to be modelled, and was done for this study.

6.7.2 Point source configuration

The PAE Holmes (2011) Best Practice Guidance states that "If poultry sheds are represented as point sources in dispersion models, then it is necessary to incorporate building downwash effects" and also "when modelling with CALPUFF, the recommended approach is to treat each shed as a horizontally directed point source, centred approximately 30 metres out from the endwall fans".

It is, however, not clear from the Guidance how the 30 m offset recommendation was derived. In addition, if this were to be applied, the plume downwash effects which are also recommended to be incorporated into modelling, would not be incorporated, as the downwash algorithms would see this as too far away from the sheds for plume downwash to actually occur. It is also noted that in two more recent poultry farm odours assessment, the 30 m offset to the location of the emission was not applied (PEL 2015a and PEL 2015b).

Considering these issues, the emission source for each farm was configured as follows:

- the combined emissions from all the sheds comprising each module were treated as a single point source located at the fan end (east or west as appropriate) of the north-south centre of the module, with no momentum plume rise;
- since the single point source was positioned for modelling immediately adjacent to the sheds, building wake effects on plume rise could meaningfully be incorporated, which was done using the PRIME algorithm (as preferred for all dispersion models);
- the emission volume was determined from the ventilation rate of a single shed (determined using the constrained ventilation function) – the velocity was adjusted each hour to give the required volume flow for the assumed point source cross-sectional area;

  The above combined assumptions will be conservative because:

  - for winds along the axis of the sheds, the actual plumes from each module will be spread out, as each shed is effectively 26m apart, whereas the model will see these as a single concentrated plume; and
  - for winds perpendicular to the axis of the sheds, in reality, the plumes from each shed will still be offset by 26 m and therefore have more initial dilution than the single concentrated plume seen by the model[11]; also, in reality there is likely to be some plume rise enhancement as the plumes overlap with each other, which would increase the final combined plume rise and reduce downwind concentrations, however again this effect will not be incorporated into the model.
- the emission temperature was set as the Target internal temperature of the shed;

  This will be conservative when the fans are running because the actual internal temperature will be higher than the effective target temperature by about 5 °C (PEL 2015) and hence, will cause the model to under-estimate actual plume rise;

[11] However this effect will be less than for along-axis winds described previously.

- the point source dimensions were defined from the equivalent circular area of the area of the fans on a single shed of 39.2 m^2, therefore the diameter of equivalent point = 7.1 m;
- the point source initial horizontal spread (σ_y) and initial vertical spread (σ_z) were defined from the equivalent square area of the area of the fans on a single shed (as if configuring for a volume source) of 1.56 m; and
- release height of 1.0 m (i.e. height of lowest row of fans).

Some illustrations of the resulting plume rise are provided in Appendix 1.

In summary, the key aspects of the Best Practice Guidance of incorporating plume buoyancy and building downwash, were incorporated in the modelling, however, in a manner which still contained conservatism.

7. DISPERSION MODELLING

7.1 MODEL

The CALPUFF model (Version 6.42) was used for the dispersion modelling of dust from the proposed poultry farm.

This model has been adopted by the U.S. Environmental Protection Agency (US EPA) in its "Guideline of Air Quality Models" as the preferred model for assessing long range transport of pollutants and their impacts on Federal Class I areas and on a case-by-case basis, for certain near-field applications involving complex meteorological conditions. More specifically to this study, the Guideline (amongst other reasons) provides for the use of CALPUFF on a case-by-case basis for air quality estimates involving complex meteorological flow conditions, where steady-state straight-line transport assumptions are inappropriate.

Dust dispersion from a near ground-level source is lowest, and hence downwind dust concentrations highest, during light wind conditions, which alternative Gaussian dispersion models such as AUSPLUME and AERMOD handle poorly.

7.2 TERRAIN DATA

Terrain elevations were derived from the 1 second Shuttle Radar Topography Mission (SRTM) Digital Elevation Models Version 1.0 DEM-H package. The primary SRTM data of ground surface topography has been modified as follows:

- vegetation features have been removed (man-made structures such as urban areas and power line towers have not been treated);
- heights smoothed to reduce noise and improve the representation of surface shape such as slope, aspect and curvature; and

- heights hydrologically enforced with the AusHydro V1.6 (February 2010) 1:250,000 scale watercourse lines, for the consistent delineation of catchments and related hydrological attributes (Geoscience Australia[12]).

The resulting train heights are shown in Figure 11. The Modules tend to be on relatively elevated terrain, which is intended to assist with ventilation of the sheds.

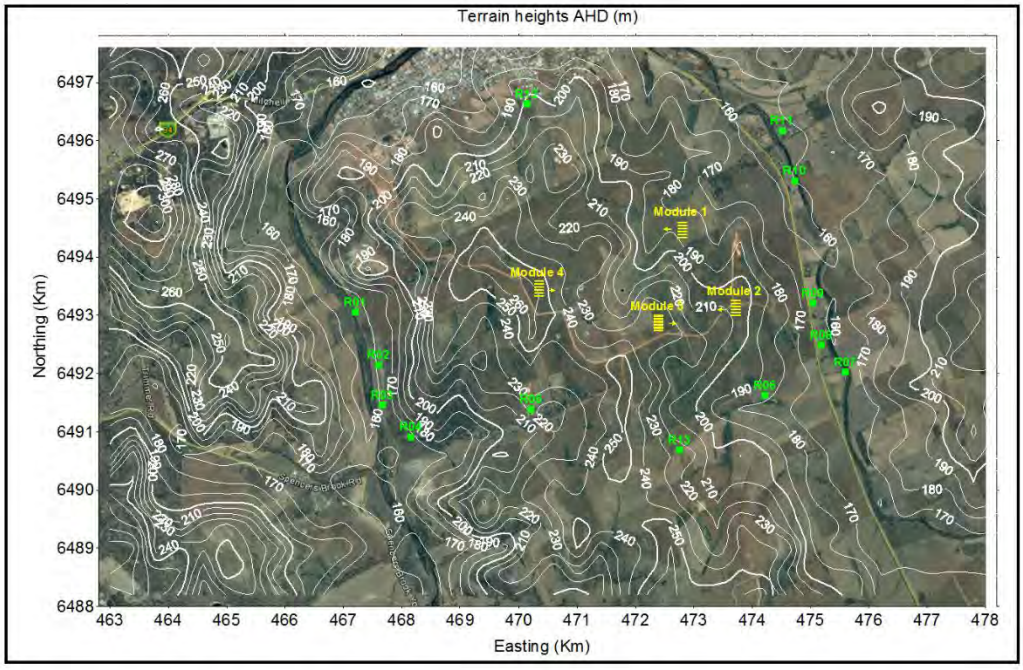


Figure 11 Modelling domain terrain heights

Residences shown in lime green squares.

7.3 LAND USE PARAMETERS

The proposed site has an area of 2,877 hectares and is mostly cleared. The current land uses are sheep grazing and cropping.

The land uses outside the site comprise of:

- rural land to the North;
- rural small holdings and residential land to the east; and
- Muresk Agricultural College to the south west.

[12] From http://www.ga.gov.au/metadata-gateway/metadata/record/gcat_aac46307-fce8-449d-e044-00144fdd4fa6, accessed 11/12/2016.

The land features around the farm are reasonably uniform. The geophysical attributes, which determine turbulence calculations, assigned for the modelling domain, are shown in Table 8.

Table 8 Land use parameters

Land type	Land Use Category	Zo (m)	Albedo	Bowen Ratio	Soil HF Parameter	Leaf Area Ratio
Rangeland (Undisturbed land)	20	0.2	0.15	1	0.15	2
Northam township	10	0.4	0.18	1.5	0.25	1

7.4 ANNUAL METEOROLOGICAL DATA

A meteorological data suitable for modelling was derived for the 2016 year as follows:

- surface wind and rainfall data from the Department of Agriculture's Muresk weather station as 1-hourly averages (data recovery for 2016 was 100%);
- ambient temperature, relative humidity, pressure data and cloud cover data from the CSIRO's TAPM model; and
- upper air profile from the CSIRO's TAPM model.

For use with CALMET, the Muresk wind and TAPL surface data (*.sur) file and upper profile (*.up) file from the TAPM run, were defined as a single pseudo-station at the Muresk site. CALMET subsequently modified the winds based on the local terrain effects, kinematic effects etc.

7.4.1 Winds

The annual wind rose for the 2016 year is shown in Figure 12. Diurnal and seasonal wind roses are shown in Appendix 2.

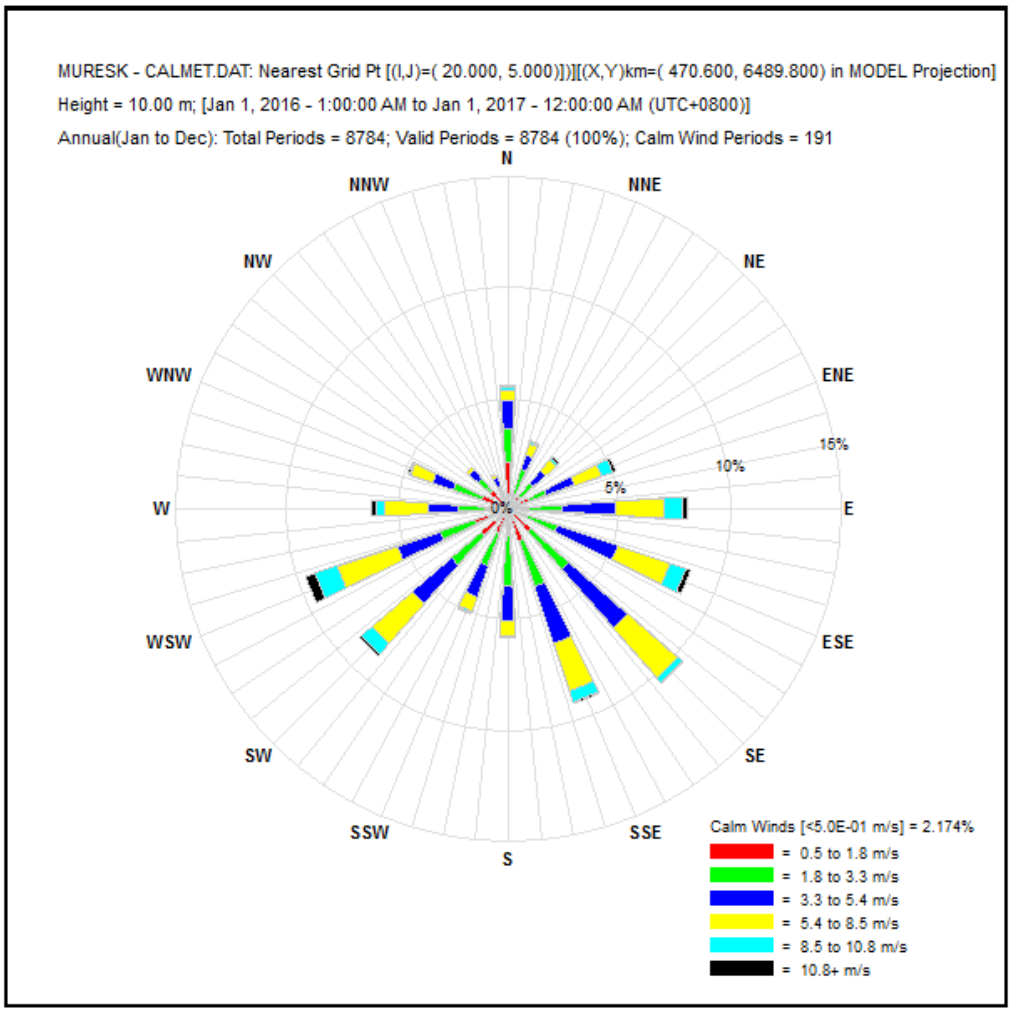


Figure 12 Annual wind rose derived for Muresk for 2016

Annual winds are predominantly from around the E to SSE and SW to WSW.

There is a very diurnal pattern, with light E to ESE winds in the early morning strengthening later in the morning. A weak SSW sea breeze may encroach in the afternoon, which weakens by midnight.

The average wind speed at 10 m above ground level is 4.2 m/s, with 2.2 % of the data below 0.5 m/s (indicative of "calm" conditions).

7.4.2 Stability

Stabilities are discussed in detail in Appendix 3. A summary derived from CALMET's internally derived turbulence parameters, is shown in Table 9.

Table 9 Stability distribution for meteorological data set used for annual modelling

PG Stability Class	Frequency of occurrence (%)
A	3.9
B	9.7
C	15.3
D	29.0
E	18.1
F	24.0

The distribution shows quite high frequencies of neutral (D class) conditions, which is expected for the relatively high wind speeds, and quite high frequencies of extremely stable (F class) conditions which is expected for a rural, inland location which has cold nights.

7.4.3 Terrain effect on surface winds

A check of CALMET's surface wind field for a low wind speed hour, is shown below. There appears to be appropriate steering of surface winds against steep slopes and through gullies.

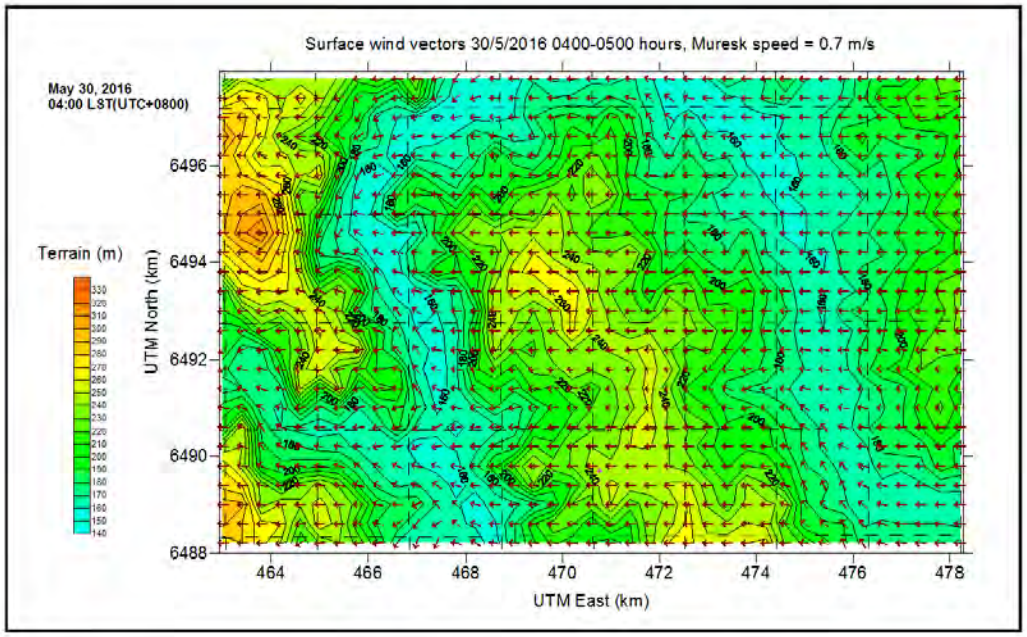


Figure 13 Illustration of terrain induced steering of surface winds

7.5 DISPERSION ASSUMPTIONS

Key assumptions used for modelling included:

- meteorology grid interval of 400 m and pollution interval of 200 m;
- terrain effects included using the CALPUFF scheme;
- dispersion coefficients calculated from micrometeorological parameters; and
- minimum overland sigma-v set to 0.4 m/s in line with recent recommendations for the AERMOD model (this slightly increases predicted concentrations compared to the default sigma-v = 0.5 m/s).

Details of other CALPUFF settings used for modelling emissions from the proposal are shown in Appendix 3.

8. PREDICTED CONCENTRATIONS

8.1 ODOURS

The predicted C99.5,1hr=2.5ou and C99.9,1hr=8ou criteria odour concentrations from the proposal are shown in Figure 14.

Figure 14 Predicted C99.5,1hr=2.5ou and C99.9,1hr=8ou criteria odour concentrations (ou)

Predicted C99.5,1hr=2.5ou contour shown in orange.
Predicted C99.9,1hr=8ou contour shown in pink.

Both forms of the odour criterion are easily met at the nearest surrounding residences.

Furthermore, the criteria are met within the property boundary except for a small extension on the west side of Module 4.

The predicted odour levels at residences as percentage of criteria are shown in Table 10. The maximum odour level as a percentage of the criterion is 56% at residence R09.

Table 10 Predicted odour levels at residences as percentage of criteria

Residence ID	C99.9,1hr=8ou criterion	C99.5,1hr=2.5ou criterion
	Predicted odour levels as percentage of criteria (%)	
R01	19	34
R02	19	29
R03	18	25
R04	14	21
R05	17	30
R06	25	45
R07	24	43
R08	31	49
R09	40	56
R10	29	55
R11	24	44
R12	19	33
R13	16	30

8.2 DUST

The predicted ambient particulate levels are summarised in Table 11.

For the proposed poultry farm excluding background concentrations:

- the maximum predicted concentrations for PM10, which is the particle faction most often assessed as an indicator of dust impacts, is:
  - 8.4% of the background level; and
  - 4.4% of the NEPM criterion; and
- the maximum predicted concentration of any particle fraction does not exceed 4.4 % of its respective criterion.

In summary, the predicted dust levels for all particle size fractions is far below criterion levels.

Table 11 Summary of predicted dust levels against guidelines at sensitive receptor locations

Dust component	Particles as PM10		Particles as PM2.5		Particles as TSP		Deposited Dust
Averaging period[c]	1 day	1 year	1 day	1 year	1 day	1 day	Annual
Criteria concentration (µg/m³)	50	25	25	8	150 (Limit)	90 (Standard [d])	4 g/m²/month as total maximum from all sources; equivalent to
Reference	National Environment Protection Measure for Ambient Air Quality (NEPC 2016)				Kwinana EPP Area C[b]		NSW (2005)
Background concentration (µg/m³)	26.3 (90th percentile)	16.7	11.9 (9.6) (90th percentile) [c]	8.1 (5.6) [d]	52.6	52.6	1
Background concentration data source	DER (2015) – Caversham				TSP concentrations estimated from PM10 measurements using NPI factor of 2 times (NPI 2012)		Estimated for clean rural environment
Background concentration as % of criteria	48	67	42	70	35	58	25
Predicted from proposal							
Units	(ug/m³)	(ug/m³)	(ug/m³)	(ug/m³)	(ug/m³)	(ug/m³)	(g/m²/month)
R01	1.2	0.08	0.52	0.03	2.2	2.2	<0.02
R02	1.6	0.06	0.73	0.03	2.3	2.3	<0.02
R03	1.3	0.05	0.59	0.02	1.7	1.7	<0.02
R04	1.3	0.05	0.61	0.02	1.9	1.9	<0.02
R05	1.5	0.08	0.67	0.04	2.1	2.1	<0.02
R06	1.3	0.11	0.58	0.05	2.4	2.4	<0.02
R07	1.4	0.10	0.61	0.04	2.4	2.4	<0.02
R08	1.8	0.13	0.78	0.06	3.0	3.0	<0.02
R09	2.2	0.15	0.95	0.07	4.0	4.0	<0.02
R10	1.8	0.17	0.79	0.08	3.4	3.4	<0.02
R11	1.3	0.15	0.56	0.07	2.1	2.1	<0.02
R12	1.2	0.14	0.52	0.06	2.1	2.1	<0.02
R13	0.9	0.08	0.41	0.04	1.8	1.8	<0.02
Percent of criteria	(%)	(%)	(%)	(%)	(%)	(%)	(%)
R01	2	0	2	0	1	2	<1
R02	3	0	3	0	2	3	<1
R03	3	0	2	0	1	2	<1
R04	3	0	2	0	1	2	<1
R05	3	0	3	0	1	2	<1
R06	3	0	2	1	2	3	<1
R07	3	0	2	1	2	3	<1
R08	4	1	3	1	2	3	<1
R09	4	1	4	1	3	4	<1
R10	4	1	3	1	2	4	<1
R11	3	1	2	1	1	2	<1
R12	2	1	2	1	1	2	<1
R13	2	0	2	0	1	2	<1

Dust component	Particles as PM10		Particles as PM2.5		Particles as TSP		Deposited Dust
Averaging period[2]	1 day	1 year	1 day	1 year	1 day	1 day	Annual
Criteria concentration (µg/m³)	50	25	25	8	150 (Limit)	90 (Standard [3])	4 g/m²/month as total maximum from all sources, equivalent to
Reference	National Environment Protection Measure for Ambient Air Quality (NEPC 2016)				Kwinana EPP Area C[1]		NSW (2005)
Background concentration (µg/m³)	26.3 (90th percentile)	16.7	11.9 (9.6) (90th percentile) [4]	8.1 (5.6) [4]	52.6	52.6	1
Background concentration data source	DER (2015) – Caversham				TSP concentrations estimated from PM10 measurements using NPI factor of 2 times (NPI 2012)		Estimated for clean rural environment
Background concentration as % of criteria	48	67	42	70	35	58	25
Predicted from proposal including background							
Units	(ug/m³)	(ug/m³)	(ug/m³)	(ug/m³)	(ug/m³)	(ug/m³)	(g/m²/month)
R01	27.5	16.7	10.1	5.6	54.8	54.8	<1.02
R02	27.9	16.7	10.3	5.6	54.9	54.9	<1.02
R03	27.5	16.7	10.1	5.6	54.3	54.3	<1.02
R04	27.6	16.7	10.2	5.6	54.5	54.5	<1.02
R05	27.7	16.7	10.2	5.6	54.7	54.7	<1.02
R06	27.6	16.8	10.1	5.6	55.0	55.0	<1.02
R07	27.6	16.8	10.2	5.6	55.0	55.0	<1.02
R08	28.0	16.8	10.3	5.6	55.6	55.6	<1.02
R09	28.4	16.8	10.5	5.6	56.6	56.6	<1.02
R10	28.1	16.8	10.3	5.6	56.0	56.0	<1.02
R11	27.5	16.8	10.1	5.6	54.7	54.7	<1.02
R12	27.4	16.8	10.1	5.	54.7	54.7	<1.02
R13	27.2	16.7	10.0	5.64	54.4	54.4	<1.02
Percent of criteria	(%)	(%)	(%)	(%)	(%)	(%)	(%)
R01	55	67	40	70	37	61	<1
R02	56	67	41	70	37	61	<1
R03	55	67	41	70	36	60	<1
R04	55	67	41	70	36	61	<1
R05	56	67	41	70	37	61	<1
R06	55	67	41	71	37	61	<1
R07	55	67	41	71	37	61	<1
R08	56	67	42	71	37	62	<1
R09	57	67	42	71	38	63	<1
R10	56	67	42	71	37	62	<1
R11	55	67	41	71	37	61	<1
R12	55	67	40	71	36	61	<1
R13	54	67	40	70	36	60	<1

[3] Standard is "desirable not to be exceeded".

[1] Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1992 and Environmental Protection (Kwinana) (Atmospheric Waste) Regulations 1992.

[2] Averaging times defined as calendar periods.

[4] The value in brackets is the corrected value after the revised correction provided in PEL (2013) and used in this comparison.

The extent of the predicted maximum 24-hour average PM10 concentrations from the proposal is shown in Figure 15. The 5 µg/m^3 contour, which is 10% of the NEPM criterion, lies almost completely within the site boundary.

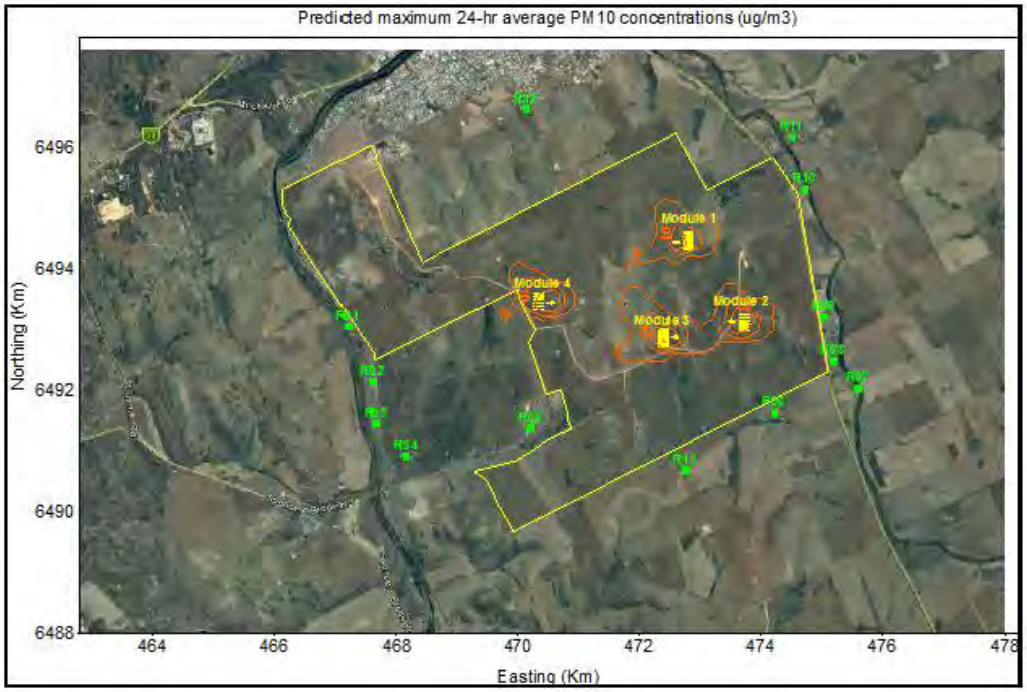


Figure 15 Predicted maximum 24-hour average PM10 concentrations from proposal

NEPM criterion = 50 µg/m^3. (This is not shown as it is not exceeded anywhere).
Background levels not included – allow 26.3 µg/m^3 for background.

9. SUMMARY

This report presents an assessment of the predicted odour and dust levels from a proposed poultry farm at Northam.

Dispersion modelling was undertaken using the CALPUFF model and 2016 meteorological data sourced primarily from the Department of Agriculture's Muresk site.

A number of conservative assumptions were made in the modelling, including:

- using higher estimates of ventilation rates for the estimation of odour and dust emissions;
- estimating the dust emissions using generally the highest measurements reported in other studies of poultry farm dust emissions; and
- parameterisation the emission sources to most underestimates plume buoyancy and over-estimate building downwash both of will lead to over-estimates of odour and dust concentrations.

The results show that:

- the maximum predicted odour level at any residence as a percentage of the criterion is 56%;
- the maximum predicted concentration of any dust size fraction does not exceed 4.4 % of its respective criterion.

Therefore, the proposal meets the relevant criteria for acceptable odour and dust impacts.

10. REFERENCES

Aurora Environmental, 2017, "Avon Valley Farm - Free Range Broiler Poultry Farm - Shire of Northam, WA - Environmental Assessment and Management Plan", 1 May 2017.

Department of Environment (DEP), 2006, "Air Quality Modelling Guidance Notes", March 2006.

DER, 2016, "2015 Western Australia Air Monitoring Report - Written to comply with the National Environment Protection (Ambient Air Quality) Measure", August 2016.

Dunlop M. and David Duperouzel, D., 2014, "Monitoring mechanical ventilation rates in poultry buildings - For the application of odour and dust control technologies", RIRDC Publication No. 13/024 RIRDC Project No. PRJ-000599, January 2014.

Dunlop, 2011, "Project No: 04-45 - Dust and odour emissions from meat chicken sheds", Australian Poultry CRC Final Report Program (3B) Project No: 04-45, 25 September 2011.

Featherston, D., Pollock, T., and Power, M., 2014, "Odour Dispersion Modelling of Meat Chicken Farms - Comparison of AERMOD, AUSPLUME and CALPUFF models", RIRDC Publication No 14/102 RIRDC Project No PRJ-009544, October 2014.

Pacific Environment Ltd (PEL), 2015a, "Air Quality Impact Assessment – Euroley Poultry Project", 22 April 2015.

Pacific Environment Ltd (PEL), 2015b, Odour And Dust Assessment – Tabbita Poultry Complex – Farm 1 And 2, Job ID. 7856, 14 May 2015.

PAE Holmes, 2011, "Best Practice Guidance For The Queensland Poultry Industry – Plume Dispersion Modelling And Meteorological Processing", Job No: 5324, 20 May 2011.

Ross, 2014, "Ross Broiler Management Handbook".

TRC Environmental Corporation, 2011, "CALPUFF Modeling System Version 6 User Instructions", April 2011.

11. GLOSSARY OF TERMS

"°" means degrees of angle.

"°C" means degrees Celsius.

"µg/m^3" means micrograms per cubic metre of air.

"AERMOD" means the US EPA approved air dispersion model AERMOD.

"Ambient Air NEPM" means "National Environment Protection (Ambient Air Quality) Measure".

"BoM" means Bureau of Meteorology.

"CALPUFF" means "CALifornian PUFF Model" – a US EPA approved air dispersion model.

"DER", "DEC", "DoE", "DEP" means Department of Environmental Regulation (WA), formally Department of Environment and Conservation, formerly Department of Environment, formerly Department of Environmental Protection.

"EPA" means Environmental Protection Authority (WA).

"hr" means hour.

"km" means kilometres.

"m/s" means metres per second.

"m" means metres.

"m^2" means square metres.

"m^3/hr" means cubic metres per hour.

"m^3/s" means cubic metres per second.

"m^3" means cubic metres.

"mg/m^3" means milligrams per cubic metre.

"min" means minute.

"ou.m^3/s" means odour units multiplied by the associated volumetric flow with units of m^3/s to express the emission rate of odour from a source. When used as the emissions term in a dispersion model, the predicted ambient concentrations per cubic metre cause the volume units to cancel out to give odour units (the dimensionless ratio of the odour concentration to the odour threshold concentration).

"ou" means odour units. An odour unit is a dimensionless ratio defined as the volume which an odorous sample would occupy when diluted to the odour detection threshold, divided by the volume of the odorous sample.

"percentile" means the division of a distribution into 100 groups having equal frequencies.

"PG" means Pasquill Gifford classification of atmospheric stability. This defines six categories of atmospheric stability from "A" class – moderately unstable to "F" class – moderately stable.

"PM_{10}" means inert particles each having an equivalent aerodynamic diameter of less than 10 micrometres.

"s" means seconds.

"t/yr" means tonnes per year.

"TAPM" means The Air Pollution Model.

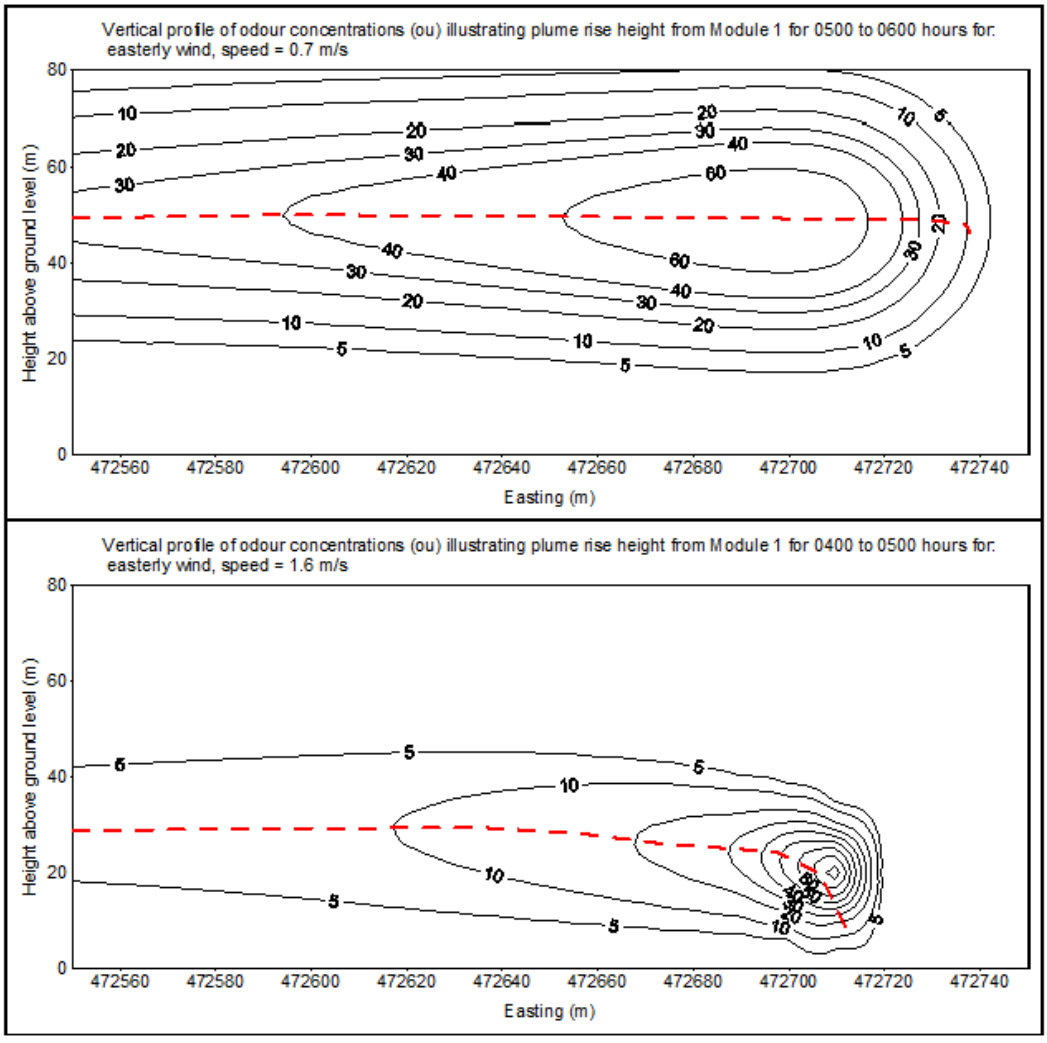
"TEOM" means Tapered Elemental Oscillating Microbalance.

"TSP" means Total Suspended Particulates.

"US EPA" means United States Environmental Protection Agency.

Appendix 1 Analysis of plume rise

As a check on plume rise, the final plume rise heights were determined for easterly winds of various speeds as shown in Figure 16.



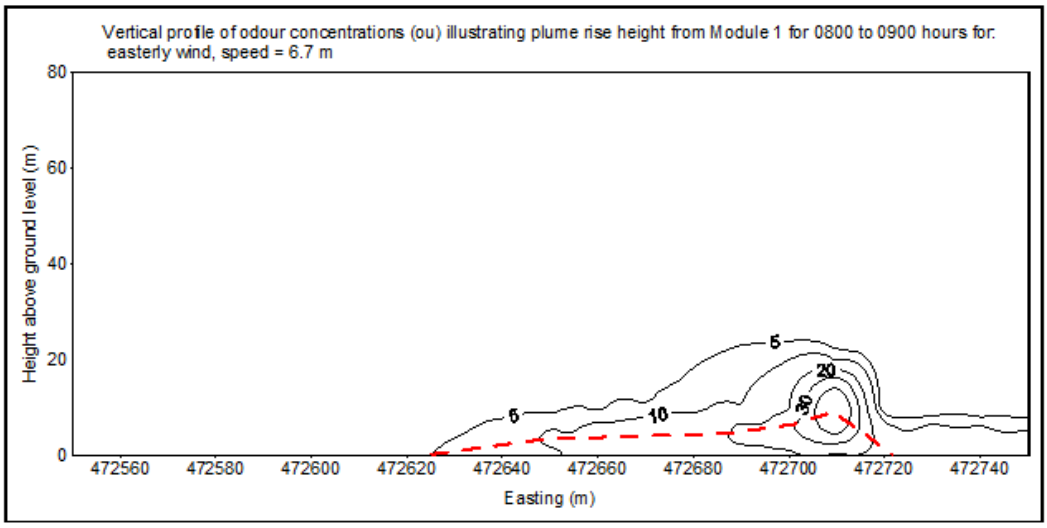


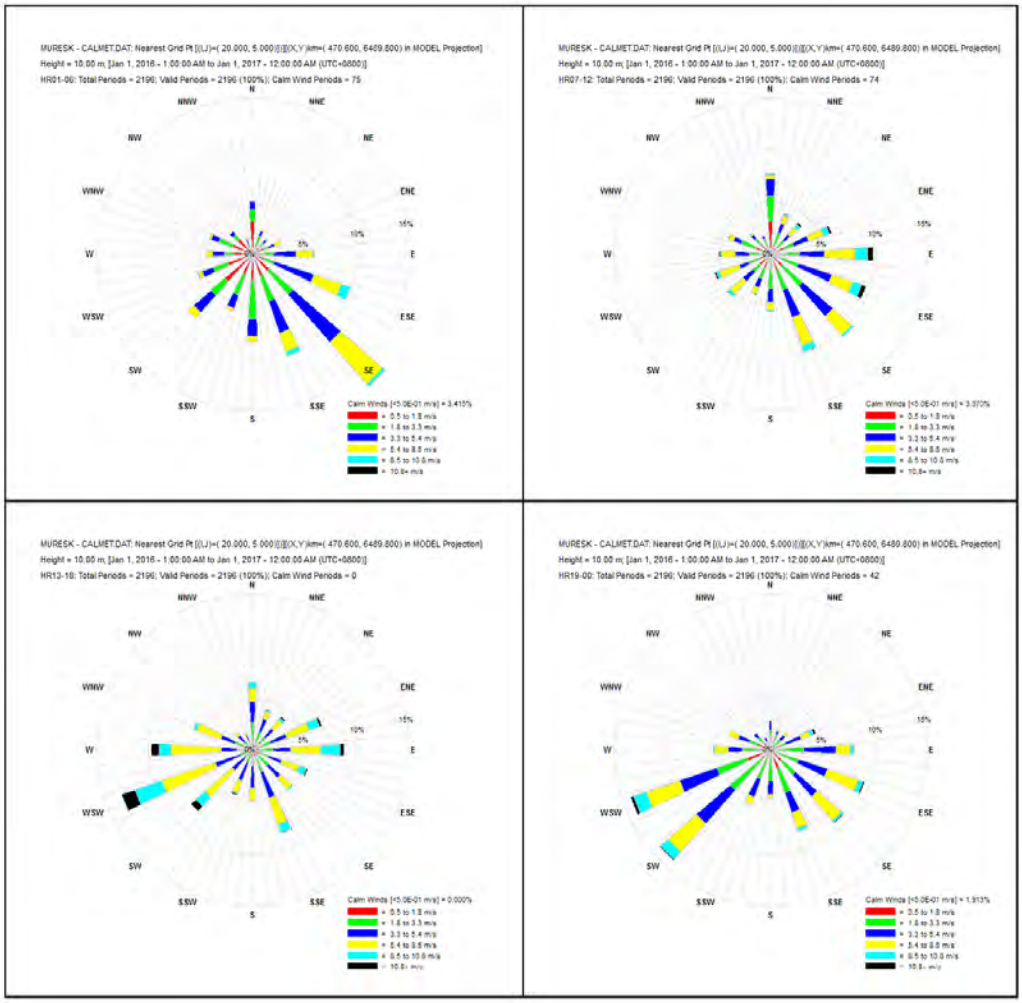
Figure 16 Predicted plume rise for Module 1

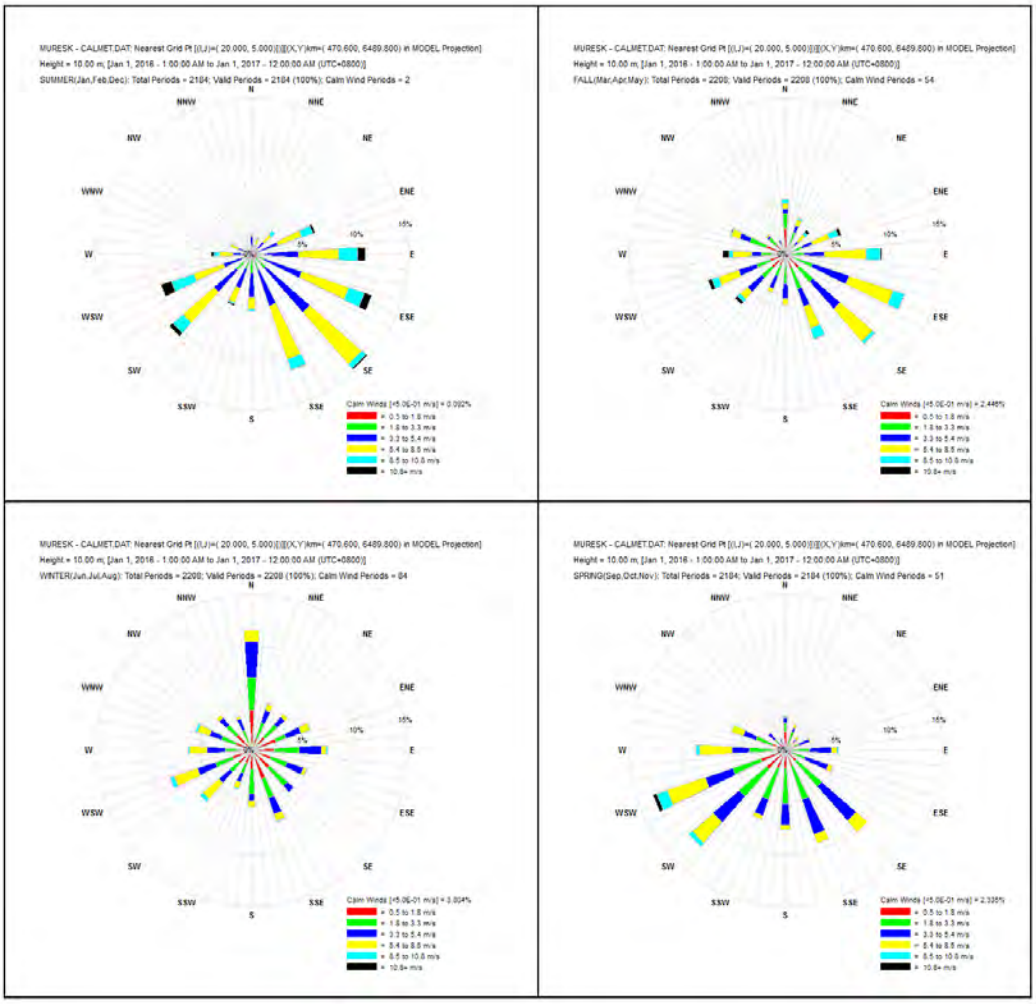
Then final rises were approximately:

Wind speed	Growth cycle day	Final plume height
0.7 m/s	40	50 m
1.6 m/s	34	39 m
6.7 m/s	39	0 m (plume is downwashed to ground level)

While buoyancies will differ somewhat in each case, the rise heights appear to be reasonable.

Appendix 2 Diurnal and seasonal wind roses wind roses for Muresk 2016




MURESK - CALMET.DAT: Nearest Grid Pt [(I,J)=(20.000, 5.000)][(X,Y)km=(470.600, 6489.800)] in MODEL Projection]
Height = 10.00 m; [Jan 1, 2016 - 1:00:00 AM to Jan 1, 2017 - 12:00:00 AM (UTC+0800)]
SUMMER(Jan,Feb,Dec): Total Periods = 2184; Valid Periods = 2184 (100%); Calm Wind Periods = 2
FALL(Mar,Apr,May): Total Periods = 2208; Valid Periods = 2208 (100%); Calm Wind Periods = 54
WINTER(Jun,Jul,Aug): Total Periods = 2208; Valid Periods = 2208 (100%); Calm Wind Periods = 64
SPRING(Sep,Oct,Nov): Total Periods = 2184; Valid Periods = 2184 (100%); Calm Wind Periods = 51
N
NNW
NNE
NW
NE
WNW
ENE
W
E
WSW
ESE
SW
SE
SSW
S
SSE
5%
10%
15%

Appendix 3 Stability distributions

Atmospheric turbulence is an important factor in plume dispersion. Turbulence acts to increase the cross-sectional area of the plume due to random motions, thus diluting or diffusing a plume. As turbulence increases, the rate of plume dilution or diffusion increases. Weak turbulence limits plume diffusion and is a critical factor in causing high plume concentrations downwind of a source, particularly when combined with very low wind speeds.

Pasquil (1961) introduced a method whereby mechanical and buoyant turbulence were incorporated into atmospheric stability – categorised by six classes "A" to "F".

Class A is described as highly unstable and occurs in association with strong surface heating and light winds, leading to intense convective turbulence and much enhanced plume dilution. At the other extreme, class F denotes very stable conditions associated with strong temperature inversions and light winds, which commonly occur under clear skies at night and in early mornings. Under these conditions plumes can remain relatively undiluted for considerable distances downwind. Intermediate stability classes grade from moderately unstable (B), through neutral (D) to slightly stable (E). Whilst classes A and F are strongly associated with clear skies, class D is linked to windy and/or cloudy weather, and short periods around sunset and sunrise when surface heating or cooling is small. As a general rule, unstable (or convective) conditions dominate during the daytime and stable flows are dominant at night. This diurnal pattern is most pronounced when there is relatively little cloud cover and light to moderate winds.

Based on the assumption that the concentration distributions in a plume follow a Gaussian profile, Gifford (1960) calculated dispersion coefficients describing the decrease in plume concentrations with distance. These relationships subsequently become known as "PG" curves.

The annual CALMET predicted stability distributions based on the Golder (1972) relationship (based on turbulence parameters) is shown in Table 12.

Table 12 Stability distribution for meteorological data set used for annual modelling

PG class	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW
A	1.01	0.68	0.51	0.69	0.57	0.41	0.55	0.75	0.56	0.49	0.32	0.36	0.49	0.59	0.31	0.16
B	1.23	0.65	0.44	0.96	1.24	1.23	1.15	1.25	0.91	0.73	0.61	0.72	0.63	0.60	0.42	0.26
C	0.73	0.57	0.55	1.15	1.91	1.14	0.94	1.46	0.47	0.47	1.31	1.79	1.23	0.68	0.19	0.08
D	0.49	0.27	0.35	0.71	1.06	1.24	1.18	1.42	0.50	0.49	1.34	2.13	1.34	0.56	0.24	0.18
E	0.31	0.22	0.25	0.64	1.50	2.36	3.15	1.53	0.55	0.50	1.80	1.63	1.04	0.72	0.20	0.16
F	2.12	1.20	0.93	1.08	1.97	2.32	3.59	3.02	2.91	2.50	3.71	3.11	1.79	1.64	1.33	0.57
Tots	**5.89**	**3.59**	**3.04**	**5.23**	**8.25**	**8.70**	**10.56**	**9.43**	**5.90**	**5.18**	**9.10**	**9.73**	**6.51**	**4.79**	**2.70**	**1.41**

For low-buoyancy near-surface releases, the distribution of F class is the most important issue for far-field dispersion. Therefore, dispersion will be poorest for night-time winds from the SE to WSW.

References

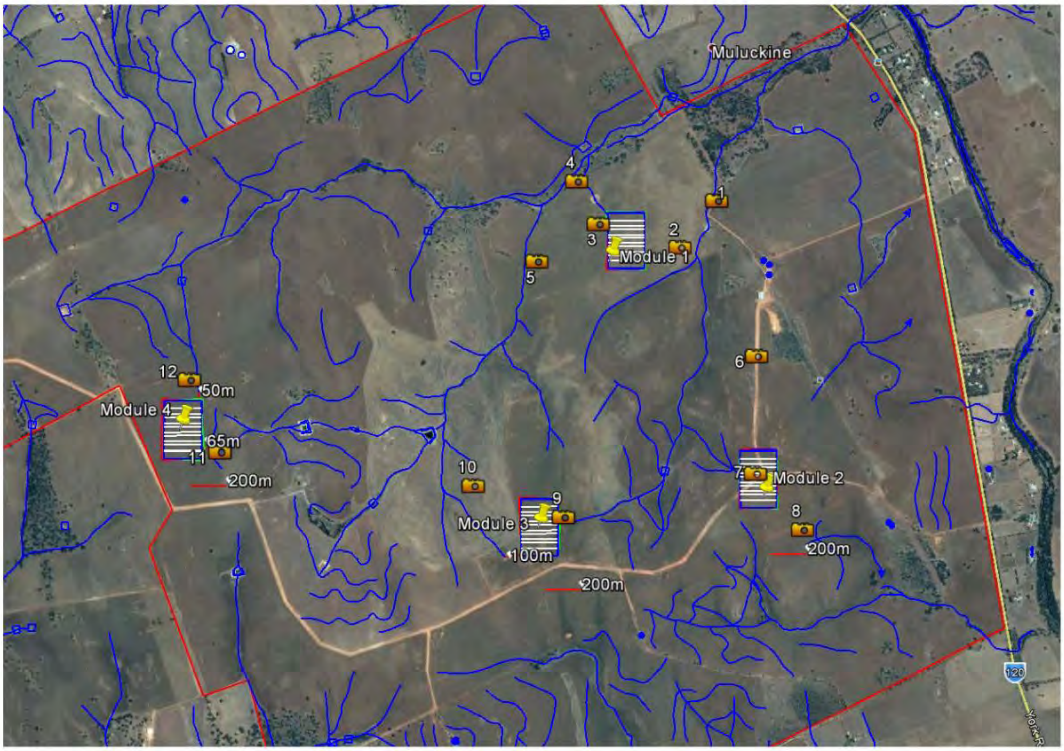
Pasquill, F., 1961, "The estimation of the dispersion of windborne material", *Meteorol. Mag.*, 90 (1063), 33-49.

Gifford, F.A., 1960, "Atmospheric Dispersion calculations Using the Generalized Gaussian Plume Model", *Nuclear Safety*, 2(2):56-59,67-68.

Attachment 6

Avon Valley Farm
Response to Queries and Submissions

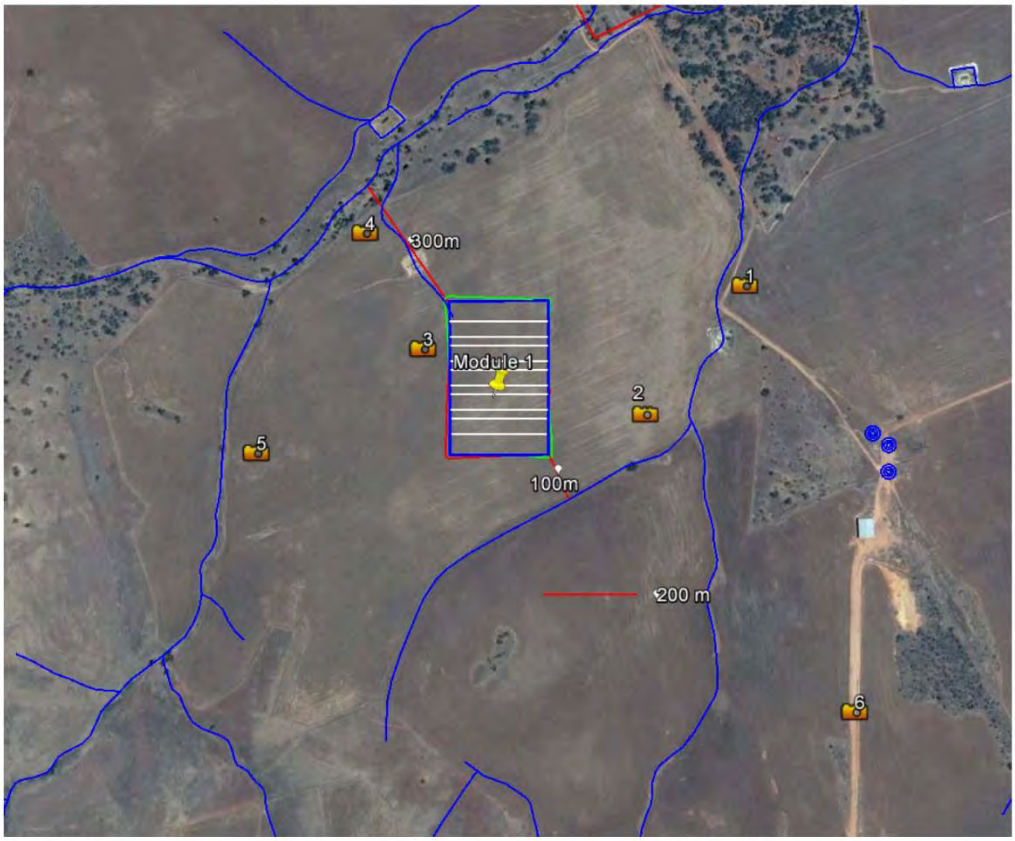
ATTACHMENT 3: ANALYSIS OF DOW DATASET - HYDROGRAPHY LINEAR (DOE 1/2/04) AND ONSITE CONDITIONS



Overall layout of Poultry modules with DOW Hydrography data set as provided by Landgate. Dataset also adds constructed drainage (in addition to DoW data).

Avon Valley Farm
Response to Queries and Submissions

Module 1



Module 1 - Location 1

Photo looking west. The area shown on the DoW dataset as a watercourse does not constitute a significant water way that would warrant the application of a 200m buffer.

Module 1 – Location 2

Photo looking east. The area marked as a waterway comprises a paddock, not a significant waterway. This minor watercourse does not require a 200m buffer.

Photo looking south. The area marked as a waterway comprises a paddock, not a significant waterway. This minor watercourse does not require a 200m buffer.

Photo looking south west. No defined water course apparent at this location.

Module 1 – Location 3

Photo looking north. The waterway shown in the DoW dataset would be in the foreground. However, it is not defined and is not considered significant in terms of requiring a 200m buffer. The tree line in the background is associated with a watercourse that we would classify as requiring a 200m buffer. It is 300m from the module boundary and therefore meets the requirement of a 200m buffer.

Avon Valley Farm
Response to Queries and Submissions

Module 1 – Location 4

Photo looking north. The water course mapped in the DoW dataset is associated with the tree line. This watercourse is 300m from the module boundary.

Photo looking east – No evidence of a watercourse. The site comprises a ploughed paddock but is mapped as a watercourse in the DoW dataset. This area does not warrant a 200m buffer.

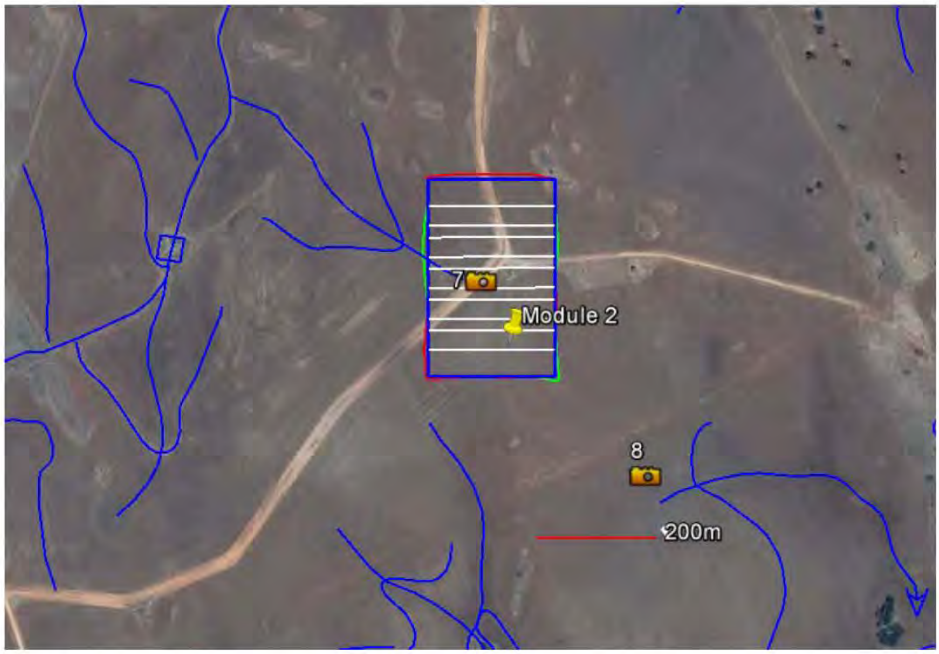
Module 1 – Location 5

Photo looking south west. While this area forms a broad valley floor, in our opinion, it does not constitute a water course. Note: This area is 450m from the boundary of module 1.

Module 1 – Location 6

Photo looking north west. The area is a ploughed paddock and in our opinion, does not constitute a water course that would require a 200m buffer. Modules 2 and 3 are further uphill from this area.

Module 2



Module 2 – Location 7

Photo looking north west. The DoW dataset indicates that the area in the foreground constitutes a watercourse. However, the area is a ploughed paddock and does not warrant the incorporation of a 200m buffer.

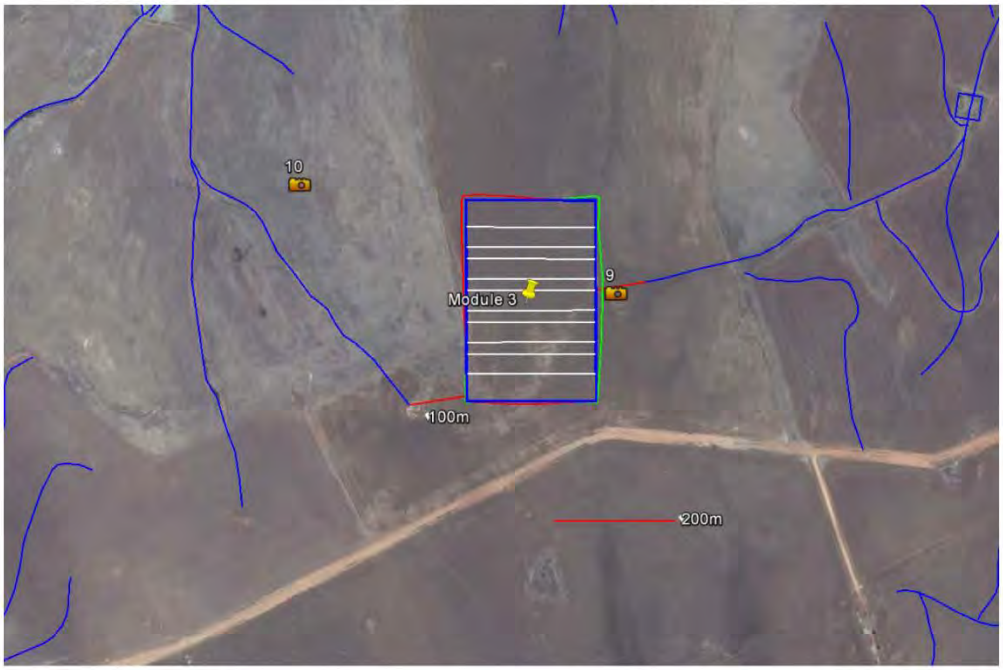
Module 2 – Location 8

Photo looking south east. Drainage line depicted in DoW dataset is a valley floor. Low risk of surface water flow.

Photo looking south. Drainage line depicted in DoW dataset is a valley floor. Low risk of surface water flow.

Avon Valley Farm
Response to Queries and Submissions

Module 3



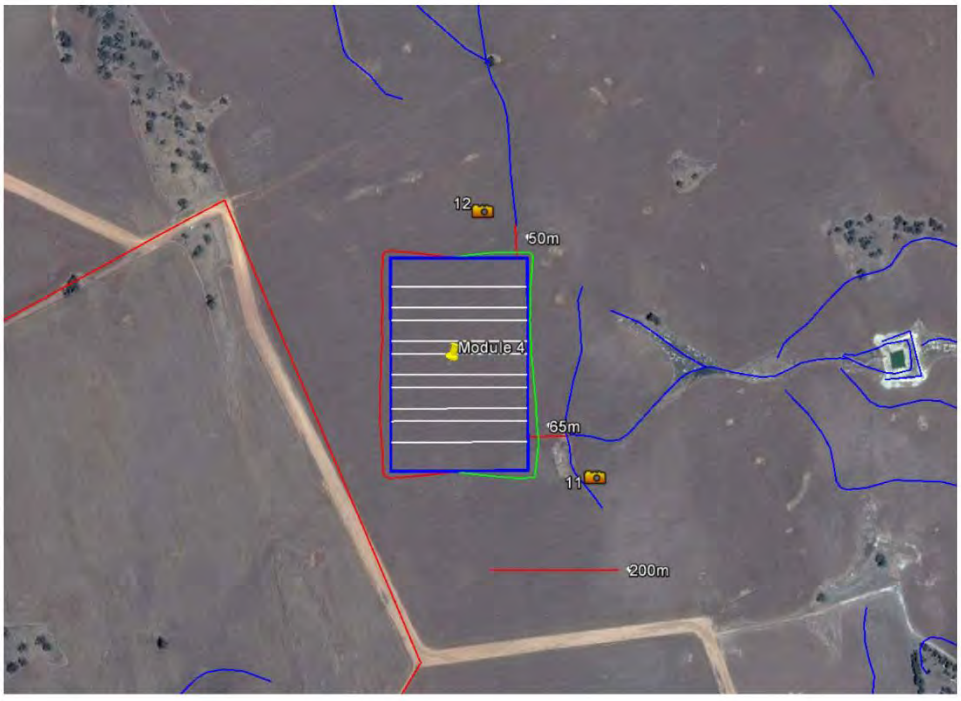
Module 3 – Location 9

Photo looking east. The area in the foreground is mapped in the DoW dataset as a watercourse. This area is a ploughed paddock and does not warrant the incorporation of a 200m buffer.

Module 3 – Location 10

Photo looking west. This area is mapped as a DoW watercourse. It is poorly defined and unlikely to experience surface water flow and does not warrant the incorporation of a 200m buffer.

Module 4



Module 4 – Location 11

Photo looking north. This area is mapped as a DoW watercourse. There is no defined watercourse that is likely to generate surface water runoff. This area does not warrant a 200m buffer.

Photo looking north east. This area is mapped as a DoW watercourse. There is no defined watercourse that is likely to generate surface water runoff. This area does not warrant a 200m buffer.

Module 4 – Location 12

Photo looking north east. The area mapped as a DoW watercourse indicates a broad valley floor that comprises a ploughed paddock with minimal risk of generating surface water flow. This area does not warrant the incorporate of a 200m buffer.

Module 4 – Location 12

Photo looking north. Area to right of photo corresponds with broad valley floor. Risk of surface water flow is minimal. This area does not warrant the incorporation of a 200m buffer.

Attachment 7

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
1	Woodley Farm Drive, Northam Resident Received 19th April 2017	We are concerned in the regard that the smell from the farm will be causing breathing difficulties for asthma. This will also devalue the housing prices. We have lived close to a farm and we know how bad it can be.	Odour, Health Impacts, Property Values	**Response 1: Planning To Minimise Noise, Dust and Odour Risks** The proposed poultry operations will meet the Western Australia guidelines and policies for best practice management and separation distances. These include: • *Statement of Planning Policy No. 4.3, Poultry Farms Policy* (Western Australian Planning Commission; WAPC, 2003). • *Draft Guidance Statement – Separation Distances (DER, 2015).* • *Environmental Code of Practice for Poultry Farms in Western Australia (WABGA et al., 2004).* • *Health Act 1911.* • *National Water Biosecurity Manual, Poultry Production (Department of Agriculture, Fisheries and Forestry, 2009a).* In addition, bird management will be undertaken in accordance with guidance provided by the Royal Society for the Prevention of Cruelty to Animals (RSPCA) in *Meat Chickens,*	**Odour** An odour management plan will be implemented at all times. The proponent has supplied odour modelling that demonstrates that odour is unlikely to be detected by any residential dwelling. **Health Risk** The proponent is required to comply with all applicable legislation relating to health and biosecurity of humans and birds. The application has been referred to the Department of Health who have advised no objection to the proposal and have not identified any potential hazards to human health. **Property Values** Perceived impacts upon property value and rates are not detailed as a matter to be considered when making a determination in regard to a development application under

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
				RSPCA Approved Farming Scheme Standards (RSPCA, 2013). The poultry farm comprises a legitimate rural land use which has demonstrably adequate separation distances and will be managed using best practice methodology.	Clause 67 of the Deemed Provisions for Local Planning Schemes. The State Administrative Tribunal recently concluded that an opinion about an expected decline in property values is not a relevant consideration. Refer to the Tribunal's Decisions Database (http://decisions.justice.wa.gov.au/SAT/SATdcsn.nsf/main.xsp) by typing in 'Optus Mobile Pty Ltd and City of Swan' in the 'Quick Search' function, and then go to '[2016] WASAT 137'. Refer par. 36. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
2	Roediger Drive, Northam Resident Received 22nd April 2017	We have invested our life savings in our property to raise our children in a safe and happy environment. We strongly oppose this development as it will devalue our already diminishing investment in our property.	Property Values	**See Response 1.** **Response 4: Property Values** Property values are not a valid planning consideration and cannot contribute to a determination in regard to any planning application.	See response to submission 1 in regard to odour and property value impacts. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
3	Loton Drive, Northam Resident Received 24th April 2017	The smell is horrendous from these chicken farms and as such will affect mine and my children's asthma & will also de-value my property. Having lived near 2 of these farms in Perth they smell, I know. As they are being moved out of Perth away from houses, why do you feel it is acceptable to approve this as it is so close to more houses? The small does affect people's health and it will defiantly de-value housing. I am disgusted that you haven't even bothered to notify the residents that will be affected by this farm, as you did with the solar farm. You sent letters and it was in the newspaper, but the chicken farm – nothing. Is this so you can quietly pass it through council and then say too bad to the people? I feel you have been very secretive about this. The question must be asked "how much of a kick back is	Odour, Health Impacts, consultation	**Refer to Response 1.** **Response 2: Planning and Advertising of Proposal** The proposal has been subject to public advertising as is required under the *Planning and Development Act 2005* and associated regulations. **Response 3: Health and Biosecurity** There is no evidence that a well operated poultry farm with appropriate setbacks causes health issues. In addition, diseases are rarely communicable to humans. In Australia, the Australian Government Department of Agriculture and Water Resources has reported that there is only the most remote possibility of a human pandemic influenza developing in Australia as a result of migratory birds carrying avian influenza virus to Australia. If a human pandemic influenza develops as a result of mutation of an avian influenza virus, it will most likely occur somewhere else in the world and any spread to Australia would be from international travellers (Source: http://www.agriculture.gov.au/pests-	See response to submission 1 in regard to odour, health impacts and property value impacts. **Location** This development proposal is setback more than 1.1km from the nearest house and therefore is considered to be appropriately sited in accordance with the Environmental Protection Authority's Guideline Statement No. 3 – *Separation Distances between Industrial and Sensitive Land Uses*, the Environmental Code of Practice for Poultry Farms in WA, and State Planning Policy 2.5 – *Rural Planning*. **Advertising of Application** This application has been advertised in accordance with Schedule 2 Part 8 Clause 64 (3) of the deemed provisions for local planning schemes of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations) and Local Planning Policy 20 – Advertising of Planning Proposals which included an advertisement on the 'Out for Comment' page on the Shire's

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		the Shire getting?" This will not create any jobs for local people as Ingham will have a caretaker onsite to do everything, it only requires 1 person. Again I hope you seriously consider peoples health & the value of people's properties before you approve this, otherwise you may have people seeking compensation for loss of value.		diseases-weeds/animal/avian-influenza 2017). Biosecurity is a very important part of operation of a poultry farm and it is extremely rare that birds are lost to disease. **Response 10: Odour, Dust and Noise** Management of odour, dust and noise have been addressed in the proposal and updated version of the EAMP (V2). Implementation of best practice management is in the interest of the poultry farm operator to ensure that the operation runs as efficiently as possible, with risk reduced to ensure there are no off site impacts.	website and an advertisement in the Avon Valley Advocate published 5th April 2017. **Economic Benefit** The proponent has advised that the development will employ approximately 9 staff when fully developed. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
4	Heaton Drive, Northam Resident Received 24th April 2017	REASONS I AM TOTALLY AGAINST THE PROPOSED PLANS: - SMELL (Free Range Broiler Poultry Farm comprising of sixteen (16) sheds and ancillary facilities. A	Odour, Noise, Vermin, Pesticides, Dust, Water Supply, Health	**Response 5: Proforma Submission** This standardised submission form does not specifically address the proposal or provide any evidence that that the risks associated with odour, noise, vermin, pesticides, dust,	**Odour** See response to submission 1. **Noise** Noise impacts resulting from the development are expected to be

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		maximum total of 720,000 birds are proposed to be housed at any given time.) - NOISE from the trucks and workers coming and going as well as the animals themselves, fans and machinery used to run farm. - VERMIN AND INSECTS with all the food and dead carcasses that are always present on a farm of this nature. - PESTICIDES AND DUST drift from the farm would cause health concerns with the amount of chook faeces and rotting bodies from the birds as well as pesticides and other chemicals being used in the property - WATER TABLE DESTRUCTION from the bore they plan to use which has the capacity to use 6L per second - TRAFFIC there would be a considerable traffic issue causing	Impacts, Traffic	impacts on water table, traffic or disease are likely to be an issue. **Response 6: Transport** Truck movements and associated noise are in line with an intensive rural land use, as are traffic movements from employees. Equipment will be chosen based partly on low noise generation. As outlined in the proposal, access roads will include the Great Eastern Hwy, Yilgarn Avenue and North-Cranbrook Rd. As defined by MRWA, Great Eastern Highway and Northam-Cranbrook Road are classed as Primary Distributors. Primary distributors provide for major regional and inter regional traffic movement and carry large volumes traffic, some are strategic freight routes. Yilgarn avenue is classed as a regional distributor which links significant destinations and are designed for efficient movement of people and goods within and beyond regional areas. Therefore, the roads are designed for the low levels of traffic this proposal will generate. **Response 7: Pests and Vermin**	minimal and consistent with normal agricultural farming and road traffic noise currently experienced in the area. The proponent is required to comply with the *Environmental Protection (Noise) Regulations 1997*. **Deceased Birds** The proponent has modified their proposal and will not be burying deceased birds on the site. All deceased birds will be stored in refrigerators and removed to a recycling facility in Mandurah. **Vermin** A pest management plan will be implemented to prevent loss of birds to predators such as foxes and to prevent infestation of vermin. The proponent is also required to prepare a Stable Fly Management Plan as a recommended condition of approval. **Pesticides** Use of pesticides will be consistent with normal rural farm operations and are

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		a much greater danger and delays on our roads as well as wear and tear and noise and dust. - DISEASE RISK -Common diseases that people can get from poultry include: • Bird flu, Avian influenza. Avian influenza is a virus carried by birds • Botulism, Limberneck (Clostridium botulinum) • Campylobacteriosis (Campylobacter spp.) • E. coli (Escherichia coli 0157:H7) • Salmonellosis (Salmonella spp.) • West Nile virus (WNV) Our property prices and quality of life and health (chest problems, allergies and severe asthma a big one due to the dust and pesticide drift) are going to be severely damaged by this project should it be allowed to go ahead so close to town. If the project is to go ahead I request that a change in build site		Vermin will be controlled using standard bait stations. Bait stations are checked on a regular basis in accordance to the guidelines set in the Growing Manual from Ingham's. Baits are replaced or replenished regularly and are discarded after 4 weeks and replaced with fresh baits. A Rodent Control File is kept on site with the following documentation Bait Station Location Sheet, Rodent Sighting Report, Rodent Control Record and Pest Control Product Register. Flies will not have an environment to breed as litter will be removed from the property after each batch of birds (not stored on site). Pesticides are generally not required for operations, but when they are used, it will be in accordance with manufacturers guidelines and usually within the sheds. Outside the sheds, normal rural management operations will be applied. **Response 9: Groundwater**	unlikely to affect any adjoining property. **Dust** A dust management plan will be implemented at all times. The proponent has supplied dust modelling that demonstrates that odour is unlikely to be detected by any residential dwelling. **Water Supply** The Department of Water has advised that there is no requirement to obtain a licence for the bore as the site is located within the Karri Groundwater Area, which is unproclaimed under the *Rights in Water and Irrigation Act 1914*. **Traffic** On average there development will generate 3 heavy vehicle movements and 9 light vehicle movements per day. Heavy vehicles will be utilising the existing heavy haulage route via the Northam-Cranbrook Road and Yilgarn Avenue to access the Great Eastern

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		be a condition of this. Going off the plans module 1 & 4 need to be moved to Lot 22 or further away.		The groundwater abstraction is considered sustainable and will be monitored. The water table is not subject to licencing as the area is not considered to be a significant resource. The landowner has an interest in ensuring the sustainable use of the resource. **Refer also to Responses 3, 10**	Highway. These roads have been constructed for heavy vehicle use and an average of three additional movements per day is unlikely to impact upon the condition of the roads. Main Roads are responsible for the maintenance of the Northam-Cranbrook Road and have raised no safety concerns to the proposed vehicle entry point. **Health Risk** See response to submission 1. **Position of Module 1 & 4** Modules 1 & 4 achieve the minimum 1km separation distance required in accordance with the EPA Guidelines, Industry Code of Practice and State Planning Policy 2.5 and therefore are not required to be repositioned. The farm modules are located more than 1km to the nearest sensitive receptor. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
					The submission is noted. Modification of the proposal is not recommended.
5	Heaton Drive, Northam Resident Received 24th April 2017	I retired to Northam and chose a location on the edge of the townsite to build on. This gives me mainly rural views across the Avon Valley to Mt Ommaney, which is now facing the prospect of degradation. I have spent years enjoying the view across the valley any wind from the south around to the northwest is funnelled by the topography down the Avon Valley into the Northam townsite, so for about half of every year our town would be downwind of this proposed broiler farm. 720,000 birds produce a lot of faecal matter as well as dust and dust mites. Add to this pesticides and chemical feeds and a toxic brew of pollution is caused. This number of birds also generates a very large amount of heat. This heat, combined with the inevitable ventilation through summer to prevent heat deaths in the sheds, lifts the toxic brew	Odour, Health Impacts, Dust, Water Supply, Vermin, Waste Disposal	**Refer to Responses 10, 3, 9, 7.** **Response 8: Disposal of dead birds** Dead Birds will be removed from sheds on a daily basis. Dead birds will be stored in BiobiNs and removed from the property by a contractor. A BioBin is an onsite, capture and containment system used for organic material processing (starting the composting process) in an odour free, easy accessible vessel. http://www.biobin.net/index.php?id=2. These bins will be sealed to prevent access by vermin, wild birds or other animals. An outside contractor will remove the bins as required for processing by a composting company.	**Odour & Health Risk** See response to submission 1. **Vermin & Pesticides** See response to submission 4. **Water Supply** See response to submission 4. **Advertising of Application** See response to submission 3. **Road Access** Vehicle access will be obtained by the Northam-Cranbrook Road not Spencers Brook Road. Northam-Cranbrook Road is maintained by MRWA not the Shire. **Deceased Birds** The proponent has modified their proposal and will not be burying a deceased birds on the site. All deceased birds will be stored in refrigerators and removed to a recycling facility in Mandurah.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		hundreds of metres into the air to be blown into Northam to the detriment of the health, as well as that of the people around me being threatened is my primary concern. Secondly should a link between this prospect and the health of the people of Northam ever be proved it is the Shire who will be sued for compensation because they gave the go-ahead. So I could be forced to pay part of a bill that was created by the desires of a wealthy man to become richer and the Shire's compliance to the bidding of the privileged. Thirdly, I'm told that this proposal will be entail pumping 6 litres per second ie over 500,000 litres per day. This groundwater belongs to all of us not one solitary business enterprise. Over the past ten years the rains have only just enabled the Avon Descent to be run from Northam, taking some 180,000			**<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

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		litres of water every year will ensure this event never happens again. Fourthly whenever sheep are mustered at the townsite end of this farming conglomerate we get clouds of blow flies around our houses, an occasional downside of being by a working farm. Should this project be approved I expect blowflies for 9 months of the year as well as noxious smells wafting on the breeze. Fifthly, a huge new food resource will undoubtedly attract feral cats, dogs, foxes as well as mice and rats with the snakes that prey on them. Over time the population build-up of these pests will force some of them down the Avon Valley towards the townsite to the detriment of our lifestyles and the biosecurity of the habitat of the native fauna. Having been made aware of the proposal I checked on the internet for information and a map			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

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		showing the location. There is nothing on the Shire's website and the reference # on the form produced no results. A google search was equally non-productive so this process of getting public feedback is extremely flawed. Normally every couple of years the Shire patches a few potholes and clears the occasional drain on Spencers Brook Road, so I've been wondering why since last February so much time and money (ours?) was being lavished on this section of the road. Now this proposal was emerged the answer seems obvious. 'Which came first the chicken or the egg?' is now replaced with 'which came first, the major infrastructure or the approval of this chicken stalag' (i.e. February versus not yet). I believe this needs further professional investigation, it don't pass the smell test or even the pub test.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

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		Another issue is that should this go ahead who pays to maintain the road, the entity making money from it or the ratepayers! To summarise, for some years the Shire has been spruiking Northam as a Supertown with a doubling or more of the population in the next few years. This farm will cause people to sell up and leave. Seems the new sales pitch for our town will be: "Welcome to Northam, you get to drive past a prison on a regular basis, live in a viral smog enjoying a river that doesn't exist anymore and privileged with sub-standard television reception and the right to drive to Toodyay to see the start of the Avon Decent." Blind Freddie and the drover's dog can see that this project is counter to the Shire's states aims. A final thought, chicken sheds have a daily mortality rate, at a very			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

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		conservative 5% P.A. That is 35,000 carcasses to dispose of, how and where will this be done?			
6	Jacamar Drive, Northam Resident Received 24th April 2017	As the owner of a neighbouring property that will e directly affected by this proposal. REASONS I AM TOTALLY AGAINST THE PROPOSED PLANS: - SMELL (Free Range Broiler Poultry Farm comprising of sixteen (16) sheds and ancillary facilities. A maximum total of 720,000 birds are proposed to be housed at any given time.) - NOISE from the trucks and workers coming and going as well as the animals themselves, fans and machinery used to run farm. - VERMIN AND INSECTS with all the food and dead carcasses that are always present on a farm of this nature. - PESTICIDES AND DUST drift from the farm would cause health	Odour, Noise, Vermin, Pesticides, Dust, Water Supply, Health Impacts, Traffic	**Refer to Response 5, 10, 7, 6 and 3.** **Response 11: Pesticides and Chemicals** Pesticides are generally not required for operations, but when they are used, it will be in accordance with manufacturers guidelines and usually within the sheds. Outside the sheds, normal rural management operations will be applied.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		concerns with the amount of chook faeces and rotting bodies from the birds as well as pesticides and other chemicals being used in the property - WATER TABLE DESTRUCTION from the bore they plan to use which has the capacity to use 6L per second - TRAFFIC there would be a considerable traffic issue causing a much greater danger and delays on our roads as well as wear and tear and noise and dust. - DISEASE RISK -Common diseases that people can get from poultry include: • Bird flu, Avian influenza. Avian influenza is a virus carried by birds • Botulism, Limberneck (Clostridium botulinum) • Campylobacteriosis (Campylobacter spp.) • E. coli (Escherichia coli 0157:H7) • Salmonellosis (Salmonella spp.)			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		• West Nile virus (WNV) Our property prices and quality of life and health (chest problems, allergies and severe asthma a big one due to the dust and pesticide drift) are going to be severely damaged by this project should it be allowed to go ahead so close to town. If the project is to go ahead I request that a change in build site be a condition of this. Going off the plans module 1 & 4 need to be moved to Lot 22 or further away.			
7	Woodley Farm Drive, Northam Resident Received 24th April 2017	Private citizen and as an owner of property. Our concerns are: • Increased heavy traffic to and from the poultry farms. • Increased potential rodent infestation. • Increased risk of smell, disease especially over the summer months. • Will there be ongoing independent monitoring	Traffic, Vermin, Odour, Health Impacts	Refer to Responses 1, 6, 10 and 3.	See response to submission 4. **Monitoring of Development** The proponent is required to monitor their operations to ensure they comply with all approved management plans, applicable safety, environmental and hygiene laws and regulations and the conditions of any approval granted. Relevant government agencies may carry out inspections from time to time. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		of this facility – safety, environmental, hygiene issues?			**The submission is noted. Modification of the proposal is not recommended.**
8	Woodley Farm Drive, Northam Resident Received 26th April 2017	As an owner of the above property I am concerned about noise, smell and health issues as a consequence of this application. I am also concerned about the effect this would have on the value of my property.	Noise, Odour, Health Impacts	Refer to Responses 1, 10 and 3.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**
9	Dring Street, Northam Resident Received 26th April 2017	As a home owner with small children we believe this broiler farm is too close to our property and town. REASONS I AM TOTALLY AGAINST THE PROPOSED PLANS: - SMELL (Free Range Broiler Poultry Farm comprising of sixteen (16) sheds and ancillary facilities. A maximum total of 720,000 birds are proposed to be housed at any given time.) - NOISE from the trucks and workers coming and going as well as the animals themselves, fans and machinery used to run farm.	Odour, Noise, Vermin, Pesticides, Dust, Water Supply, Health Impacts, Traffic	Refer to Responses 5, 10, 7, 11, 9, 3 and 6.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		- VERMIN AND INSECTS with all the food and dead carcasses that are always present on a farm of this nature. - PESTICIDES AND DUST drift from the farm would cause health concerns with the amount of chook faeces and rotting bodies from the birds as well as pesticides and other chemicals being used in the property - WATER TABLE DESTRUCTION from the bore they plan to use which has the capacity to use 6L per second - TRAFFIC there would be a considerable traffic issue causing a much greater danger and delays on our roads as well as wear and tear and noise and dust. - DISEASE RISK -Common diseases that people can get from poultry include:			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		• Bird flu, Avian influenza. Avian influenza is a virus carried by birds • Botulism, Limberneck (Clostridium botulinum) • Campylobacteriosis (Campylobacter spp.) • E. coli (Escherichia coli 0157:H7) • Salmonellosis (Salmonella spp.) • West Nile virus (WNV) Our property prices and quality of life and health (chest problems, allergies and severe asthma a big one due to the dust and pesticide drift) are going to be severely damaged by this project should it be allowed to go ahead so close to town. If the project is to go ahead I request that a change in build site be a condition of this. Going off the plans module 1 & 4 need to be moved to Lot 22 or further away.			
10	Loton Drive, Northam Resident	As a private home owner in Woodley Farm Estate we feel that the prevalence of east/southeast winds during the summer and early	Odour, Lack of Information about proposal	Refer to Response 10. The layout of the proposed operation was included in the development application and EAMP.	Refer to response to submission 1 in regard to odour. The proponent has supplied more detailed plans showing the detailed

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Received 26th April 2017	autumn will most likely affect our lifestyle through foul odours. The on-line Shire locality map does not appear to show where the proposed buildings, pens etc will be located on this very large 'acreage' so that a precise judgement of its effect on us is not obvious. We would like to object to the proposal.			layout of each farm module. The plans can be view in the Appendices of this report. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
11	Loton Drive, Northam Resident Received 26th April 2017	We owners of property at 4 Loton Drive. We strongly oppose to this chicken farm going ahead due to: • additional traffic • smell • noise • decrease in our house value • our health	Traffic, Odour, Noise, Health Impacts	Refer to Responses 1, 6, 10 and 3.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
12	Citron Avenue, Muluckine Resident Received 26th April 2017	I am an owner of a property out here and I feel that my property will be significantly damaged in value if there are noise or more concerning odour issues. I feel that my properties value will decrease if there are constant	Noise, Odour	Refer to Response 2.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		noise and odour issues – How is that fair?			
13	York Road, Northam Resident Received 26th April 2017	As a private citizen situated opposite of the proposal site, I would like to put in a submission on the grounds that noise, concerns about faecal management and smell. I have concerns about the smell overflowing from the site. I am concerned about the noise level in general and how the fertilizer/manure is going to be managed. I am concerned this proposal could cause land devaluation. Why doesn't O'Brien build it near his house?	Noise, Waste Management, Odour.	Refer to Responses 1, 10 and 8.	See response to submission 4. **Waste Management** A waste management plan will be implemented at all times. The proponent will remove manure from the premises via covered trucks without the need for stockpiling on site. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
14	Loton Drive, Northam Resident Received 26th April 2017	As a residence of Woodley Farm Driver, I am concerned with: • Lack of prior notice the Shire has provided for feedback into this proposal: If not for a letter provided in my letter box by someone who has known about this proposal, I would	Traffic, Odour, Vermin, Waste Management, Water Supply, consultation.	Refer to Responses 2, 6, 10, 7, 8 and 9.	See response to submission 4. **Advertising of Application** See response to submission #3. **Traffic Movements** A total of 57.6 heavy vehicle movements are required per batch of birds from all 16 sheds. Removal of each batch is staggered as birds ages

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		not have been able to provide feedback on this proposal. It appears that this is just trying to be slipped through to the approval phase (given the proposal indicates the first sheds are proposed to be finished by October 2017). • Increased traffic on the Northam York Road, From the proposal, it appears that the calculations have been completed on 3 shed, however the proposal indicates 4 shed per farm (with 4 farms to be completed eventually), so annually when all farms are completed, there will be: 62 roadtrains annually for feed 93 roadtrains annually to deliver the birds 340 roadtrains annually to remove the birds for processing Note: plus truck and machinery movements for completion of the			differ from shed to shed. Each batch is removed for processing every 63 days. Heavy vehicle movements will take place during daylight hours except for the bird transport trucks which will arrive during the night and depart at 8am the following morning. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		sheds in the first instance. There is also no mention of the timing of the truck movements (is this done during the day or night?). • Odour emitted from the proposed farm. Given the proposed poultry farm is located to the south and east of Woodley Farm, there may be odour from the farm depending upon the breeze. There is very little commentary in the Environmental Assessment surrounding the odour and noise, other than to say that the proposed farm meets the maximum buffer distance of 1,000 m (as required in the EPA separation distance guideline), being 1.1 km east of the nearest residence. I believe more commentary and discussion with residents is required on odour before this proposal is approved. • Litter Management			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		Again, the Environmental Assessment has very little commentary on management of litter (other than to say that fly breeding, runoff and infiltration to groundwater) are reduced as all litter will be removed from the property without on-site storage (see comments in 4.2). However comments under Nutrition Management (4.3) go on to say the that whilst litter from the sheds will be removed at the end of each batch, some manure will be deposited in the free range areas (so there will be approximately 35 days from each batch, or 458 tonne of manure per year produced for free range). • Increased vermin (mice and rats). This will be a real problem given the increased use of feed for the poultry. • Bird Deaths			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		The Environmental Assessment details that birds will be buried on the farm. What impact does that have on the groundwater (the report states the ground water is 30 metres below ground), however with up to 374,000 birds annually to be buried in ground, this should be investigated further. • Water usage Each shed is to use 6 million litres per annum. Given there will eventually be 24 shed on building completion, that will be 144,000,000 litres per annum. What impact will that usage have on the groundwater. There is also requests in the Development Application (under 3.5.1) that details plans for irrigation of pastures and vegetation. Again, has there been any research completed on the effect this will have on the level of the water table. I also attach some reports on:			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		• Paying the price of living too close to chicken farms • Welcome to the chicken farm (faeces, bacteria and toxins) I am greatly opposed to this proposal given the unknowns detailed above, plus what impact the proposal will have on my house price. It appears that this proposal will not add any value to the residents of Northam (and could detract on house values), as all feed will be brought up from Perth, trucking will be completed via contract and minimal employment will be made available. I seek further clarification from the Shire prior to this proposal going forward.			
15	Angus Way, Northam Resident Received 26th April 2017	• Objection to the site proposed. • Environmental Protection Insufficient. • Full details emailed to the CEO 26/4/17	Noise, Odour, Amenity, consultation	Refer to Responses 1 and 10.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		Noise & odour are strongly carried in this area due to the geography, geology and the prevailing winds. Noise carries over three kilometres. We oppose such a facility of the grounds of loss of amenity, decrease in values, smell and noise. People living in the area of Woodley Farm and down to Burn Street, already have noise to impact on their lives coming from the land to the south. A mob of sheep a mile away from Throssell Street can be heard distinctly, due to the unhindered movement of sound. Having experience with a large animal 'enclosure' even 'free range' we consider the area proposed unsuitable for the purpose given. Logistically, a farm of 3/4 million chickens is not suited for near residential location.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		Please consider the effects to the population of the town, given prevailing winds for approx 6 months of the year. The old saying silence is golden, well it is not always the wind that carries ill-will; silence allows the voices of animals to travel many miles. We can hear the trains approaching from Grass Valley and traffic along Spencers Brook Road. Chattering hens that close to town will create a huge problem, one many could not imagine before the event. It is not only Woodley Farm residents who will be effected. It will have a serious impact on Northam townsite.			
16	Heaton Drive, Northam Resident Received 26th April 2017	We have lived in this quiet estate for nearly 5 years and our main concerns are noise, smell and how it will affect the value of our property which is already affected by the market.	Noise, Odour, Vermin, Pesticides, Dust, Water Supply, Health	Refer to Responses 1, 10, 5, 7, 9, 3 and 6.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		The strong winds we get here come straight from that direction so this would be an ongoing problem of odour as it does get very windy here and the noise would affect us on a much more regular basis than the few trucks and farm equipment we hear now. REASONS I AM TOTALLY AGAINST THE PROPOSED PLANS: - SMELL (Free Range Broiler Poultry Farm comprising of sixteen (16) sheds and ancillary facilities. A maximum total of 720,000 birds are proposed to be housed at any given time.) - NOISE from the trucks and workers coming and going as well as the animals themselves, fans and machinery used to run farm. - VERMIN AND INSECTS with all the food and dead carcasses that are	Impacts, Traffic		

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		always present on a farm of this nature. - PESTICIDES AND DUST drift from the farm would cause health concerns with the amount of chook faeces and rotting bodies from the birds as well as pesticides and other chemicals being used in the property - WATER TABLE DESTRUCTION from the bore they plan to use which has the capacity to use 6L per second - TRAFFIC there would be a considerable traffic issue causing a much greater danger and delays on our roads as well as wear and tear and noise and dust. - DISEASE RISK -Common diseases that people can get from poultry include: • Bird flu, Avian influenza. Avian influenza is a virus carried by birds			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		• Botulism, Limberneck (Clostridium botulinum) • Campylobacteriosis (Campylobacter spp.) • E. coli (Escherichia coli 0157:H7) • Salmonellosis (Salmonella spp.) • West Nile virus (WNV) Our property prices and quality of life and health (chest problems, allergies and severe asthma a big one due to the dust and pesticide drift) are going to be severely damaged by this project should it be allowed to go ahead so close to town. If the project is to go ahead I request that a change in build site be a condition of this. Going off the plans module 1 & 4 need to be moved to Lot 22 or further away.			
17	Rogers Road, Northam Resident Received 26th April 2017	The Howlett family residing at 109 Rogers Road, Northam WA 6401, would like to strongly express their concerns regarding the proposed free range broiler poultry farm at Lot 13, Northam-Cranbrooke, Muluckine.	Vermin, Waste Disposal, Water Supply, Odour, Health Impacts,	Refer to responses 7, 10, 8, 9, 3, 6 and 1.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		We feel that this establishment would increase the fly population in the area due to poultry faeces and poultry deaths on the property. We are also extremely concerned about the possibility of airborne bacteria being picked up by prevailing winds from chicken faeces and being spread throughout the paddocks and residential properties in the area. As we have a young family, we are extremely concerned with the possibility of inhaling meningitis and other airborne diseases emanating from the property. We are also concerned with the large amount of groundwater which would need to be extracted to service the proposed development. On average each bird requires approximately 200 ml per day. The proposal of 720,000 birds would require 1441000 litres per day. This amount of water withdrawal from the groundwater would be unsustainable, and	Traffic, Amenity		

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		would have a huge detrimental effect on the neighbouring farms water supply. We are also extremely concerned about the impact of bad smelling odours and other noxious fumes that we would be breathing in. Not only would this be extremely uncomfortable to live with, it would also devalue the price of surrounding properties and residences. The proposed development would also require a large number of truck and vehicle movements to and from the property to provide feed and other supplies as well as removing the broilers for sale. The area is currently a quiet rural neighbourhood and the impact of having multiple vehicle movements to and from the property at all times of day and night would negatively impact on the amenity of the area.			
18	Gillett Road, Northam Resident	I have moved to Northam from Perth 4 years ago and am a local	Odour	Refer to Responses 1 and 10.	See response to submission 4.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Received 26/4/17	resident, property owner and employer. I fully support development and new employment opportunities. However, I believe that this poultry farm is far too close to town. We need to protect the value of the town & properties in town. It is barely 3km from some of the nicest homes in Northam. Surely it should be 10kms out of town!!! I have had experience with poultry farms in Maddington, Southern River and Armadale over many years and it is simply fact that when the wind picks up the stench from a poultry farm it carries it for miles. This poultry farm is on the door step of town and in close proximity to the Woodley Farm locality which is home to some of the nicest properties in town. It is also very close to all the land on the southern side of Throssell			It is considered that the Northam townsite boundary is unlikely to be expanded any closer to the poultry farm beyond the existing boundary to the south-east due to the steep topography which make development difficult. The Shire's Planning Strategy does not identify and further intensification of residential development in the Muluckine area with the area designated to remain rural into the future. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		which is all ear marked for residential. I live in Fairway's area and we regularly have a breeze that follows the valleys and hills and I have no doubt if this poultry farm goes ahead in this location we will smell it. Please, please approve a poultry farm, but, please ensure it is at least 10km's out of town. Further to my submission attached to my previous email, for the 13 years before moving to Northam (2000 – 2013) we lived at 3 Roberto St in Willetton, some 13.8km from the Canning Vale Recycle + Landfill Facility. It was a regular occurrence that the wind would be blowing in the right direction and we would have to put up with the horrible stench of the tip – this was over 13km away. As stated, I genuinely believe that it is in the interests of Northam to			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		approve the Poultry Farm but that the proposed location is totally unacceptable as it is so close to town and to residential areas.			
19	Loton Drive, Northam Resident Received 26/4/17	I write to you to express my strong opposition to the proposed Animal Husbandry - Free Range Broiler Poultry Farm proposed for the Northam Cranbrook Rd Mulukine. Firstly I am concerned that both the Shire & the developer have kept this proposal very quiet, and have left very little time for community comment and opposition. I have recently been informed of a proposed Solar Power array which has been conversely very well publicised, and a lot of information has been given to local residents on this proposal. The proposed poultry farm has very little to no benefit to the local community, and in fact has far more negatives than positives. By their very nature poultry farms are an offensive industry. They	Odours, Noise, Vermin, Visual Amenity, Health Impacts, Traffic	Refer to Responses 2, 10, 7, 1, 3 and 6.	See response to submission 4. **Visual Amenity** Visual amenity will be detrimentally impacted because all buildings have been setback well away from the property boundaries, are of low, single storey height and will be mostly screened from view by the existing undulating topography of the site. It is acknowledged that Farm Module 1 may be visible in the distance from some elevated properties in the rear of the Woodley Farm Estate. However additional native vegetation will be planted around all farm modules including farm module 1 to ensure that visual amenity is maintained. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		notoriously emit constant unpleasant odours, noise, breed or attract flies and are unsightly. To propose to build such a large, intensive operation right on the doorstep of one of Northam's high value land estates is questionable at best! I would have thought it was in the best interests of the Shire and all of it's residents that high value land are as such as the Woodley Farm Estate are maintained as high value areas. The proposed poultry enterprise being built in such close proximity does nothing to maintain the area, and in fact will undoubtedly detract from the area in many ways, detrimental to land values. The prevailing wind blows directly from the direction of the proposed poultry farm across the Woodley Farm Estate. This will cause constant odour and noise issues, and possibly also attact large			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		numbers of insects, flies etc causing possible health problems. The proposal will also visually negatively impact the area. Put simply, the large sheds will be unsightly and will spoil what are currently pristine views, which significantly contribute to the land value of the area. In the proposal it clearly states that in the first stages there will only be 3 employees. Hardly a boon to the local job market! These positions are no doubt already filled by the proponent, meaning that this proposal also has no employment benefit to the town. I also queston what effects this proposal will have on the traffic onto the Northam-York Rd. More trucks on this road are a danger to local residents and road users. I am very supportive of the local shire, and I am very supportive of development in the Northam area, however this particular proposal holds no benefit to the			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		community. The proposal is an offensive industry, is unsightly and has only negative impacts. As the Shire CEO, I implore you and the Shire Council to reject this proposal completely and absolutely.			
20	Marshall Place, Northam Resident & Woodley Farm Dr Resident Received 26/4/17	It is purely by chance that we have learned today of this proposal via Facebook, and as we are presently on holiday interstate, we are unable to respond in any other manner than this email. In the absence of any detail on the proposal, except that as landowners in Marshall Place, we are likely to be directly impacted. We wish to raise the following objections, in the absence of any information to the contrary - 1. Noise 2. Light Pollution 3. Dust 4. Odour 5. Destruction of visual amenity of the property.	Noise, Light Pollution, Dust, Odour, Visual Amenity, Lack of information	**Refer to Responses 10, 1 and 2.** **Response 12: Light pollution** Sheds will be lit internally for night time collection of birds. Outside lighting will be minimal to meet health and safety requirements for night workers. External lights will be directed away from external vantage points. The distances from the modules to vantage points (roads and residences) is a minimum of 1km. Night lighting will not cause a loss to visual amenity. **Response 7: Planted buffer** The proponent will plant vegetation buffers around each of the four modules. Planting will comprise local native species. The planting will assist in minimising visual impacts, create a wind break for the free ranging birds	See responses to submissions 4 and 5. **Light Pollution** Only sheds in module 1 would be visible in the distance, 3km from the rear of the Woodley Farm Estate. Sheds will be screened by landscape buffers to prevent light and pollution and visual amenity impacts and will only be lit internally when bird collection occurs twice in a 56 day growing period. **Intensive Agriculture Land Uses** The land to the rear of the Woodley Farm Estate is zoned Rural and therefore intensive agriculture land uses may be considered. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		As with others, we purchased land in this subdivision because of the rural nature and amenity of the area. There was no indication of future intensive or semi intensive agriculture being located so close to residential boundaries. Had this plan been known, no one would have bought here. There is no information about environmental requirements such as shelter belts along boundaries, management of waste or effluent, or any of the issues that are important to affected ratepayers. With the size of the land area under consideration, it seems unnecessary to locate animal production of this type so close to residences. Finally, we would like to express our dismay and disappointment that the Shire would manage this process in such an unfortunate manner. We left WA on April 14, having had no notification		and assist in reducing risks associated with dust dispersion.	

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		whatsoever of this proposal, and find that we are expected to provide a response within less than two weeks. Even if we had received any communication from the Shire this is an unacceptably short time for response. This is so different to the process followed for the proposed solar installation also in this area. It encourages the perception that the Shire is attempting to get this proposal through "under the radar", so to speak. This is not the action of a Council which gives due consideration to the interests and rights of its ratepayers, for which reason we express our dissatisfaction.			
21	Jacamar Drive, Northam Resident Received 26th April 2017	1) Decrease in property value due to the close proximity of the chicken farm. 2) Potential for health issues due to - dust and pesticide drift. 3) Risk of diseases being spread from large scale poultry farms, to	Health Impacts, Traffic, Vermin, Waste Disposal, Odour, Water	Refer to Responses 3, 6, 7, 8, 10, 9 and 2.	See response to submission 4. **Vegetation buffers** The proponent has modified their proposal and will plant vegetation buffers around each farm module. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		other surrounding chickens, and to people. 4) Traffic - increased traffic, particularly large trucks at night. 5) Vermin and insects - there will be a large increase in vermin and insects around the area, due to the food, faeces and dead carcasses that are always present on a farm of this nature. 6) Potential for up to 373527 dead chickens to be buried on site per year. This increases the risk of spreading diseases, as well as increasing issues with vermin and insects. 7) Smell- the smell will travel for kilometres in every direction, decreasing property values. 8) Water table destruction due to the bore which will be used to provide the water for the operation. 9) No vegetation buffers of local native screens have been noted within the plans - which is a recommendation within the 'Environmental Code of Practice	Supply, Lack of Information		**The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		for Poultry Farms in Western Australia 2004' If it is to go ahead, please consider moving sheds 1 and 4 further away from the Northam town site.			
22	Loton Drive, Northam Resident Received 26th April 2017	As a land owner in Loton Drive with the intention to build in the near future, I deeply reject the proposal for a Chicken Factory being built so close to that area of town. This will de-value the Woodley Farm area and the housing prices in Northam for that matter. The smell coming from such a facility so close to town will be unimaginable. The failed Meenar Industrial Park will be a better option for you to consider. There is plenty of vacant land out there and closed business that they can demolish to make way for their buildings. We want to attract people to live in the town, not drive them out	Odour	Refer to Response 1, 10 and 4.	See response to submission 4. **Proposed Use** The proposed development is not a 'chicken factory' and no slaughtering of birds will take place on the site. The proposed used is classified an 'Animal Husbandry – Intensive' land use which may be considered on land zoned 'Rural'. The Avon Industrial Park at Meenar is zoned 'General Industry' and an 'Animal Husbandry – Intensive' land use is not permitted on land zoned 'General Industry'. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		with proposals being eagerly considered such as this.			
23	Wood Drive, Northam Resident Received 27th April 2017	Having had a NBN tower erected right near our house (after purchasing our property), I can imagine what it will look like for nearby residents to look out over huge sheds. A tower is bad enough, huge sheds would be worse. Pollution would also be a concern despite what the report says. Also minimal economic benefit to the Shire. I object to the proposal at the present site. I also believe that the Shire should have given more time for people to respond if it is believed that it is open and fair minded.	Visual Amenity, health impacts	Refer to Responses 1, 2 and 3.	See responses to submissions 4 and 5. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
24	Roediger Drive, Northam Resident Received 27th April 2017	I would like to lodge an objection to the proposed free range broiler poultry farm at Muluckine, Northam. I live at the far eastern end of Roediger Drive, Northam. My concern is that we have a substantial amount of south - south easterly breeze in this area throughout the year and this may	Odour, health impacts, vermin	Refer to Responses 10, 3 and 7.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		bring unwanted odour to our neighbourhood. This could be most unpleasant for long periods, especially in summer when we all use evaporative air conditioning drawing in large quantities of air from outside - into our homes where we would have no escape from the problem. This could be more distressing for anyone with breathing difficulty or other health issues. Although the report states no odour is "anticipated", I would like a guarantee that I and my neighbours will not experience any odour, pest issues, or any other nuisance from the proposed poultry farm in our neighbourhood. Being so close to the town this poultry farm has the potential to cause significant discomfort to a large amount of people.			
25	Loton Drive, Northam Resident	We are opposed to the location of the proposed broiler farm due to:	Odour, Vermin, Environmental Impacts,	Refer to Responses 1, 10, 7, 6 and 3.	See response to submission 4. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Received 27th April 2017	• Smell (as any SW to SE wind will affect Northam townsite). • Vermin • Environmental Risk • Noise • Traffic • Possible health risks	Noise, Traffic, Health Impacts		**The submission is noted. Modification of the proposal is not recommended.**
26	Woodley Farm Drive, Northam Resident Received 27th April 2017	We have become aware of the proposed Free Range Broiler Farm by a member of our community and have subsequently, read the information on the Shire of Northam web-site. We have reviewed the Planning and Environmental Report and are subsequently concerned that the proximity of the farm to our home will have a detrimental impact on the enjoyment of our home and on our lifestyle. We have carefully considered the location of the proposal, including each shed, in determining whether to provide feedback. We believe that the project is close enough to our home to have a negative impact. It will also impact the homes of	Lack of information, Odour, vermin, noise, traffic	Refer to responses 2, 10, 7 and 6.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		fellow community members and Northam residents. The Environmental Report refers to a complaint procedure but offers little comfort that complaints will be effectively resolved. We are concerned that due to the large number of chickens across the site, unpleasant odours will result and we will experience an increase in pests that flourish amongst chickens; namely rates, mice, foxes, flies and other insects. We appreciate that there are measures in place to reduce the impact of odour and pests but we also understand (and thus the basis of our objection) that these issues cannot be completely eliminated in such a facility. We also note that there will be 16-20 axial fans plus 10 exhaust fans per shed, in addition to power generators throughout the site. We express our further objection of the proposal due to the noise which will be created. The noise will be a			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		long-term, ongoing impact of the facility. The proposal documents also note there will be additional heavy haulage vehicles travelling the Northam-York Road, between the farm and the Great Eastern Highway Bypass. We will be impacted by the additional traffic when entering and exiting Woodley Farm Drive via the Northam-York Road. This is in addition to the smells and noise experienced from these extra trucks. In view of the above, whilst we welcome new initiatives that create jobs in Northam, we feel that the facility is too close to residential areas and would be better located further from town. We express our strong opposition to the proposal due to the adverse impact caused which will result to our home and lifestyle through unpleasant odours, vermin, noise			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		and increased heavy vehicle traffic. We welcome the Shire contacting us to clarify our concerns and thank you for considering our objection.			
27	Gairdner Street, Northam Resident Received 27th April 2017	My submission relates primarily to an interest in environmental protection and contains suggestions for the Shire to consider before approving this venture. 1) Chemical storage on a concrete pad within a shed would not adequately contain a catastrophic spillage of the volume of chemicals I would assume will be held at any time at the facility. Chemicals and hazardous substances in volumes greater than 200L should be stored within an impermeable, chemically inert bunded area to adequately contain spillage. The bund should be of a capacity to contain 110% of the largest container stored within it and 25%	Chemical storage, water supply, waste disposal, lifespan of proposal, visual amenity , odour, dust, noise, light pollution	Refer to responses 11, 8, 10 and 12	**Chemical Storage** The proponent is required to comply with the *Health Act 1911, Poison Act 1964* and the *Health (Pesticides) Regulations 2011* which is the legislation that governs appropriate storage of chemicals. **Water Management** The management of the bore is the responsibility of the proponent. The Department of Water has advised that there is no requirement to obtain a licence for the bore as the site is located within the Karri Groundwater Area, which is unproclaimed under the *Rights in Water and Irrigation Act 1914*. Therefore the Department of Water will not be inspecting the bore. **Drainage Management**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		of the entire contents. It should also be designed to allow collection of any spilt chemical (eg a sump or floor gradient) and to contain jetting should a vessel be punctured. 2) Water infrastructure management and inspection. There is no commitment to undertake frequent inspection of the bore and associated infrastructure for signs of leakage or repair faults within a suitable timeframe should an issue arise. What measures do the company and the Shire propose to prevent potential water wastage? 3) Chemical Run-off: If the sheds are to be washed with chemicals between batches what system is in place to treat this run-off appropriately to ensure it does not negatively impact on the soil (and potentially groundwater over time)? Will the company commit to using chemicals that readily			It is recommended that a drainage management plan that details how runoff will be contained be required as a condition of approval. **Site Rehabilitation** The use is capable of being approved on land zoned 'Rural' regardless of the expected lifetime of the development. If development approval is granted it will run in perpetuity with the land until such time the land owner chooses to cease the land use. At this time the land owner may require approval from the Shire to demolish or repurpose the sheds for another use. **Aesthetic Improvement** The land owner is proposing to plant vegetation buffers around each farm module for visual screening and dust dispersal purposes. It is the landowner's decisions whether or not to allow other community members access to the property for a tree planting day. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		biodegrade and aren't easily transported off site? 4) Site Closure: There is no mention of an expected life expectancy of the proposed poultry farm or a commitment to rehabilitate the area when complete. I would like some reassurance that the poultry farm will be returned to a state where it can be used for the previous land use, native vegetation or a more beneficial land use. 5) Aesthetic and Ecological Improvement opportunity. Will the Shire please consider the opportunity to use this venture to IMPROVE the aesthetics and environmental value of the proposed farm area? I have seen nearer residents raise concerns about odour, dust and noise. By imposing a condition to establish a native endemic vegetation buffer between the proposed sheds and populated			**The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		areas within a set time frame (eg 2 years) this venture will provide benefit to the Shire and environment rather than being a further blight on the landscape. If there are any odour/noise/light pollution/dust issues, the vegetation will help mitigate their impact on residents whilst providing habitat for native species. This could also be a way of involving the community if the Shire and Avon Valley Poultry were willing to invest and allow public access for 'plant a tree day' or the like. I hope that you will consider my above suggestions and request Avon Valley Poultry Pty Ltd provide further commitment to ensure environmental protection during and post operations. I also hope that you will seize the opportunity to improve a section of degraded farmland through revegetation for both environment and community benefit.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
28	Woodley Farm Drive, Northam Resident Received 27th April 2017	As an owner of properties within proximities of chook farm. If I wanted a stinking chook farm close by we would have bought a cheap house in Wanneroo. Get stuffed – plenty of unpopulated areas suited to poultry farms.	Odour	Noted.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
29	Loton Drive, Northam Resident Received 27th April 2017	We are extremely opposed to the Proposed Animal Husbandry Intensive – Free Range Broiler Poultry Farm being so close to residences and the town site of Northam. This is a large scale intensive poultry husbandry. The proposed location and area size of 28877 hectares takes up the length of the south-east side of the town. Therefore many residents will be impacted by this decision. There has not been a through notification and consultation time to allow the residents of Northam to be aware of this proposal. Due to the magnitude of this proposal on Northam, a public forum should have been arranged to notify and	Lack of information, odour, consultation	Refer to responses 1, 2 and 10. The submission is factually incorrect in terms of area (ha) and location of proposed operation.	See response to submission 4. **Location** The nearest farm module is located 3km from the Northam townsite boundary and does not abut the Northam townsite. **Number of Sheds** 16 sheds proposed as part of this application. It is understood that the proponent may submit another application to the Shire for additional sheds in the future if they experience enough demand. **Advertising of Application** This application has been advertised in accordance with Schedule 2 Part 8 Clause 64 (3) of the deemed provisions for local planning schemes of the *Planning and Development (Local*

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		explain to the residents of Northam and surrounding districts. The submission on the council website was dated the 4/4/2017 with submissions due on the 27/4/2017. With holidays for Easter, School and Anzac Day included in the time and hence many people away, the lack of notification and dates have contributed to very few residents being aware of this proposal. This proposal particularly impacts those living on the east side of town, yet we have only just been made aware of it by a letter drop. This has resulted in only a few days to prepare a submission. In the proposal there is a conflict of information with the proposal document stating 16 sheds while the environment assessment quotes 24 sheds. If it is going to be 16 sheds, why assess for 24 sheds? The proposal does not highlight any details of benefits to Northam.			*Planning Schemes) Regulations 2015* (the Regulations) and Local Planning Policy 20 – Advertising of Planning Proposals which included an advertisement on the 'Out for Comment' page on the Shire's website and an advertisement in the Avon Valley Advocate published 5th April 2017. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		The environmental study does not mention the impact from the prevailing winds. The study does give references to weather events causing issues, as though that is a reason to dismiss concerns and complaints. A review online of others living near intensive poultry farms all discuss the awful odour. We live on a 2 acre property on the east side and enjoy being outside. Odours could also come inside through the use of air conditioners. It is reasonable to expect that this type of industry be located in a discrete area, away from residences and town sites. A large intensive poultry husbandry so close to town will impact further on Northam's reputation. This affects encouraging new residents, suitable businesses and tourism to the area. We are long-time residents who have invested heavily in a			**Responses to Specific Questions** 1. No. 'Pre-approval' does not exist under the *Planning & Development Act 2005*. 2. Yes, approval would be restricted to the 16 sheds proposed as part of this application and any approval would be subject to conditions. Any future changes or extensions to the original approval would require a separate application to the Shire. If in the future, processing of chickens would be classified as an 'Abattoir' and would

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		Northam residence on the east side. It will limit the amount of people willing to choose to live so close to this industry. We have seen the steady decline in Northam's reputation as a great town and also in property values. It is unlikely to improve with a prison on one side and a large poultry industry on another. The council did not have the ability to control the detention centre/prison location but it does have the ability to control the introduction of an intensive poultry husbandry so close to town. Due to the lack of notification and short time at being able to investigate this proposal, please provide a written response within two weeks to the following concerns. Also please provide adequate written notification of the dates this proposal will be going to council. Thank you.			require a specific development approval. 3. Odour modelling has been undertaken by a qualified scientist which has taken into consideration local wind patterns. The modelling has been reviewed by an independent environmental consultancy appointed by the Shire. 4. No. Perceived impacts upon property value and rates are not valid planning considerations. 5. This application has been advertised in accordance with Schedule 2 Part 8 Clause 64 (3) of the deemed provisions for local planning schemes of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations) and Local Planning Policy 20 –

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		Questions: 1. Has any pre-approval been given by council to this proposal? 2. If this proposal is passed, will there be restrictions on the development to control future expansion or change of land use such as processing? 3. Why was an impact study on the effect of the prevailing winds not been included? 4. Has there been any consideration to the impact of this proposal on property values? 5. What was the process (type and dates) of notification given about this proposal? 6. Due to the magnitude effect this proposal could have on Northam, why was a public forum not arranged to notify			Advertising of Planning Proposals which included the following: • Direct notification of surrounding landowners who own property that abuts or is located opposite the subject site on 5th April 2017; • Publication of a notice in the Avon Valley Advocate on the 5th April 2017. • Displaying a notice on the Shire's website from 4th April 2017 to 27th April 2017 (22 days); • Referral of the proposal to relevant government agencies. 6. A public forum is not required under the Regulations. The development is unlikely to impact any residential dwelling on an adjoining property or within the Northam townsite.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		and explain to the residents of Northam? 7. As the proposal does not highlight any major benefits to Northam, why has it seemed that the council has kept this proposal from its residents and encouraged this proposal? 8. As our residence is on the east side of town, why was there no notification to us and others likely to be affected? If it was considered that there would be no impact to us, how was this judgement made, particularly concerning odour and property values? 9. With the recent solar panel proposal that went through council, we were well informed by council. Therefore we are surprised that that this process did not			7. Whether or not a proposal brings a benefit to Northam is not a relevant planning consideration. 8. As stated above, advertising was undertaken in accordance with the legal requirements. Residents of the Northam townsite did not receive direct notification as they are not expected to be impacted by the development. 9. Land owners in Woodley Farm Estate received direct notification of the solar farm proposal they are located within 1km of the development. The proposed poultry sheds are located approximately 3km from the Woodley Farm Estate and the low height of the sheds mean that the sheds would not be a dominant feature in the landscape that would affect

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		occur for this proposal. Could you please explain why?			visual amenity for residents in the Northam townsite. The proponent is also proposing to plant trees around the farm modules to provide additional screening.
30	Woodley Farm Drive, Northam Resident Received 27th April 2017	• Devaluation of Property • Risk of odour and pollution as we get winds from that direction frequently.	Odour	Refer to responses 4 and 10.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**
31	Muluckine Road, Seabrook Resident Received 27th April 2017	I do not want this chicken farm near me, it will only be around the corner from Muluckine Road, Seabrook, which is where I live. The smell will be horrendous. Surly there is land further out that could be utilised. I have heard that this business will not be employing many people which is not going to be a benefit to our town at all.	Odour	Refer to Response 1 and 10.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**
32	Woodley Farm Drive, Northam Resident Received 27th April 2017	Submission - The Woodley Farm is area is classed as rural and also residential. This is a commercial venture. Why isn't it located at Meenaar Industrial Estate where it will not affect any adjacent land	Water supply, waste managemen t, odour, vermin,	Refer to Responses 1, 2 and 8.	See response to submission 4. **Woodley Farm Zoning** Lots in the Woodley Farm Estate are zoned 'Residential' not 'Rural' under Local Planning Scheme No.6.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		use holders or residential areas? Meenaar was developed for this sort of project and is right on Great Eastern Highway. Not one resident was advised or consulted in the Woodley Farm area of this proposal. When we all purchased our land and built our homes it was for the peaceful surroundings that the area provided. It was not known to us that in years down the track the land nearby would become a commercial poultry farm. I have spoken to many people and they are all unaware of this proposal. At the moment the proposal states there will be enough water supplied to the chickens via bore water. What happens when this eventually runs dry? At the moment Northam and the agricultural region is supplied water via Mundaring Weir. As we all know the rainfall has slowly decreased and the water supply is augmented by other sources. We can't allow this type of production	location, consultation.		The subject site is not located directly adjacent to Woodley Farm Estate. The nearest module is located 3km from the rear of Woodley Farm Estate. **Land Use Classification** The Avon Industrial Park at Meenar is zoned 'General Industry' and an 'Animal Husbandry – Intensive' land use is not permitted on land zoned 'General Industry'. The subject site is zoned 'Rural' and an 'Animal Husbandry – Intensive' land use is a use that may be considered on lots zoned 'Rural'. **Advertising of Application** This application has been advertised in accordance with Schedule 2 Part 8 Clause 64 (3) of the deemed provisions for local planning schemes of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations) and Local Planning Policy 20 – Advertising of Planning Proposals which included an advertisement on the 'Out for

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		to draw on our scarce water supply. When reading the environmental assessment the dead birds will be buried on site. This assessment states that a high number of birds will die (6%) and be buried on site. What happens in 10 or 20 years' time when the whole block has been dug up? We will also have to put up with rat, mice and foxes of which we currently do not have a problem. What happens if there is an odour stemming from this farm? What can us, as a residents do about this? Once it is built, it is too late. In the attached information I have sourced, it is evident that residents in Wanneroo and Sinagra want this poultry farm relocated out of their area for the same reasons we do not want it. Also attached is an article that was in the Wanneroo Times stating that the Labor Party support this request for relocation. Northam residents did not have a			Comment' page on the Shire's website and an advertisement in the Avon Valley Advocate published 5th April 2017. See above responses regarding water supply, waste management, odour, vermin, separation distances & property value. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		choice when the Detention Centre was lobbed on our door step by the Federal Government which is now used to hold prisoners waiting for deportation. A far cry from what it was originally intended and another example of no consultation with local residents when the circumstances changed. Commercial interests and the State Government tried to have Perth toxic waste dumped at York's doorstep. The Avon Valley seems to be the dumping ground for everything the city no longer sees as desirable. The old syndrome - not in my back yard. Well don't want it in mine. I think that this whole project has been handled very badly as I dare say not even the people that live in Throssell St, Crorkan Rd or in Glass Heights even know about this project. Sea Brook residents will also be affected.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		In Sinagra land developers were permitted to build residential housing within the 1000m buffer zone leading to residents to then complain about the smell etc. and then lobby to have the farm moved. I know that this project will go ahead as the residential rate payers are merely a source of revenue that are not listened to by a totally business focused Council, and also, as the commercial interests have the State Government on side. When I previously lived in Park Lane we received a letter from the then town council about a re sited dwelling being placed on a block opposite TAFE. When the plans were submitted to the council the developer indicated landscaping and cladding would make the property more appealing - now 25 years later that house still looks the same as the day it was dumped on the block. When the surrounding			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		neighbours objected to this home being relocated there, we were told by council you can't stop a business man from making money, so how are we going to be able to stop a large commercial company in this instance. As in the past, I have no confidence that the Shire Council will follow up on any planning conditions that will apply to this proposal and believe that future expansion of the facility will be rubber stamped leading to more pressure on the environment and cause Northam residents escalated and ongoing problems. If the property does have an effect on my home value when it comes to selling, will the Shire of Northam compensate me for it - I don't think so. If I have rat, mice or fox problems will I be compensated for the baits that I have to buy - I don't think so. Clackline residents are also fighting the Council because of a commercial venture that should			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		also be at Meenaar which is what it is intended for. Believe it or not, the reason Meenaar is located where it is, is to alleviate any impact on the town and its residence so why put a Poultry Farm so close to Northam. I think that this Council should have a good long hard look at themselves and act in the interest of the ratepayers and residents first and commercial interests second - for a change. Use Meenaar!! Will residents be advised when this goes to Council and when we will have a say or will this information need to be sought out rather than made freely available.			
33	Woodley Farm Drive, Northam Resident Received 27/4/17	Property house value, smell, increased truck movements, people in Woodley Farm have invested a lot of time and money in their properties this will affect their property value, so no to the proposal.	Property value, odour, traffic.	Refer to Responses 4, 10 and 6.	See response to submission 4. **Property Values** Perceived impacts upon property value and rates are not detailed as a matter to be considered when making a determination in regard to a development application under

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
					Clause 67 of the Deemed Provisions for Local Planning Schemes. The State Administrative Tribunal recently concluded that an opinion about an expected decline in property values is not a relevant consideration. Refer to Optus Mobile Pty Ltd and City of Swan [2016] WASAT 137. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
34	Wellington Street, Northam Resident Received 27th April 2017	We are home owners in Northam and are disgusted to know that the Council would even consider this chicken farm. The smell so close to town will be disgusting, the cruelty in this type of animal agriculture is appalling. So many reasons this is a bad idea. We are 100% against this farm. As a council please stand up for our town. Say no to this terrible farm. The smell from it alone will pollute our air. No one wants to smell chickens when they breathe. This	Odour	Refer to Responses 1 and 10.	**Bird Welfare** Opinions about perceived bird welfare concerns are not a valid planning consideration. See response at submission 4 regarding odour. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		town has so much potential, the last thing we all need is a dirty, smelly, cruel chicken farm. Say no for Northam!!!			
35	Roediger Drive, Northam Resident Received 27th April 2017	As a private citizen living in Throssell Heights the farm will be situated in the rear of our home! Winds are mostly easterly. Majority of the poultry farms have a stench. With the wind factor in an area, the smell would have a negative effect on our daily living.	Odour	Refer to Responses 1 and 10.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
36	Garrigan Close, Northam Resident Received 27th April 2017	I am a private citizen who lives on the south-east border of Northam at Throssell Heights. I am appalled that a proposal for a poultry farm so close to town is being entertained. The smell will affect the areas of Northam which are currently free of crime, nicer housing. This will affect the value of my property.	Odour, property value	Refer to Responses 1, 4 and 10.	The Shire is legally required to consider all development applications. See response at submission 4 regarding odour. **Property Values** Perceived impacts upon property value and rates are not detailed as a matter to be considered when making a determination in regard to a development application under Clause 67 of the Deemed Provisions for Local Planning Schemes.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

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					The State Administrative Tribunal recently concluded that an opinion about an expected decline in property values is not a relevant consideration. Refer to Optus Mobile Pty Ltd and City of Swan [2016] WASAT 137. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
37	Roediger Drive, Northam Resident Received 27th April 2017	I feel we live to close to the proposed area for the poultry farm, also as being changed from special rural to residential in the past years and they suggest a poultry farm at our door step is insane, if The Northam Shire wants more people to come and live in Northam this would not benefit our town, no one wants to buy property with a poultry farm near buy. Our land values and home values have lowered considerably with the detention centre and now add this to the mix our homes will be worth nothing.	Location, property value, consultation	Refer to Responses 4, 1, 10 and 2.	**Location** The nearest boundary of the subject site is located 3km from the edge of the Northam townsite. The development is located at least 3km from the Avon River and furthermore the property does not have any frontage to the Avon River. The DoW of Water have advised that the development has achieved the minimum 200m setback to a watercourse. **Property Values** Perceived impacts upon property value and rates are not detailed as a matter to be considered when making

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		I for one will want to know straight away if this is to go ahead as I will put my house on the market. I am disappointed again not to be notified by mail about this, gee someone can't build a shed without our notification but something as big as this (as the zone change) we are not notified in writing, to hear on social media is not one Northam Shire. If my house decreases in value because of this I will be disappointed and asking questions. I do not want this on my door step, put it further out of town. I also do not like the fact that the poultry farm will boarder Burlong Pool and the effect this may have on Burlong pool and the Avon river, we have destroyed this river enough, the Avon River is our big advertising pool for tourists and visitors to town and it needs to be preserved and repaired not destroyed .... Come on Northam Shire we should be trying to get more			a determination in regard to a development application under Clause 67 of the Deemed Provisions for Local Planning Schemes. The State Administrative Tribunal recently concluded that an opinion about an expected decline in property values is not a relevant consideration. Refer to Optus Mobile Pty Ltd and City of Swan [2016] WASAT 137. See response at submission 4 regarding odour. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		people into town, not scaring your residents away			
38	Burn Street, Northam Resident Received 27th April 2017	We, my wife and I relocated to Northam to live in a country town with fresh air and fields & trees, this is what you are about to destroy!! WE PURCHASED OUR PROPERTY AT LOT 341 BURN STREET, FIFTEEN YEARS AGO AND AT THAT TIME THE ATTRACTION WAS THE RURAL OUTLOOK AND THE LACK OF PASSING TRAFFIC ON THE ROAD. WE ARE NOW OF AN AGE WHERE WE NEED TO DOWNSIZE AND MOVE CLOSER TO OUR FAMILY. WE HAD OUR HOUSE ON THE MARKET A YEAR AGO WITH LITTLE INTEREST AND HAVE LISTED IT AGAIN THIS YEAR AT A REDUCED PRICE NAMELY $30,000 LESS A CONSIDERABLE DROP. HOUSES IN NORTHAM CONTINUE TO DECREASE IN VALUE AND IF THIS PROPED INTENSIVE CHICKEN FARM GOES AHEAD WE MAY AS	Traffic, Property value, dust, odour, noise, vermin, water supply, health impacts.	Refer to Responses 1, 3 and 4.	**Traffic** Vehicle access is via the Northam-Cranbrook Road which is located 4.5km as the crow flies from Burn Street. Lot Burn Street will not be impacted by traffic. **Property Values** Perceived impacts upon property value and rates are not detailed as a matter to be considered when making a determination in regard to a development application under Clause 67 of the Deemed Provisions for Local Planning Schemes. The State Administrative Tribunal recently concluded that an opinion about an expected decline in property values is not a relevant consideration. Refer to Optus Mobile Pty Ltd and City of Swan [2016] WASAT 137. Refer to responses at submission 4. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		WELL ALL MOVE OUT AND GIVE OUR HOMES A WAY AS THEIR VALUE WITH BE MINIMAL. THE FIRST DEVALUATION WAS OBVIOUSLY CAUSED BY THE CLOSE PROXIMITY OF THE DETENTION CENTRE, NOW WE HAVE THE THREAT OF AN INTENSIVE CHICKEN FARM TO CONTEND WITH. THERE ARE, WE ARE SURE MANY PEOPLE IN OUR POSITION IN NORTHAM, LIVING HERE ENJOYING THE RURAL ASPECT AND THE CLEAN AIR. NOW IT IS TO BE POLLUTED BY THE DUST, SMELL AND NOISE OF A CHICKEN FARM. I HAVE MULTIPLE ALLERGIES AND IF THIS GOES AHEAD I IMAGINE I WOULD HAVE TO LIVE INDOORS WITH THE WINDOWS CLOSED AND NOT VENTURE OUTSIDE WITHOUT A MASK.			**The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		REASONS I AM TOTALLY AGAINST THE PROPOSED PLANS: - SMELL (Free Range Broiler Poultry Farm comprising of sixteen (16) sheds and ancillary facilities. A maximum total of 720,000 birds are proposed to be housed at any given time.) - NOISE from the trucks and workers coming and going as well as the animals themselves, fans and machinery used to run farm. - VERMIN AND INSECTS with all the food and dead carcasses that are always present on a farm of this nature. - PESTICIDES AND DUST drift from the farm would cause health concerns with the amount of chook faeces and rotting bodies from the birds as well as pesticides and other chemicals being used in the property			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		- WATER TABLE DESTRUCTION from the bore they plan to use which has the capacity to use 6L per second - TRAFFIC there would be a considerable traffic issue causing a much greater danger and delays on our roads as well as wear and tear and noise and dust. - DISEASE RISK -Common diseases that people can get from poultry include: • Bird flu, Avian influenza. Avian influenza is a virus carried by birds • Botulism, Limberneck (Clostridium botulinum) • Campylobacteriosis (Campylobacter spp.) • E. coli (Escherichia coli 0157:H7) • Salmonellosis (Salmonella spp.) • West Nile virus (WNV) Our property prices and quality of life and health (chest problems, allergies and severe asthma a big one due to the dust and pesticide			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		drift) are going to be severely damaged by this project should it be allowed to go ahead so close to town. If the project is to go ahead I request that a change in build site be a condition of this. Going off the plans module 1 & 4 need to be moved to Lot 22 or further away.			
39	Woodley Farm Drive, Northam Resident Received 27/4/17	Our interest will be affected by the increase, smell, flies, mice and rats!! How ridiculous! How can Woodley Farm Estate expand with this on the boundary! The real estate value will decrease!! How will this not affect the town, increase smell, noise, traffic, our industrial park is Meenar, 10km's out of town, it can go there!! It won't affect anyone neighbouring and is so close to the main highway!! Come in Northam!! Think long term in this century we should be thinking clean energy and environmentally friendly!	Odour, vermin	Refer to Responses 1, 10, 7.	**Woodley Farm Estate** Woodley Farm Estate is unlikely expand south past its current boundary which is also the Northam townsite boundary as this land is identified in the Local Planning Strategy to remain as 'Rural' land into the future. **Property Values** Perceived impacts upon property value and rates are not detailed as a matter to be considered when making a determination in regard to a development application under Clause 67 of the Deemed Provisions for Local Planning Schemes.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
					The State Administrative Tribunal recently concluded that an opinion about an expected decline in property values is not a relevant consideration. Refer to Optus Mobile Pty Ltd and City of Swan [2016] WASAT 137. **Land Use Classification** The Avon Industrial Park at Meenar is zoned 'General Industry' and an 'Animal Husbandry – Intensive' land use is not permitted on land zoned 'General Industry'. The subject site is zoned 'Rural' and an 'Animal Husbandry – Intensive' land use is a use that may be considered on lots zoned 'Rural'. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**
40	Muresk Road, Spencers Brook Resident Received 27/4/17	As Owner Occupiers of the neighbouring property of the proposed broiler poultry farm we have the following concerns. We vehemently object to the proposal because our house is	Noise, dust, odour, separation distances, bushfire risk, vehicle	**Refer to Responses 1, 10, 6.** **The residence of 1 Muresk Road is 1.9km from the boundary of Module 4.** **Response 15:**	**Noise** Noise impacts resulting from the development are expected to be minimal and consistent with normal agricultural farming and road traffic

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		approximately 2 k's from the site of the fourth facility. • Noise. • Dust. • Smell • Inappropriate buffer zones. • Issues related to lack of personnel on site on a permanent basis ie fire/security 1. The NOISE from the chickens win be heard from our house. The noise will carry as there is no vegetation around the proposal, and it is a very open unprotected site. Given the numbers of chickens, approximately 280,000 in the number 4 facility alone there will be noise. There will also be the noise from the traffic on the gravel road servicing the facility. It will be considerable and travel to our house. The traffic will include noise from farming operation vehicles as well from, the broiler operation.	movements & site security.	**Internal Road Management** Internal roads were built and are maintained by Avon Valley Grading to a high standard (comparable to public gravel roads in the Shire of Northam). The roads are capable of managing the traffic proposed to be generated by the operation. Fire Management – All modules will have a 175m buffer zone free from crop from the sheds, with the closest section being a compacted 25m road around the sheds. This provides a low fuel/ protection zone plus access. In addition, there are currently two full time staff living on the property. One is a current volunteer fire fighter for the Shire of Northam. The farm also owns a fire response unit. Buffer Zones – The Environmental Code of Practise 2004 recommends buffer zones of 100m from the farm boundary. Module 4 is 175m from the boundary.	noise currently experienced in the area. The proponent is required to comply with the *Environmental Protection (Noise) Regulations 1997*. **Dust** The northern corner of 1 Muresk Road may be affected at time by dust generated by the proposal. However according to the dust modelling submitted by the proponent shows the level of dust is low and meets the relevant criteria for acceptable dust impact. The house on Lot 1 Muresk Road is unlikely to be affected by dust. The proponent has modified their proposal and will plant vegetation buffers around each farm module for visual screening and dust dispersal purposes. **Odour** The northern portion of 1 Muresk Road may be affected at times by odour generated by the proposal. The level of odour on 1 Muresk Road is

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		This will include: a) trucks for manure' removal b)trucks for dead chicken removal c)feed trucks d) processing trucks e)workers vehicles f) tractors g)front end loaders h) spray seeders I) harvesters j)grain trucks k) hay/straw trucks l) road maintenance trucks m) tradesmen's vehicles The above list indicates the amount of DUST that will be created by such traffic on a continuous basis. The road is gravel and not purpose built or maintained. <u>2. SMELL</u> 280,000 chickens 2 kms from our house will smell. The very strong - easterly winds in Summer will blow any odours straight across to our house. Manure, urine, dead chickens etc smell, and given the			considered to be acceptable and in accordance with the guidelines as the house is located 1.9km from the development which exceeds the required setback distance of 1km. **Buffer zones** Minimum buffer distances for new poultry sheds and neighbouring land is 100 metres from the boundary of the poultry farm (source - *Environmental Code of Practice for Poultry Farms in Western Australia* – page 11) According to the relevant guidelines the minimum buffer distance for a poultry farm of this size 1km to the nearest sensitive receptor (i.e. a house) - not 1km to the nearest boundary. **Biosecurity** The enforcement of agricultural biosecurity legislation is the responsibility of the Department of Agriculture and Food. All agricultural operators are required to comply with the *Biosecurity and Agriculture Management Act 2007*.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		number of birds housed in the sheds the capacity for smell is huge. 3. INAPPROPRIATE BUFFER ZONES 175 meters from our boundary is an inappropriate buffer zone from 280,000 chickens for the following reasons. 1. Farms 1,2,3 have over 1km of buffer zone from other farm boundaries. Farm 4 will only have *175* metres. If Council approves this intensive chicken farm proposal we request they impose a greater buffer zone-for the following reason': (1) Normal farm spraying operations require the use of herbicides, fungicides and insecticides. Although the proponents feel 100 meters is enough, we feel this is inappropriate considering the nature of the Intensive broiler growing operation. As a result of this there is the potential for our normal farming operations to be impacted in the future.			**Site Security** There will be up to 9 staff on the premises at during operating hours. There are also 2 caretakers that reside in houses on adjoining land owned by the proponent that would be available to respond in the case of an emergency. Each farm module will be fenced to prevent trespassers and predators. **Bushfire Risk** The site is located within the designated bushfire prone area as defined by DFES. The proponent has advised that they will maintain a 175m low fuel buffer zone around each farm module that will be kept vacant from crops. There is a fire response unit kept on site at all times and there are also two full time caretaker staff, including a volunteer fire fighter that live on an adjoining lot that is part of the larger overall farm who are able to respond during a fire emergency. However, as flammable chemicals are proposed to be stored on site for the

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		(2) Our ongoing fertiliser strategy, which may 'include the spreading of poultry manure, would not jeopardise the biosecurity of Farm 4 if the Buffer Zone was increased. Shires with many years' experience eg Serpentine are imposing a buffer zone of between 300-500 meters. Why is Northam risking setting a dangerous precedent with such a small buffer zone? Also given the environmental impact of the dust, noise' and smell of the' facilities, the buffer zone is too small. 4. Lack of permanent on site personnel. The following are concerns with regard to the lack of permanent staff at the 4 sites. 1. The necessity for Risk Assessment plans to deal with an emergency situations: eg fire, breaches of security. 2. Security. Security on site has, not been addressed adequately. Although			farming operations, Officers are recommending that the proponent prepare a bushfire management plan as a recommended condition of approval. **Assessment of the application** Shire Planning Officers and Environmental Health Officers are qualified to undertake assessments of development applications. Assessment of development applications must only take into consideration the matters outlined in Clause 67 of the *Deemed Provisions for Local Planning Schemes*. Other details relating to matters that are not listed planning considerations, such as facts about chicken stress and welfare of the birds are not relevant planning considerations. The results of the odour and dust modelling have been reviewed by an independent expert consultant appointed by the Shire of Northam. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		in the Report it says that each facility will have signage-and a gate. This is not actual security. Given the amount of traffic that will be generated, how, if the facilities are only manned sporadically, will it be monitored and controlled. Fire is a major issue as the farm is cropped and during the hot windy months of the year when the crop is mature and highly flammable there will be no real security and the traffic will not necessarily be farm personnel who have some understanding of fire risk. 3. Fire is not an issue which has been adequately addressed. The Report says that according to the Bushfire Authority this is not a Fire Prone area. This is worse than incorrect because matures crop is highly flammable. This is a cropping farm and has been for approximately 15 years. Every paddock surrounding the Sheds will be in crop. Once the crops			**The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		start to dry out and mature they are highly and dangerously flammable. A fire in mature crops, given the wind and heat, could have catastrophic co-consequences for the area and broiler sheds. Stubble is also highly flammable. Over the Summer, lightning strikes are relatively common and stubble fires bum with ferocity and moves with speed .Given the lack of staff and no one living on site how is broadacre crop farming compatible with Broiler chicken production? If there is a fire, how do the proponents intend to deal with it? Would the neighbours be expected to attend? How would the birds be protected? Historically this has happened before. With the owners of Avon Valley Poultry living in Perth this issue needs to be addressed more adequately as it raises the question of compatibility of an intensive Broiler production within a cropping farm context.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		5. The necessity for an independent report on the viability and compatibility of this Proposal. It is in the interest of both the Shire and the community that such a report is unbiased and independent. The proposal has been paid for by a company employed by the proponent. This means that the report can be both flawed and biased. For Example: The report says that chickens generally don't die from heat stress or disease. No reference is given as to the chicken sheds that the information came from. The town, climate, area, state, are not mentioned. The information could have been taken from a completely, different climate to ours and therefore be irrelevant information to this application. There should also have been comparative information on similar productions in like contexts. What			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		precedent has been set for meat bird production with a cropping context where herbicides, insecticides and fungicides are used and stubble is burnt before seeding? It is in the Shires best interest to have information that will enable them to make: an informed decision about this proposal as this application will set a precedent, going forward, for anyone else wanting to go into similar production. It is imperative that the proponents are called to account on every detail 'of their application, which will affect the community of Northam. <u>An independent assessment and report needs to be commissioned.</u> <u>In Summary.</u> The proponents farm approximately 2,874 hectares on this farm and also own land in York, Jennacubbine and Toodyay. This			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		facility does not need to be within sight of our boundary. The other 3 facilities should not be impacting the local community at all, either visually or environmentally. It is notable that the property owner Mr Gerrard O'Brien lives in North Fremantle. He will not be impacted by any of these issues. The Shire has a social and moral obligation to meet the needs of its rate payers and the community and do so after it has had independent advice from knowledgeable sources.			
41	Battery Street, Muluckine Resident Received 27/4/17	Strongly disagree that wind carries odours are confined to site. The explosion in numbers of flies then mice/rats then snakes. Trucking of floor waste on Northam/York Rd & Odour Issues.	Vermin, Odour	Refer to Responses 1, 10, 7 and 6.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
42	Bowers Road, Toodyay Resident Received 27/4/17	Environment as a private citizen. While not in opposition to the proposal as a whole, I believe further detail is required regarding nutrient management.	Nutrient management	EAMP has been updated to reflect more detail regarding nutrient and drainage management. Refer to Response 13.	**Nutrient Management** The proponent is required to comply with the *Biosecurity and Agriculture Management Act 2007* requirements related to manure handling and disposal.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		In looking at nutrient management a number if points stand out. 1.On p15 of the Environment Report (EMP) section 2.6.1 they note that the soils have a "very very Low to Very Low" Phosphorus Buffering Indices, then go on to say how this is good for crop health. However, this application is not about cropping it is about a broiler farm so either you want a high buffering capacity or the proponent needs to give a more concrete idea of what crops/plantings are going to be added to take up the phosphorus load. 2. While the ability of nutrients to move through the soil profile is addressed no specific measures to prevent surface runoff of nutrient laden water reaching water reaching the Mortlock River in storm evens are given. Given current evidence regarding climate change more frequent extreme rainfall events can be expected in the future.			In accordance with the waste management plan, manure and litter waste will not be stockpiled on site and will be removed from the site and utilised on the proponents other farming operations elsewhere. The free range areas will be kept clear for 1-2 weeks between batches and monitored to ensure that grass cover is maintained. **Drainage Management** It is recommended that a drainage management plan that details how runoff will be contained be required as a condition of approval. **Landscaping** The proponent has modified their proposal and will plant vegetation buffers around each farm module which will assist to absorb nutrients. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		3. On p23 of the EMP the proposal regarding rotation of the free range areas is unrealistic in that it does not take into account seasonal factors. During summer heat severely restricts growth, while in winter front simply hampers recovery of these areas. In all cases water is a limiting factor. 4.Also on p23 the figure of 10% of nutrients being deposited in the free range area would appear to be arbitrary and in error given that the birds are to be in this area for 5 hours per day, >20% of the day. Though it may be argued that this is offset by the fact that the birds spend their earlier growth stage indoors at all times, this line of reasoning fails because they are smaller with a lower nutrient output at this stage. A number of other factors also come into play. My concerns could on the whole be addressed by some well thought out landscaping, perennial planting and cropping			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		solutions to capture and absorb these nutrients. This would involve a mixture of fenced revegetation zones along the drainage lines, a buffer zone of high nutrient uptake perennials around the free-range areas (comfrey or Radiata Pine come to mind but better choices are more likely available) and a clearer plan for overall management of the site. While these measures would involve some additional cost to the proponent these costs are minor when compared to the other costs associated with this project and will provide additional benefits to the proponent through more favourable microclimates around sheds therefore improved growth, the possibility of providing supplementary green feed to birds, dependent on species selection, and improved pest control through encouragement of insectivorous birds.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
43	Loton Drive, Northam Resident Received 27/4/17	The proposal impacts on the character of the area and environmentally to surroundings.	Character and visual amenity	Refer to Response 1.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
44	Wellington Street, Northam Resident Received 27/4/17	I wish to register my opposition to this plan. The farm is not suited to being so close to residential property. Please advise what can be done to move this further out.	Location	Refer to Response 1.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
45	Roediger Drive, Northam Resident Received 27/4/17	As residents at this property for over 20 years, we already face considerable discomfort from annual burn offs (smoke & ash inhalation) and year round dust problems, we don't believe the 3km distance from Module 1 & Module 4 will be anywhere near adequate to prevent air-borne pollution (dust, bacteria, insecticides & odour) and we state, absolutely, our objection to this proposed development. As prevailing winds in this area are mostly south-east or southerly, we believe we will be impacted by	Dust, health impacts, odour, waste management, Nutrient Management.	Refer to Response 8, 14 and 10.	See response to submission 4. **Deceased Birds** The proponent has modified their proposal and will not be burying a deceased birds on the site. All deceased birds will be stored in refrigerators and removed to a recycling facility in Mandurah. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		both of the above mentioned modules. • Accepted mortality rate of some 2,688 birds per batch (Environmental Assessment & Management Plan Appendix A, page 26 point 4.6). • No daily pick up of carcasses. On site disposal in a pit, back filled immediately (Environmental Assessment & Management Plan Appendix A, page 26 point 4.6). If any 56 day grow out period there is a possible 2,688 carcases that will not be picked up on a daily basis, how often will they be picked up? How long will the trench be open? There is no information in regard to this and the possible odour would be unacceptable.			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		We also have concerns over nutrient management, with the sheds only being emptied at the end of each grow out cycle & 10 exhaust fans expelling dust and nutrients into a howling south-easterly or Southerly wind to be spread across the properties on the Northern side of the proposed development and the town as well. We don't believe the environmental concerns have been adequately addressed, and call on the Northam Shire to reject the proposed development.			
46	Chidlow Street, Northam Resident Received 27/4/17	Do not approve of chicken factory. No factory farming in Northam. Free range chickens only. No Chicken factory in Northam.	Personal opinion	The proposal is for a Free Range Poultry Farm.	The proposal is for a free range poultry farm. Unsubstantiated claims and personal opinions cannot be considered when making a determination in regard to a development application. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
47	Chidlow Street, Northam Resident Received 27/4/17	This proposal is ill advised and too close to town.	Location	Refer to Response 1.	See above comments in relation to the location of the development. Unsubstantiated claims and personal opinions cannot be considered when making a determination in regard to a development application. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
48	Chidlow Street, Northam Resident Received 27/4/17	Allergic to most manmade chemicals. Too close to town will put the children at risk. Asthmas & Allergies. More mice, rats, foxes and our 'River'.	Health Impacts, Vermin, Environmental impacts.	Refer to Responses 1 and 3.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
49	Chidlow Street, Northam Resident Received 27/4/17	As an occupier of above property this farm will reduce my quality of life with air pollution. Proximity to water catchment and increased traffic. This project is having a detrimental effect on people in Wanneroo and is too close to Northam townsite.	Health Impacts, environmental impacts, traffic impacts, location.	Refer to Responses 1, 10 and 6.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
50	Rogers Road, Northam Resident	With urban expansion, many intensive industries (such as poultry, pigs and abattoirs) are pressured to relocate. In the past,	Water supply	**Refer to Response 9.** In addition the project hydrologist adds: Statement about reasons that Northam is not included as	**Water Supply** The Department of Water has advised that there is no requirement to obtain a licence for the bore as the site is

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Received 27/4/17	this has seen industries move south and north of Perth along the coastal plain, but with more demand for housing near the ocean, there will be pressure to develop industries east to still be within reasonable travelling distances to processing facilities and Perth markets. Peri-urban areas such as Northam will have many proposals put to them. The forward thinking O'Briens broiler unit is one of many to come, so it is important to ensure key resources are protected. Water is one of these key resources. The Department of Water has 'proclaimed' water areas where it is necessary to seek permission to access ground water and alter surface water movements. Northam is not in a proclaimed water zone for two reasons: i) There has not historically been a competing demand for water in this area as		proclaimed area is a personal opinion. The fractured rock aquifer proposed to be used has been pump tested and is hydrogeologically understood. A program called FC (Flow characteristic) has been used to analyze the test pumping of the aquifer. The hydrologists have calculated the recharge from rainfall to get a sustainable ongoing yield for the abstraction so the aquifer can be appropriately managed and be sustainable for the life of the project. Long term monitoring will also be done to ensure the sustainability, water quality and yields of the fractured rock aquifer. The water supply will be tested and appropriately managed. Regarding the comment on recent earthquakes: The fracture zones comprising the aquifer have been present for millions of years since faulting occurred in the granites. Not sure what is meant by "earthquakes changing water patterns".	located within the Karri Groundwater Area, which is unproclaimed under the *Rights in Water and Irrigation Act 1914*. **Water Management** The management of the bore is the responsibility of the proponent. The Department of Water has advised that there is no requirement to obtain a licence for the bore as the site is located within the Karri Groundwater Area, which is unproclaimed under the *Rights in Water and Irrigation Act 1914*. Therefore the Department of Water will not be inspecting the bore. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		there is sufficient recharge for normal rural use. Intensive industries may change this; and ii) The area between Northam and York is in the fractured rock zone where, unlike the coastal plain to the west or sandplain to the east, it is incredibly difficult to determine the hydrology (size of the supply, recharge zones and relationships of different aquifers). It would take considerable resources to map and monitor water use in this area. The proposal does not indicate how much water is required (either daily or annually) for: • drinking water for the chickens; • Watering the lawn in the free-range areas (5m		Abstraction of this water will not draw down in Northam nor impact the saline aquifer in Northam. Abstraction will be confined to the local area and not impact on other water supplies.	

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		each side of the 24 160m sheds = 38400m2 of lawn); • Washing down and cleaning out of the sheds; • Evaporative air-conditioning; as well as • General farm use around the site (spray operations for cropping and livestock). It is likely the amount of water required by the broiler unit will exceed 700 000 litres per day. This is a colossal draw on undefined and unknown ground water aquifers. Water is a vital component for this poultry business, however in the fractured rock zone, it is a potentially fickle resource (unknown size of the aquifer, earthquakes changing water patterns, saline movement from the alluvial river soils due to draw down). My concern is not for the current proposal location for water supply but for when, or if this supply is			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		exhausted, and the proponent looks to other supplies. As an immediate neighbour, my business relies on sustainable groundwater use and this supply could be extinguished if overdrawn. (See pg 18 of EMP Report saying '*small quantities of potable water can be found but this of is limited significance*', this water supply is vital to my business). Replenishment of these defined aquifers is limited (pg 25 EMP Report confirms '*relatively low annual rainfall)*. Current legislation does not require water controls in this area. I ask that the Shire consider how water use will be monitored, and/or sustainable use ensured, for this new broiler project and future proposals, to enable current businesses to continue.			
51	Woodley Farm Drive, Northam Resident	Concerned about smell, noise, pollution to area, Effect on house prices, lack of jobs lack of jobs to area.	Odour, Noise, property value, employment	Refer to Responses 10, 4.	See response to submission 4. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Received 27/4/17				
52	Woodley Farm Drive, Northam Resident Received 27/4/17	I am a private citizen, ratepayer and resident of Northam. I believe this development will have a detrimental effects on Northam; environmentally, for personal health, aesthetically, with relation to devaluing property, and for longer term development and expansion of Northam as a super town. One only needs to look at existing broiler farms (i.e. Wanneroo) and see that they are not conducive to being run near residential developments. The poultry farmers own code states they should avoid urban areas. I do not support a development with such dire consequences/ impact on the Northam townsite and its residents. The odour and airborne debris would be disastrous for the valley.	Health risk, visual amenity, property value	Refer to Responses 1, 10.	See response to submission 4. The proposed developed is not located within an 'urban area'. The nearest module on the subject site is 3km from the southern edge of the Northam townsite boundary on land zoned 'Rural'. The proposal complies with the minimum separation distance of more than 2km to the nearest house. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
53	Crorkan Road, Northam Resident	I am taking the time to have my say even though I strongly feel like it will be a waste of my time. The shire will do whatever it wants and	Location, Separation distances, vermin,	Refer to Responses 1, 3, 7 and 10	See response to submission 4. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Received 27th April 2017	use or make up a "Clause" or "classification" to substantiate its position. I am strongly opposed to the proposed free range Broiler Poultry Farm. My main objections are to do with the closeness of the proposed free range Broiler Poultry farm to the town of Northam and residents in Northam, and the multiple issues this closeness could potentially bring the residence of Northam and especially my children and I being so closed to the proposed site. I am concerned with an increased number of vermin, foxes, insects and snakes, feral cats and wild dogs attracted to the 720,000 birds (And 373524 dead birds) this proposed business generates each year. The possibility of disease, smells, gasses, fumes and chemical drift coming from the proposed site,	odour, waste management, health impacts, employment, consultation		**The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		affecting myself and my Children's health. The fact that I have spent a lot of money, locally building my dream home in a nice location with a beautiful outlook and the possibility that this home is going to be affected and my way of life compromised by the above mentioned factors. I also don't understand what positive benefit this proposed business has in Northam, there will be little to no local jobs, it won't make the town a more desirable location to live, it does the complete opposite in fact. Why isn't the shire more focused on building and creating and giving opportunities to businesses that make Northam a better town to live in, that will promote the town in a positive light. I am also disappointed that I found out about this last night through Facebook. The right thing for the shire to do was to notify the home			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		owners in the town as it will affect us all but as usual it has been kept quiet as possible so that I and others have no time to put together a more thorough disapproval letter to you.			
54	Crorkan Road, Northam Resident Received 27th April 2017	I am against the above proposal due to the smell from the animals dust and fumes causing a health hazard. We live in the country for fresh air not polluted air. The proposal will make Northam a less desirable place to live which will affect my work as I am a small business owner. It will also affect my property prices as I am currently trying to sell a property in town. When I phoned to enquire why I wasn't notified about this I was told that because it was set back minimum 1km the shire wasn't required to let me know, I find this appalling because if you look at the map this area backs right onto a property that I own and am building on. And I know that the smell, gasses, fumes from such a	Odour, property value, health impacts, consultation	Refer to Responses 1, 10, 2 and 4.	See response to submission 4. **Location** The subject site is not adjacent to Lot 800 Crorkan Road. The closest farm module is over 2km from Lot 800 Crorkan Road. **Advertising of Application** This application has been advertised in accordance with Schedule 2 Part 8 Clause 64 (3) of the Regulations and Local Planning Policy 20 – Advertising of Planning Proposals which included an advertisement on the Shire's out for comment page on the website. The Shire does not get to 'pick and choose' the development proposals submitted to the Shire. The Shire is legally required to consider all development applications.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		large development will travel more than 1km especially with the winds we have. That brings me to my next point about Northam being in a valley, if the wind is traveling that way the toxic smell and pollution is going to travel into the valley and be trapped in there affecting the whole of Northam, you only have to look at the valley in the winter to see the fog settled in the valley or the smog from the house fires, and imagine that was a toxic mixture from the chook excrement. Anyway due to the short amount of notice I have had to look into this proposal these are the few point that are my immediate concern. I feel that the shire should be putting more time and effort in building and approving more positive ventures in the town and not be considering proposals that have a negative outcome for the majority of its rate payers.			**Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
55	Scott and Rochelle Horlin	Please see below submission expressing our concerns and opposition to the proposed poultry	Odour, Noise, Visual Impact	Refer to Responses 1, 10, 8, 13 and 14.	See response to submission 4. **Visual Amenity**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	48 Loton Drive, Northam Received 27th April 2017	farm. We are interested in any feedback or further consultation regarding the proposal that has been put to the Northam Shire. My husband and I are private citizens, landowners/residents in Woodley Farm & we believe we will be affected by the proposed poultry farm. We are concerned about odour, noise and visual impact. Until our concerns (and those of others in our town) have been addressed, we do not wish for this proposal to go ahead. Please see details of our concerns as follows: We are concerned about the odour that the poultry farm will produce, as we regularly receive strong winds from the south & east, the noise of the ventilation system and movement of large vehicles. The visual impact of 16 extremely large sheds on the hills across our horizon is not a nice thought either,			The proposed poultry sheds are located 3km from the Woodley Farm Estate and the low height of the sheds mean that the sheds would not be a dominant feature in the landscape that would affect visual amenity for residents in the Northam townsite. The other three farm modules will not be visible from 48 Loton Drive, Northam due to distance and the topography of the undulating land providing natural screening. Landscape screening will be planted around all farm modules. **Deceased Birds** The proponent has modified their proposal and will not be burying a deceased birds on the site. All deceased birds will be stored in refrigerators and removed to a recycling facility in Mandurah. **Waste Management** A waste management plan will be implemented at all times. The proponent will remove manure from the premises via covered trucks

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		when we chose to live here because of the rural outlook. Submission: We have read as much as we can of the proposal put forward for the establishment of a free range poultry farm to understand what is being established, how it will be managed and how it will impact us, since learning of its existence late on Anzac Day. We are opposed to the proposed poultry farm for a number of reasons and would like the Shire to consider these views. We understand that the farm adheres to government regulations regarding distance from residential areas, waterways and groundwater, however by their placement on hilltops, it seems they will be more exposed to strong weather conditions, and the smell from the sheds and subsequent farm activities will be easily spread across the area. In			without the need for stockpiling on site. **<u>Recommendation</u>** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		the 3 years since we started building on our property, the most consistent wind direction is from the south and east, which will pick up the smell from 4 to all 16 sheds located in its path most days, all within 3-4km from our house. The smell is generally worse in summer on chicken farms. Spent litter from the sheds, and burial of dead chickens also concern us. The rocky hilltops in the area would limit locations of pits (on hilltops to avoid waterways and groundwater) and we believe it will attract vermin like foxes and snakes to the area. Will there be a cool storage area for dead animals until a large pit is dug? Or will the animals be stockpiled until burial? We have not seen an indication of how this will be managed in the reports. While the nearest shed is approximately 3.2km from our property, we are aware that the potential for stockpiles of dead animals and burial pits would be located more			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		closely to ours, and other residential land. We understand that the chicken manure is a practical method of fertilising the surrounding agricultural land and effective use of this by-product. However we have questions and concerns as to how this will be done? It is not clear whether best management practices will be adopted, will this be stockpiled or contained in a shed (to minimise odour and attracting flies) until dispersal? Will the operator spread before rainfall to optimise effectiveness and minimise dust and odour? Could you provide clarity on this? This provides additional concern for us regarding odour and any potential airborne particles drifting towards our home. Would you consider the introduction of vegetation buffers alongside the sheds to contain odour and noise? I'm surprised there has been no mention of this			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		in the environmental report or planning report. We believe this would also benefit the sheds and production by providing additional shade for the poultry and reducing the impact of hot weather in summer months. Which leads to our other concern of noise. In looking at the shed diagrams, they are extremely large and would require significant ventilation, and cooling, how noisy will this be? In the extreme heat of summer we expect a cooling system for each shed will be running constantly, can we expect a constant drone in the distance to accompany the stench of poultry manure as we sit on our back verandah 'enjoying' a BBQ with friends? As long as the chickens are happy I suppose ... We regularly hear the tractors/machinery on neighbouring farmland some distance from our house, which we accept as part of rural living, however it is background noise			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		and limited to a few times a year. The noise of trains and traffic on the highway similarly are insignificant to us as they are occasional and ebb & flow. The noise of the ventilation for the sheds we imagine would be constant, day and night. The Department of Agriculture or Wheatbelt NRM would no doubt be able to provide advice on placement of vegetation, species type and number of trees needed to ensure a benefit to the operation and a reduction of odour and noise to neighbouring properties. Also, weather the poultry farm would have an impact on our waterways, specifically the Mortlock River. We also have concerns over the impact of the site on waterways and ground water. The leaching of phosphorous and nitrogen through groundwater to the Mortlock River may be slow, but the summer rains, that are			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		increasing in occurrence and rainfall amount, wash lots of topsoil and its nutrients across the surface of the ground, and downhill very easily, and with the 'free range' area being covered in manure and probably very little grass/groundcover during summer months this would send a high nutrient and sediment load into waterways very quickly. Do you have similar concerns? We are surprised the Environmental Report indicated that none of this would be an issue. We see how much of our topsoil moves in summer rains and the impact of this would be multiplied significantly over the area of free range activity, number of chickens and the high content of nitrogen & phosphorous in the chicken manure being, washed into waterways. What is the possibility of expansion? The Environmental Report was for 24 sheds, but the			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		proposal indicates 16 are planned at this stage. Is it likely there will be a proposal in future for expansion? Will there be an opportunity for community consultation and feedback at that point? We are concerned that if this proposal goes ahead as described the impact will be unpleasant, then if they expand further in a few years' time these problems will be compounded and we will not have the option to express our view on how the poultry farm affects us. If the poultry farm proposal is accepted and construction goes ahead later in the year as planned, we are concerned that the things we love about our home, quiet, country life, fresh air, beautiful farm & bushland views and a backyard that our kids love to play in every single day, will be affected. We have worked hard to get to where we are, we are concerned for our quality of life, and the value of our property, and			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		all that we have worked hard for, suddenly being reduced in value and quality. Please consider this proposed poultry farm very carefully for the sake of our town and its people. We all want to see businesses develop and people achieve success, we also want to live in a great town, and happy community. In looking up information to prepare this submission we have noticed many cases where poultry farms have been contentious and problematic for Shires. Often resulting in their closure due to public protests, largely due to smell and noise, as urban expansion moves into rural areas. We have expressed our concerns and asked questions, and have many other things we are unsure of until they are in place, but we don't want to wait until this project is underway before saying something. We would like to see			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		Northam Shire engage well with the community to ease these concerns, and address the issues being raised. We would also like a clear explanation from the proponent in answering these concerns. We all want Northam to prosper and maintain the qualities and character we value in our town and community. Documents reviewed in preparing this submission include the Environmental Code of Practice for Poultry Farms in Western Australia (May 2004); Meat Chickens: RSPCA Approved Farming Scheme Standards (May 2013); Ch 6 of Cessnock Development Control Plan (2010); Lilydale and Mt Barker Free Range Chicken websites.			
56	Marshall Place, Northam Resident Received 27th April 2017	We would like to make know our objection to the proposed free range poultry farm We are concerned on the location bordering a residential area.	Location, odour, noise, property value	Refer to Responses 1.	See response to submission 4. The proposal is not in breach of the required separation distances. This development proposal is setback more than 1.1km from the nearest house and therefore is considered to

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		See attachment below stating rural land a suitable distance from metropolitan land should be sought. The poultry farm proposal is in breach of this. This land could have future potential to accommodate residential expansion needs - in accordance with the ambitions of the 'Super Town' plan to encourage population growth from relocation and decentralization from the metropolitan area. We believe, the proposed farm will be too close to residential land leading to our resale value decreasing. As well as the smell and noise affecting our quality of life. *2.1 Siting and buffers* *As poultry farms require ready access to feed suppliers and processors, rural land within a suitable distance of the*			be appropriately sited in accordance with the EPA Guidelines, Industry Code of Practice and State Planning Policy 2.5. State Planning Policy 4.3 as quoted in the submission was repealed and replaced by State Planning Policy 2.5 – Rural Planning in December 2016. Therefore the quoted legislation is not applicable. It is considered that the Northam townsite boundary is unlikely to be expanded any closer to the poultry farm beyond the existing boundary to the south-east due to the steep topography which make development difficult. The Shire's Planning Strategy does not identify and further intensification of residential development in the Muluckine area with the area designated to remain rural into the future. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		metropolitan area should be sought. At the time of preparing the Code the following Perth regions were identified as possible future localities for poultry farming – Wanneroo, Bullsbrook, Muchea, Gingin, Mundijong, Chittering, Serpentine and Baldivis. *Statement of Planning Policy 4.3 – Poultry Farms Policy (1998) provides guidelines for the siting and location of new poultry farms and expansion of existing farms. Applicants should refer to and incorporate the requirements of SPP 4.3 into their applications. An extract from the guideline follows.* *"New poultry farms should avoid:* • *Existing or proposed residential areas and land identified for future residential development*			
57	Loton Drive, Northam Resident	I am not happy about the smell that will occur to my property and area due to the amount of poultry	Odour, Visual Amenity	This submission has not been addressed by the proponent as it was received after public advertising period.	See response to submission 4. **Recommendation**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
	Late submission received 28/4/17	and also instead of the lovely bushland it will be sheds.			**The submission is noted. Modification of the proposal is not recommended.**
58	Loton Drive, Northam Resident Late submission received 28/4/17	We are opposed to Animal Husbandry Intensive – Free Range Broiler Poultry Farm because of the odour, noise, increased vehicle movements and also the de-valuation of our property. We chose to live here because of the fresh air and peace and quiet.	Noise, traffic, odour, property value	This submission has not been addressed by the proponent as it was received after public advertising period.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**
59	Loton Drive, Northam Resident Late Submission Received 1/5/17	Opposing chicken farm near Woodley Farm Estate due to environmental and health issues. We received notification of the Ingham Chicken Farm and we would like to object to this it is near our property due to smell, noise and possible change of the tranquil environment. When we bought the land at Loton Drive years ago it was very expensive and to build here in Northam, it is also very expensive. We feel this may negatively impact our re-sale value. In addition, our rates are overly expensive and if an industrial type are going to	Odour, Noise, Property Value	This submission has not been addressed by the proponent as it was received after the public advertising period.	See response to submission 4. **Recommendation** **The submission is noted. Modification of the proposal is not recommended.**

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		become developed in our vicinity then our rates should be reduced. We bought and built in this area as we wanted to live somewhere peaceful, quiet and pollution free, and this may impact this lifestyle negatively.			
External Agency Comments					
60	Department of Water	The subject site is located within the Karri Groundwater Area which is unproclaimed under the Rights in Water and Irrigation Act 1914. Therefore there is no requirement to obtain a groundwater licence for superficial groundwater abstraction. The subject site is also within the proclaimed Avon River Catchment. The taking of surface water requires a licence and the interference with the bed and banks of waterways requires a permit from the DoW. The DoW assumes that the Local Government and/or the Department of Environment Regulation will be ultimately responsible for the protection of	Advice Only	Noted	Noted

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		the environment either through relevant planning legislation or the Environmental Protection Act 1986. The Department of Water (DoW) has reviewed the additional information provided and is satisfied with the proposal. The DoW therefore supports the proposal and has no further comments.			
61	Main Roads WA	In reference to your correspondence of the 5 April 2017 with attachments, Main Roads WA (MRWA) has determined from the information provided that the proposed scheme plan will not have an adverse impact on the MRWA network and therefore advises no objection to the proposal subject to the following; • MRWA will not approve any additional access from the proposed development on to Northam Cranbrook Road (M031) and all access	No Objection	Noted	Noted

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		arrangements shall be obtained from existing conditions.			
62	Department of Health	Thank you for your letter of 5 April 2017 requesting comment from the Department of Health (DOH) on the above proposal. The DOH provides the following comment: *1. Water Supply and On-site Wastewater Disposal* The development is to have access to a sufficient supply of potable water that is of the quality specified under the *Australian Drinking Water Quality Guidelines 2004*. The proponents should be advised that approval is required for any on-site waste water treatment process. The necessary requirements may be referenced and downloaded from: http://ww2.health.wa.gov.au/Articles/U_Z/Water-legislations-and-guidelines http://ww2.health.wa.gov.au/Articles/N_R/Recycled-water *2. Food Act Requirements*	Advice Only	1. Appropriate potable water will be supplied for drinking water for staff. In addition, appropriate effluent disposal will be provided for each module. Scheme water is available throughout the farm and currently services two houses on the property. 2. The operation will comply with Food Act requirements. 3. The industry Code of Practice had been used to develop management planning and proposed practices for the operation. 4. Dead bird management is outlined in the EAMP document and Response 8.	Noted.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		The primary production is to comply with the provisions of the *Food Act 2008* and related code, regulations and in particular 'Food Standard 4.2.2' available from: https://www.legislation.gov.au/Details/F2012L00292 *3. Industry Code of Practice* It is recommended the proponent complies with the' *Environmental Code of Practice for Poultry Farms in Western Australia*' which can be viewed from the Department of Water website at: http://www.water.wa.gov.au/_data/assets/pdf_file/0010/514O/47509.pdf This document outlines a number of public health concerns that need to be appropriately managed including buffer zone requirements, dust management, odour, noise and pesticide application. *4. Dead bird and Manure disposal*			

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		There are requirements under the *Biosecurity and Agriculture Management Act 2007* and in particular the requirements for a Stable Fly Management Plan related to manure handling and disposal. Any measures related to the disposal arrangements for dead birds are to be documented and included in any approval by the local government.			
63	Department of Agriculture & Food	In principle, the Department of Agriculture and Food Western Australia (DAFWA) supports the expansion of the poultry industry in Western Australia, provided that the activities undertaken by the developing enterprise does not lead to environmental degradation or negative impacts on adjacent agricultural businesses.	Advice Only	Noted	Noted.
64	Environmental Protection Authority	The Environmental Protection Authority (EPA) does not generally provide comment on planning applications. However in this instance, the Office of the Environmental Protection Authority	Advice Only	Noted	Noted.

Shire of Northam Local Planning Scheme No.6
Free to Range Broiler Poultry Farm – Lot 13 Northam-Cranbrook Road, Northam
Schedule of Submissions

No.	Name	Copy of Submission	Key Themes Identified in Submission	Applicants Response	Officer's Comment and Recommendation
		(OEPA) provides the following comments: The proponent has undertaken environmental investigations and considered the issues of biosecurity, noise, dust, odour, fauna, flora and vegetation, nutrient management and inland waters environmental quality; Lot 13 is mostly cleared and the proponent proposes no additional clearing of remnant a separation distance of 1km is provided, which is consistent with the EPA's Guidance 3 *Separation Distances between Industrial and Sensitive Land uses*			
65	Department Environment Regulation	No comment		Noted	Noted.

12.2 GREAT EASTERN HWY IMPROVEMENTS, BAKERS HILL – BLACKSPOT FUNDING OPPORTUNITIES

Address:	Nil.
Owner:	N/A
File Reference:	6.1.1.160
Reporting Officer:	Clinton Kleynhans Executive Manager Engineering Services
Responsible Officer:	Clinton Kleynhans Executive Manager Engineering Services
Voting Requirement	Simple Majority

BRIEF

The purpose of this report is for Council to review the final proposed design completed by Main Roads for the Great Eastern Hwy Improvement Works project in Bakers Hill. Also to advise Staff if Council wish to pursue available Blackspot funding to complete the portion of verge works which has been identified as Shire of Northam responsibility.

ATTACHMENTS

Attachment 1: Great Eastern Hwy Improvement Works, Bakers Hill.

BACKGROUND / DETAILS

The proposed works have been the subject of ongoing discussions and design reviews between the Shire of Northam and Main Roads for several years, with this most recent design now having materialised to a point where Main Roads have scheduled the commencement of their portion of works, this will be staged over the next few years. (Attachment 1)

Included in these proposed works is an upgrade to verges through the townsite. Ordinarily the Shire is responsible for the maintenance of the verges through Bakers Hill from the back of the kerb line to the private property boundary line. I.e. footpaths. However as this was a Main Roads driven project and the verge works are considered upgrades, Staff have previously advised Main Roads that the Shire was of the opinion that Main Roads should fund these verge works.

During the planning phase of the project an opportunity arose to obtain Blackspot funding for the project, although having not accepted responsibility for these verge works staff agreed in principle to use the Shire's position as leverage for the submission, agreeing if successful, Main Roads would

administer the funding for the delivery of the Great Eastern Hwy works inclusive of verge works.
Most recent correspondence from Main Roads on 8th May 2017, has advised if the Shire wish to secure the available 2016/17 blackspot funding amount of $200,428 for Stage 1 works, Council will need to contribute 1/3 amount of $100,214 giving a total amount of $300,642

It should be noted by Council an additional Blackspot funding submission will be required for 2017/18 to complete any outstanding works forming Stage 2.

CONSIDERATIONS

Strategic Community / Corporate Business Plan
Objective R1: Provide and support an effective and efficient transport network.
Strategy R1.1: Plan for the provision and delivery of transport services and infrastructure in the Shire in close consultation with the State and Federal governments and the local community.
Strategy R1.2: Maintain an efficient, safe and quality road network.

Financial / Resource Implications
Included in the current 2016/17 annual budget is Project # 3076 Yates Street with a Materials/ Contracts provision of $64,500. As Main Roads are performing the relocation of this road as part of their works this amount of $64,500 can be utilised by Council. The remaining required amount of $35,714 can be obtained from Road Reserve with an available amount of $99,106

It should be noted by Council an additional Blackspot funding submission will be required for 2017/ 18 to complete any outstanding works forming Stage 2.

Legislative Compliance
N/A.

Policy Implications
Nil.

Stake Holder Engagement / Consultation
N/A.

Risk Implications
Should Council decide not to proceed with the verge works which have now been identified as the responsibility of the Local Government, there is a risk that the Shire will receive negative community feedback that the Shire of Northam potion of works are incomplete.

OFFICER'S COMMENT

With consideration of the available Blackspot funding amount $200,429 it is staff's recommendation that Council utilise this opportunity in having verge works completed and delivered as part of the Main Roads portion of works.

RECOMMENDATION

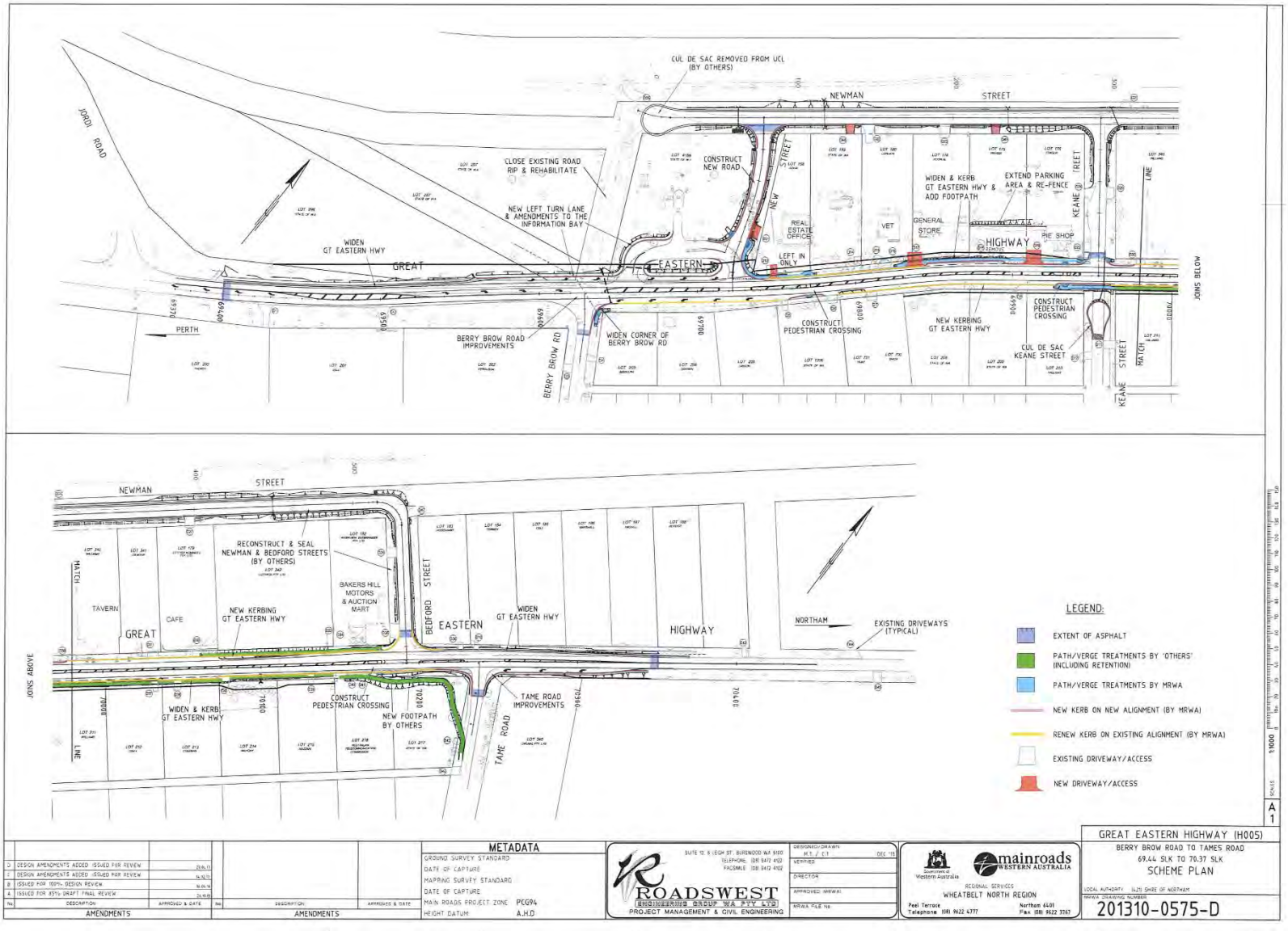
That Council:

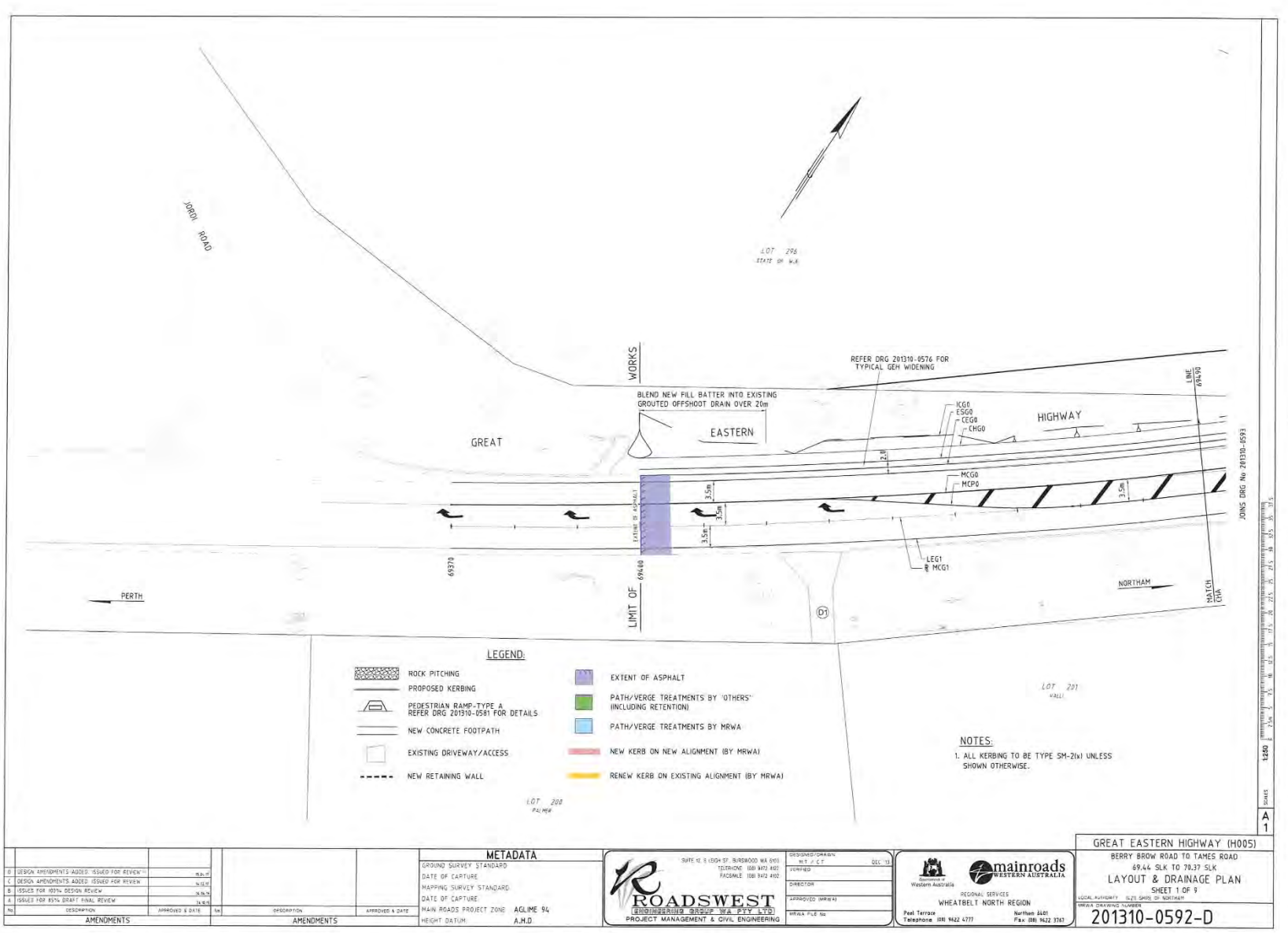
1. **Endorse the 1/3 contribution amount of $100,214 to secure the available Blackspot funding of $200,428 for 2016/17 to complete the associated Shire verge works for the project, with the following funding sources to be utilised:**

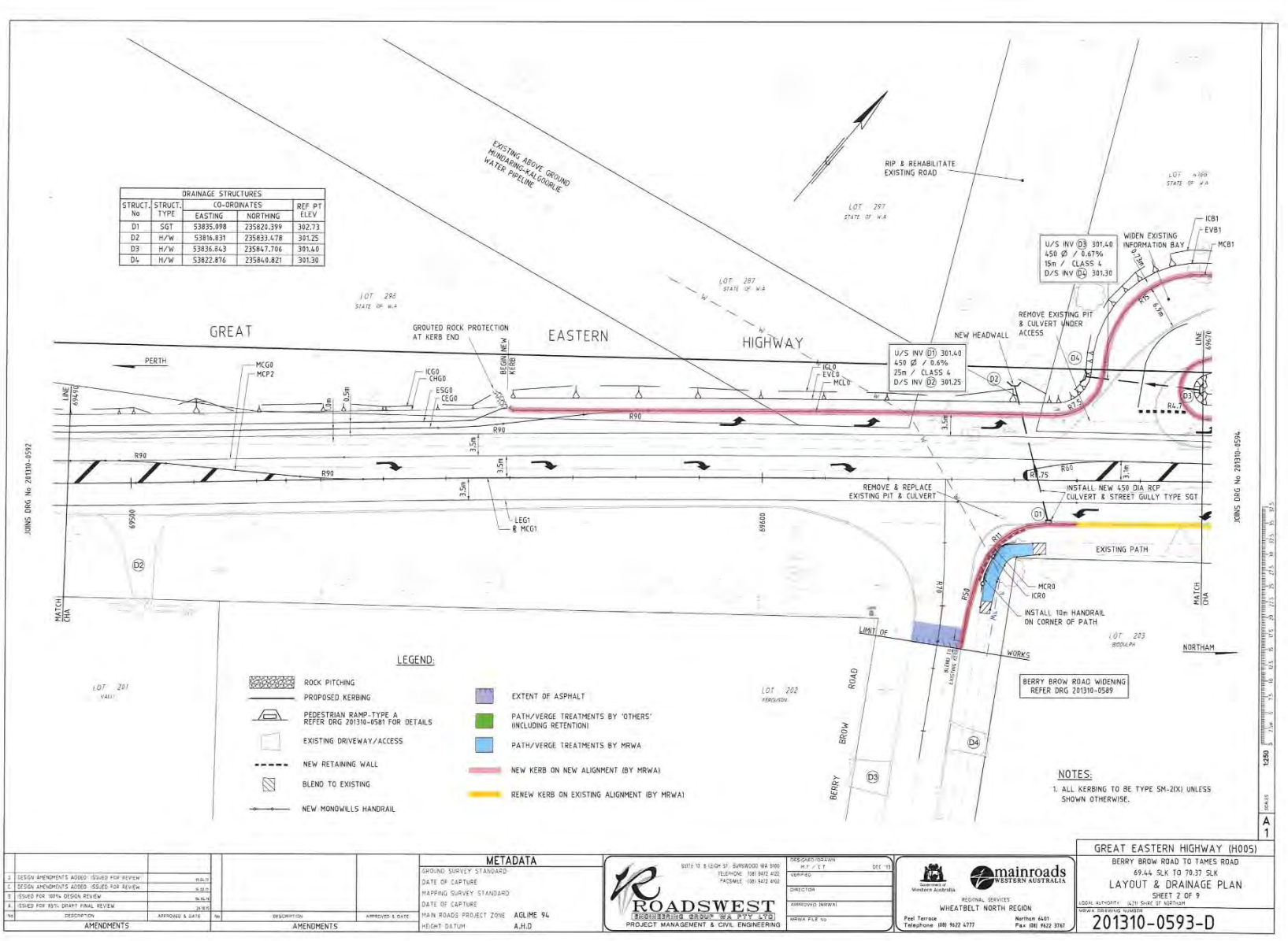
   Job # 3076 Yates Street amount of $64,500
   Transfer $35,714 from the Road Reserve

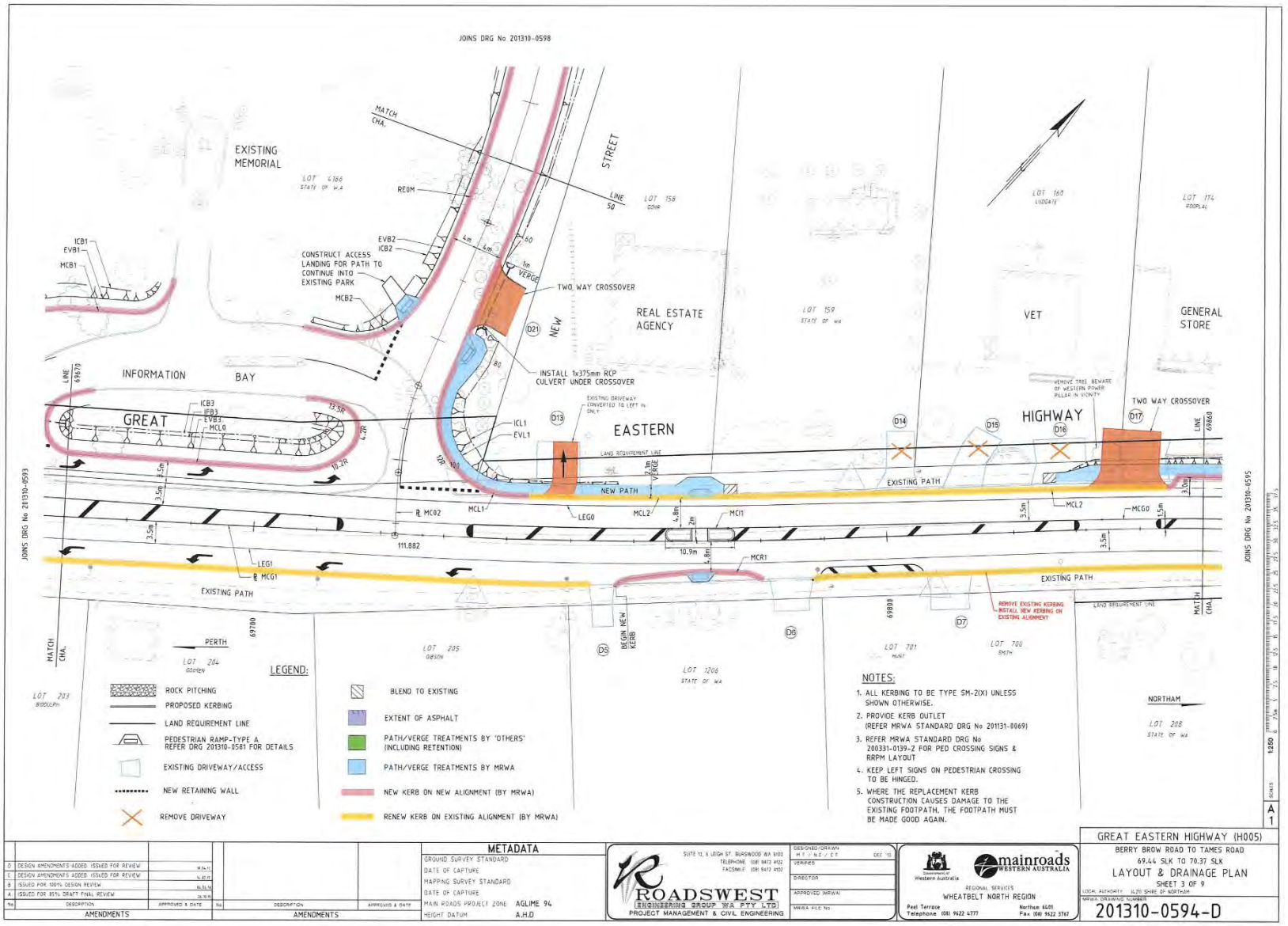
2. **Subject to confirmation from Main Roads for final project costing authorise staff to submit a Blackspot application to secure funding for Stage 2 works in 2017/18 to complete the associated Shire verge works for the project.**

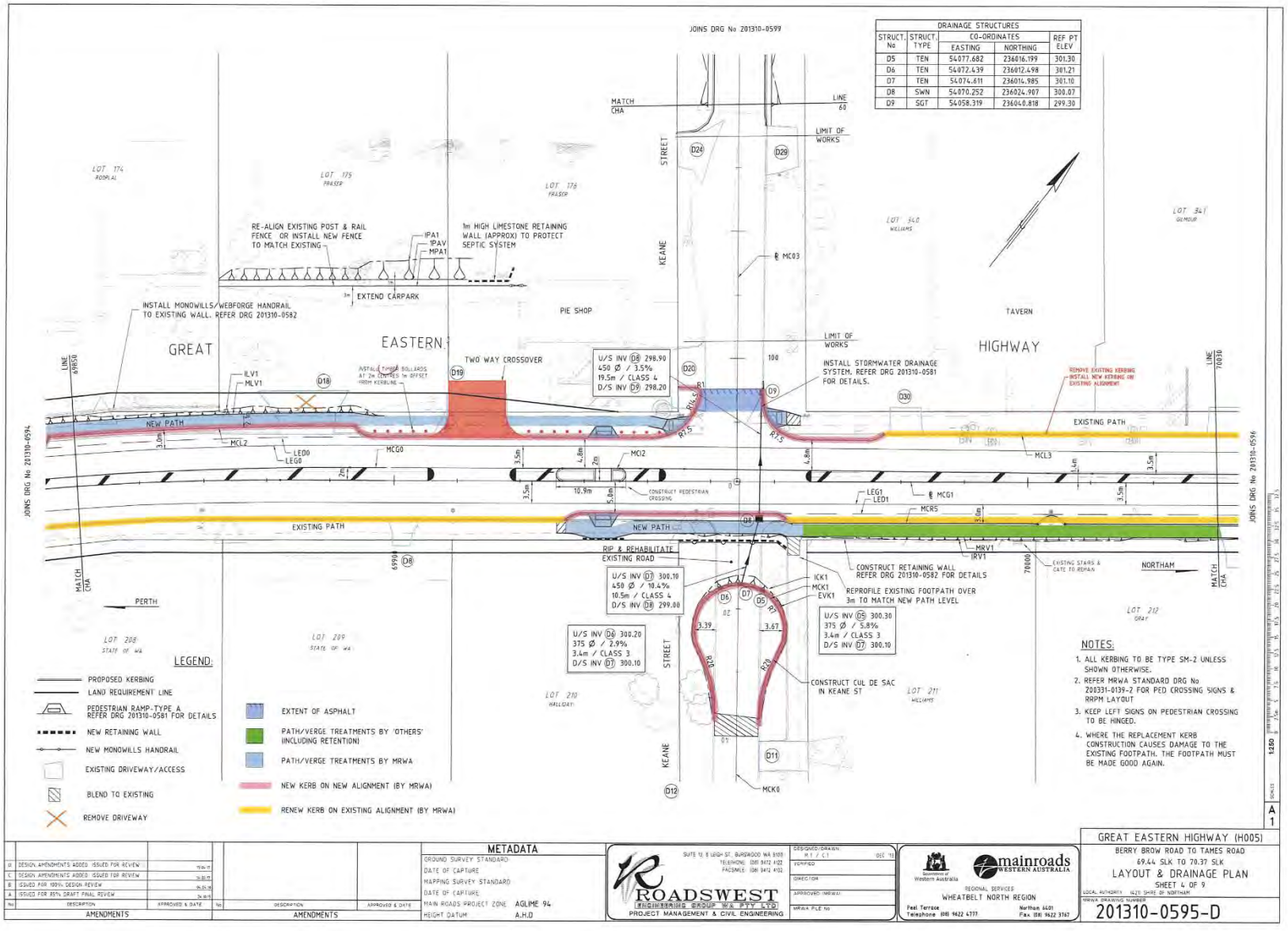
Attachment 1

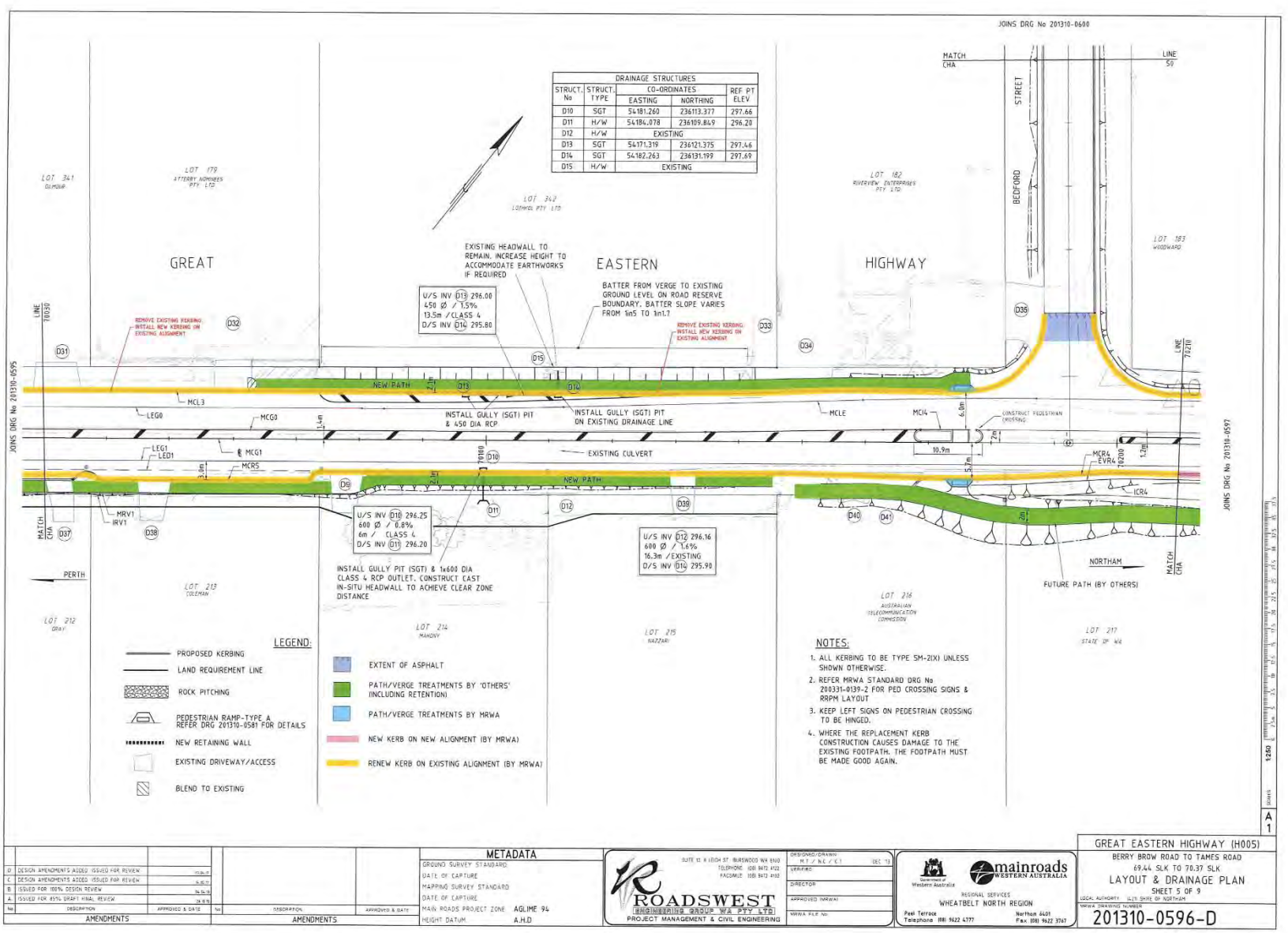


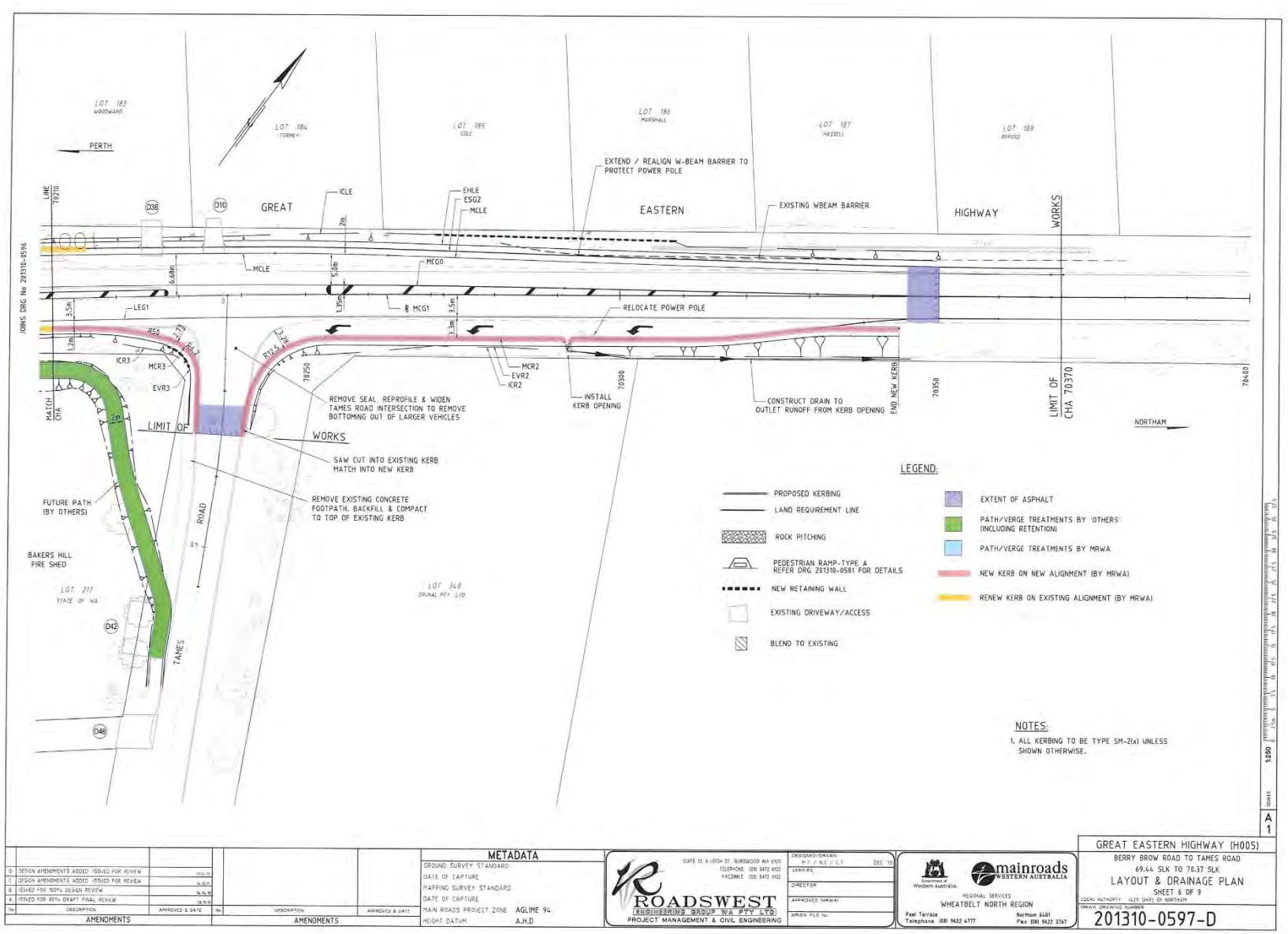

JOROI ROAD
LOT 296
STATE OF W.A.
WORKS
BLEND NEW FILL BATTER INTO EXISTING GROUTED OFFSHOOT DRAIN OVER 20m
REFER DRG 201310-0576 FOR TYPICAL GEH WIDENING
GREAT
EASTERN
HIGHWAY
LINE 69490
JONS DRG No 201310-1593
KCG0
ESG0
CEG0
CHG0
MCG0
MCP0
2.5m
3.5m
3.5m
3.5m
EXTENT OF ASPHALT
69370
LIMIT OF 69400
LEG1
& MCG1
PERTH
NORTHAM
MATCH CHA
D1
LOT 201
WALL
LOT 200
PALMER
LEGEND:
ROCK PITCHING
PROPOSED KERBING
PEDESTRIAN RAMP-TYPE A REFER DRG 201310-0581 FOR DETAILS
NEW CONCRETE FOOTPATH
EXISTING DRIVEWAY/ACCESS
NEW RETAINING WALL
EXTENT OF ASPHALT
PATH/VERGE TREATMENTS BY 'OTHERS' (INCLUDING RETENTION)
PATH/VERGE TREATMENTS BY MRWA
NEW KERB ON NEW ALIGNMENT (BY MRWA)
RENEW KERB ON EXISTING ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2(x) UNLESS SHOWN OTHERWISE.
AMENDMENTS
D DESIGN AMENDMENTS ADDED. ISSUED FOR REVIEW
C DESIGN AMENDMENTS ADDED. ISSUED FOR REVIEW
B ISSUED FOR 100% DESIGN REVIEW
A ISSUED FOR 85% DRAFT FINAL REVIEW
NO DESCRIPTION APPROVED & DATE
METADATA
GROUND SURVEY STANDARD
DATE OF CAPTURE
MAPPING SURVEY STANDARD
DATE OF CAPTURE
MAIN ROADS PROJECT ZONE AGLIME 94
HEIGHT DATUM A.H.D.
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
DESIGNED/DRAWN
VERIFIED
DIRECTOR
APPROVED (MRWA)
MRWA FILE No
mainroads WESTERN AUSTRALIA
REGIONAL SERVICES
WHEATBELT NORTH REGION
Peel Terrace Northam 6401
Telephone (08) 9622 4777 Fax (08) 9622 3761
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 1 OF 9
LOCAL AUTHORITY SHIRE OF NORTHAM
MRWA DRAWING NUMBER
201310-0592-D
SCALES 1:250
A1

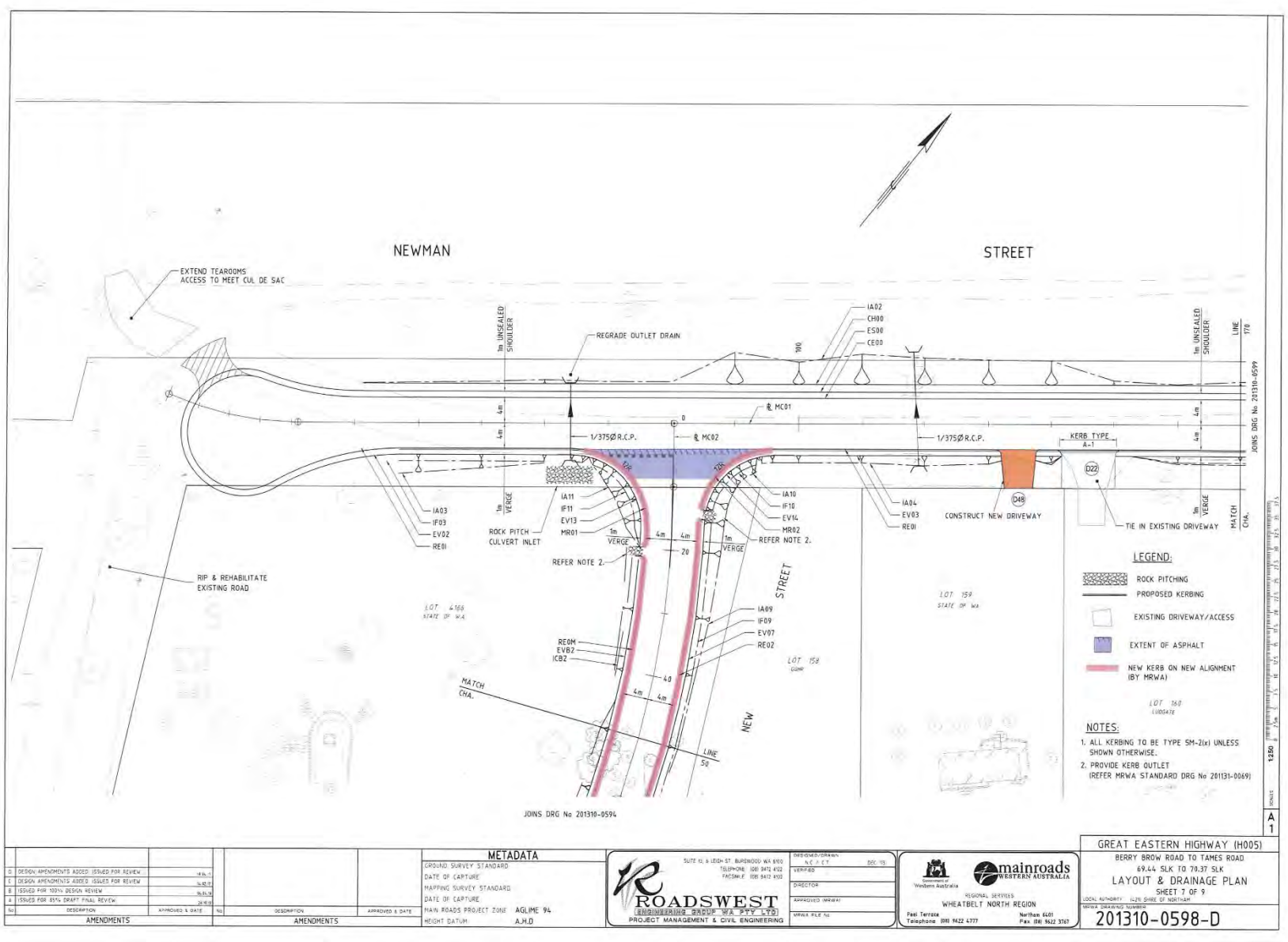

DRAINAGE STRUCTURES
STRUCT. No | STRUCT. TYPE | CO-ORDINATES EASTING | CO-ORDINATES NORTHING | REF PT ELEV
D1 | SGT | 53835.998 | 235820.399 | 302.73
D2 | H/W | 53816.831 | 235833.478 | 301.25
D3 | H/W | 53836.843 | 235847.706 | 301.40
D4 | H/W | 53822.876 | 235840.821 | 301.30
EXISTING ABOVE GROUND MUNDARING-KALGOORLIE WATER PIPELINE
RIP & REHABILITATE EXISTING ROAD
GREAT EASTERN HIGHWAY
GROUTED ROCK PROTECTION AT KERB END
BEGIN NEW KERB
U/S INV D3 301.40
450 Ø / 0.67%
15m / CLASS 4
D/S INV D4 301.30
U/S INV D1 301.40
450 Ø / 0.6%
25m / CLASS 4
D/S INV D2 301.25
NEW HEADWALL
REMOVE EXISTING PIT & CULVERT UNDER ACCESS
WIDEN EXISTING INFORMATION BAY
REMOVE & REPLACE EXISTING PIT & CULVERT
INSTALL NEW 450 DIA RCP CULVERT & STREET GULLY TYPE SGT
EXISTING PATH
INSTALL 10m HANDRAIL ON CORNER OF PATH
LIMIT OF WORKS
BERRY BROW ROAD WIDENING REFER DRG 201310-0589
NORTHAM
BERRY BROW ROAD
LEGEND:
ROCK PITCHING
PROPOSED KERBING
PEDESTRIAN RAMP-TYPE A REFER DRG 201310-0581 FOR DETAILS
EXISTING DRIVEWAY/ACCESS
NEW RETAINING WALL
BLEND TO EXISTING
NEW MONOWILLS HANDRAIL
EXTENT OF ASPHALT
PATH/VERGE TREATMENTS BY 'OTHERS' (INCLUDING RETENTION)
PATH/VERGE TREATMENTS BY MRWA
NEW KERB ON NEW ALIGNMENT (BY MRWA)
RENEW KERB ON EXISTING ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2(X) UNLESS SHOWN OTHERWISE.
METADATA
GROUND SURVEY STANDARD
DATE OF CAPTURE
MAPPING SURVEY STANDARD
DATE OF CAPTURE
MAIN ROADS PROJECT ZONE AGLIME 94
HEIGHT DATUM A.H.D
ROADSWEST
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
WHEATBELT NORTH REGION
Peel Terrace Northam 6401
Telephone (08) 9622 4777 Fax (08) 9622 3767
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 2 OF 9
201310-0593-D
A1
1:250

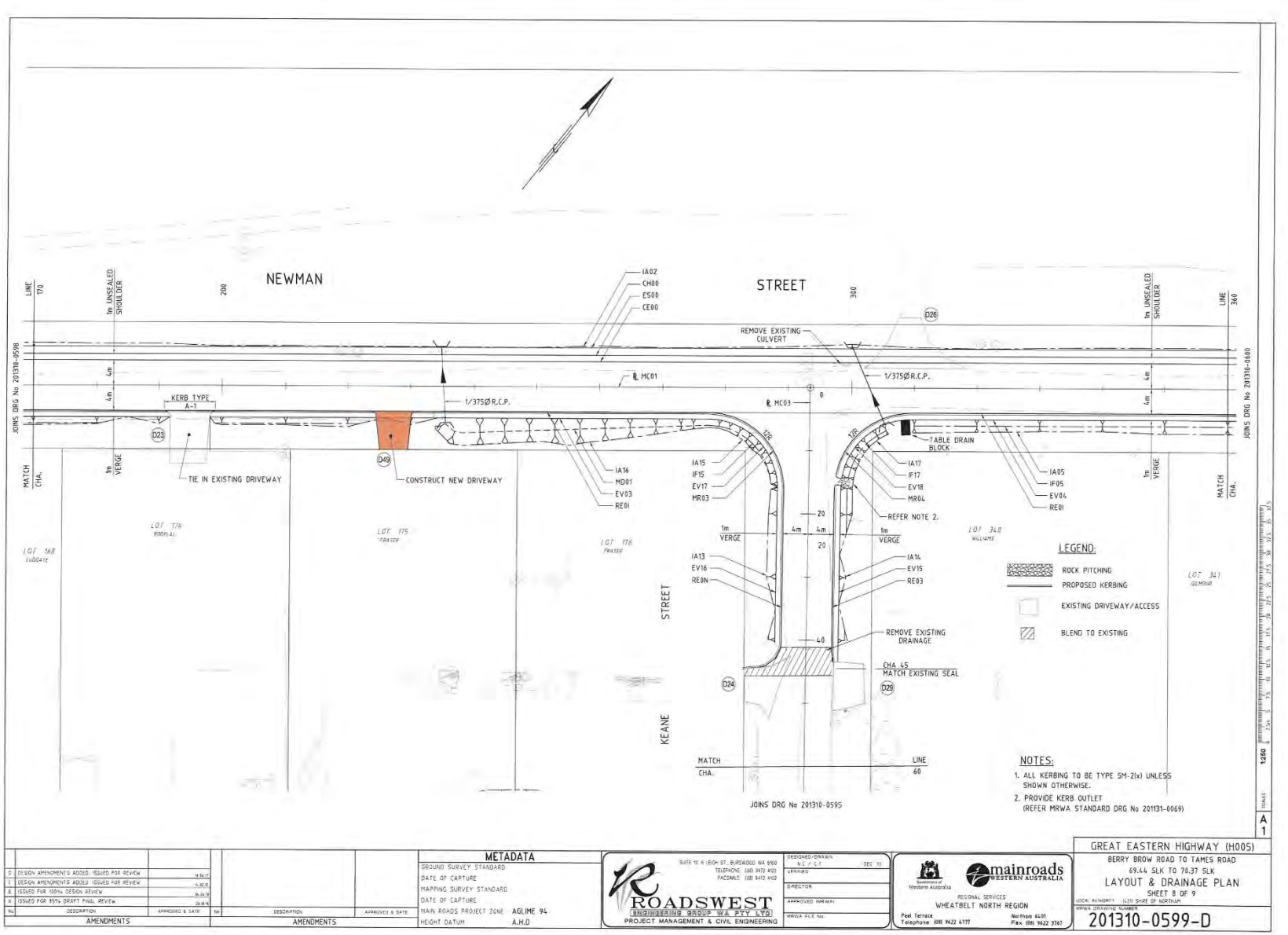

JOINS DRG No 201310-0598
JOINS DRG No 201310-0593
JOINS DRG No 201310-0595
EXISTING MEMORIAL
STREET
REAL ESTATE AGENCY
VET
GENERAL STORE
INFORMATION BAY
GREAT EASTERN HIGHWAY
TWO WAY CROSSOVER
CONSTRUCT ACCESS LANDING FOR PATH TO CONTINUE INTO EXISTING PARK
INSTALL 1x375mm RCP CULVERT UNDER CROSSOVER
NEW PATH
EXISTING PATH
EXISTING DRIVEWAY CONVERTED TO LEFT IN ONLY
REMOVE TREE BEWARE OF WESTERN POWER PILLAR IN VICINITY
REMOVE EXISTING KERBING INSTALL NEW KERBING ON EXISTING ALIGNMENT
BEGIN NEW KERB
PERTH
NORTHAM
LEGEND:
ROCK PITCHING
PROPOSED KERBING
LAND REQUIREMENT LINE
PEDESTRIAN RAMP-TYPE A REFER DRG 201310-0561 FOR DETAILS
EXISTING DRIVEWAY/ACCESS
NEW RETAINING WALL
REMOVE DRIVEWAY
BLEND TO EXISTING
EXTENT OF ASPHALT
PATH/VERGE TREATMENTS BY 'OTHERS' (INCLUDING RETENTION)
PATH/VERGE TREATMENTS BY MRWA
NEW KERB ON NEW ALIGNMENT (BY MRWA)
RENEW KERB ON EXISTING ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2(X) UNLESS SHOWN OTHERWISE.
2. PROVIDE KERB OUTLET (REFER MRWA STANDARD DRG No 201131-0069)
3. REFER MRWA STANDARD DRG No 200331-0139-2 FOR PED CROSSING SIGNS & RRPM LAYOUT
4. KEEP LEFT SIGNS ON PEDESTRIAN CROSSING TO BE HINGED.
5. WHERE THE REPLACEMENT KERB CONSTRUCTION CAUSES DAMAGE TO THE EXISTING FOOTPATH, THE FOOTPATH MUST BE MADE GOOD AGAIN.
METADATA
GROUND SURVEY STANDARD
DATE OF CAPTURE
MAPPING SURVEY STANDARD
DATE OF CAPTURE
MAIN ROADS PROJECT ZONE AGLIME 94
HEIGHT DATUM A.H.D
AMENDMENTS
D DESIGN AMENDMENTS ADDED. ISSUED FOR REVIEW
C DESIGN AMENDMENTS ADDED. ISSUED FOR REVIEW
B ISSUED FOR 100% DESIGN REVIEW
A ISSUED FOR 85% DRAFT FINAL REVIEW
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 3 OF 9
201310-0594-D
A1
1:250

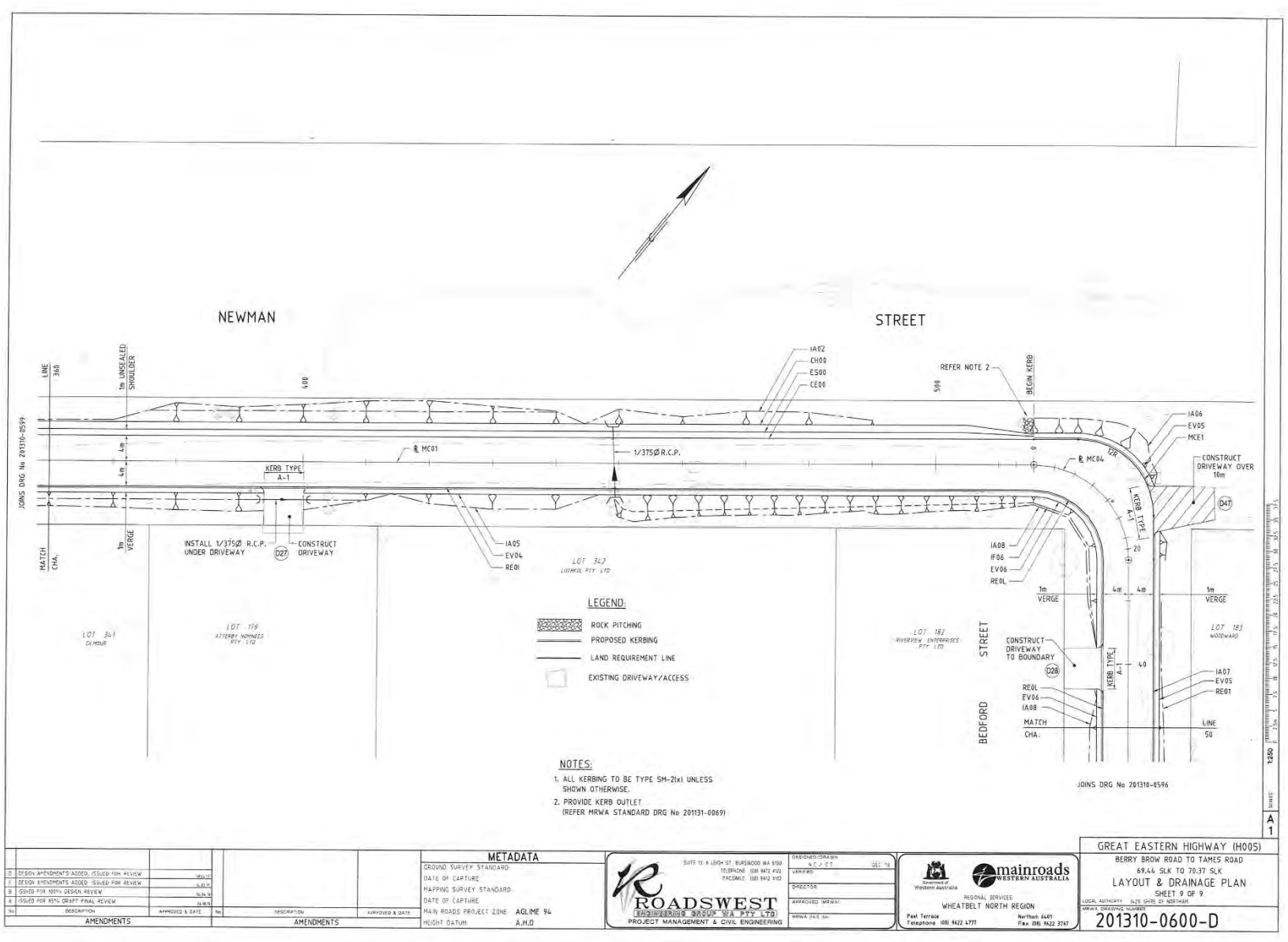

JOINS DRG No 201310-0599
DRAINAGE STRUCTURES
STRUCT. No | STRUCT. TYPE | CO-ORDINATES EASTING | NORTHING | REF PT ELEV
D5 | TEN | 54077.682 | 236016.199 | 301.30
D6 | TEN | 54072.439 | 236012.498 | 301.21
D7 | TEN | 54074.611 | 236014.985 | 301.10
D8 | SWN | 54070.252 | 236024.907 | 300.07
D9 | SGT | 54058.319 | 236040.818 | 299.30
GREAT EASTERN HIGHWAY
KEANE STREET
RE-ALIGN EXISTING POST & RAIL FENCE OR INSTALL NEW FENCE TO MATCH EXISTING
1m HIGH LIMESTONE RETAINING WALL (APPROX) TO PROTECT SEPTIC SYSTEM
EXTEND CARPARK
INSTALL MONOWILLS/WEBFORGE HANDRAIL TO EXISTING WALL. REFER DRG 201310-0582
PIE SHOP
TAVERN
TWO WAY CROSSOVER
INSTALL STORMWATER DRAINAGE SYSTEM. REFER DRG 201310-0581 FOR DETAILS.
U/S INV D8 298.90
450 Ø / 3.5%
19.5m / CLASS 4
D/S INV D9 298.20
NEW PATH
EXISTING PATH
CONSTRUCT PEDESTRIAN CROSSING
RIP & REHABILITATE EXISTING ROAD
CONSTRUCT RETAINING WALL REFER DRG 201310-0582 FOR DETAILS
REPROFILE EXISTING FOOTPATH OVER 3m TO MATCH NEW PATH LEVEL
U/S INV D7 300.10
450 Ø / 10.4%
10.5m / CLASS 4
D/S INV D8 299.00
U/S INV D6 300.20
375 Ø / 2.9%
3.4m / CLASS 3
D/S INV D7 300.10
U/S INV D5 300.30
375 Ø / 5.8%
3.4m / CLASS 3
D/S INV D7 300.10
CONSTRUCT CUL DE SAC IN KEANE ST
PERTH
NORTHAM
LEGEND:
PROPOSED KERBING
LAND REQUIREMENT LINE
PEDESTRIAN RAMP-TYPE A REFER DRG 201310-0581 FOR DETAILS
NEW RETAINING WALL
NEW MONOWILLS HANDRAIL
EXISTING DRIVEWAY/ACCESS
BLEND TO EXISTING
REMOVE DRIVEWAY
EXTENT OF ASPHALT
PATH/VERGE TREATMENTS BY 'OTHERS' (INCLUDING RETENTION)
PATH/VERGE TREATMENTS BY MRWA
NEW KERB ON NEW ALIGNMENT (BY MRWA)
RENEW KERB ON EXISTING ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2 UNLESS SHOWN OTHERWISE.
2. REFER MRWA STANDARD DRG No 203331-0139-2 FOR PED CROSSING SIGNS & RRPM LAYOUT
3. KEEP LEFT SIGNS ON PEDESTRIAN CROSSING TO BE HINGED.
4. WHERE THE REPLACEMENT KERB CONSTRUCTION CAUSES DAMAGE TO THE EXISTING FOOTPATH. THE FOOTPATH MUST BE MADE GOOD AGAIN.
METADATA
GROUND SURVEY STANDARD
DATE OF CAPTURE
MAPPING SURVEY STANDARD
DATE OF CAPTURE
MAIN ROADS PROJECT ZONE AGLIME 94
HEIGHT DATUM A.H.D
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
REGIONAL SERVICES
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 4 OF 9
201310-0595-D


JOINS DRG No 201310-0600
DRAINAGE STRUCTURES
STRUCT. No | STRUCT. TYPE | CO-ORDINATES EASTING | CO-ORDINATES NORTHING | REF PT ELEV
D10 | SGT | 54181.260 | 236113.377 | 297.66
D11 | H/W | 54184.078 | 236109.849 | 296.20
D12 | H/W | EXISTING
D13 | SGT | 54171.319 | 236121.375 | 297.46
D14 | SGT | 54182.263 | 236131.199 | 297.69
D15 | H/W | EXISTING
GREAT
EASTERN
HIGHWAY
BEDFORD STREET
EXISTING HEADWALL TO REMAIN. INCREASE HEIGHT TO ACCOMMODATE EARTHWORKS IF REQUIRED
BATTER FROM VERGE TO EXISTING GROUND LEVEL ON ROAD RESERVE BOUNDARY. BATTER SLOPE VARIES FROM 1in5 TO 1in1.7
U/S INV D13 296.00
450 Ø / 1.5%
13.5m / CLASS 4
D/S INV D14 295.80
REMOVE EXISTING KERBING. INSTALL NEW KERBING ON EXISTING ALIGNMENT
NEW PATH
INSTALL GULLY (SGT) PIT & 450 DIA RCP
INSTALL GULLY (SGT) PIT ON EXISTING DRAINAGE LINE
EXISTING CULVERT
U/S INV D10 296.25
600 Ø / 0.8%
6m / CLASS 4
D/S INV D11 296.20
INSTALL GULLY PIT (SGT) & 1x600 DIA CLASS 4 RCP OUTLET. CONSTRUCT CAST IN-SITU HEADWALL TO ACHIEVE CLEAR ZONE DISTANCE
U/S INV D12 296.16
600 Ø / 1.6%
16.3m / EXISTING
D/S INV D14 295.98
CONSTRUCT PEDESTRIAN CROSSING
FUTURE PATH (BY OTHERS)
PERTH
NORTHAM
LEGEND:
PROPOSED KERBING
LAND REQUIREMENT LINE
ROCK PITCHING
PEDESTRIAN RAMP-TYPE A REFER DRG 201310-0581 FOR DETAILS
NEW RETAINING WALL
EXISTING DRIVEWAY/ACCESS
BLEND TO EXISTING
EXTENT OF ASPHALT
PATH/VERGE TREATMENTS BY 'OTHERS' (INCLUDING RETENTION)
PATH/VERGE TREATMENTS BY MRWA
NEW KERB ON NEW ALIGNMENT (BY MRWA)
RENEW KERB ON EXISTING ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2(X) UNLESS SHOWN OTHERWISE.
2. REFER MRWA STANDARD DRG No 201331-0139-2 FOR PED CROSSING SIGNS & RRPM LAYOUT
3. KEEP LEFT SIGNS ON PEDESTRIAN CROSSING TO BE HINGED.
4. WHERE THE REPLACEMENT KERB CONSTRUCTION CAUSES DAMAGE TO THE EXISTING FOOTPATH, THE FOOTPATH MUST BE MADE GOOD AGAIN.
AMENDMENTS
METADATA
GROUND SURVEY STANDARD
DATE OF CAPTURE
MAPPING SURVEY STANDARD
DATE OF CAPTURE
MAIN ROADS PROJECT ZONE AGLIME 94
HEIGHT DATUM A.H.D
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
REGIONAL SERVICES
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 5 OF 9
201310-0596-D


GREAT EASTERN HIGHWAY
PERTH
NORTHAM
EXTEND / REALIGN W-BEAM BARRIER TO PROTECT POWER POLE
EXISTING WBEAM BARRIER
RELOCATE POWER POLE
REMOVE SEAL, REPROFILE & WIDEN TAMES ROAD INTERSECTION TO REMOVE BOTTOMING OUT OF LARGER VEHICLES
SAW CUT INTO EXISTING KERB MATCH INTO NEW KERB
REMOVE EXISTING CONCRETE FOOTPATH, BACKFILL & COMPACT TO TOP OF EXISTING KERB
INSTALL KERB OPENING
CONSTRUCT DRAIN TO OUTLET RUNOFF FROM KERB OPENING
LIMIT OF WORKS
LIMIT OF CHA 70370
END NEW KERB
FUTURE PATH (BY OTHERS)
BAKERS HILL FIRE SHED
TAMES ROAD
LEGEND:
PROPOSED KERBING
LAND REQUIREMENT LINE
ROCK PITCHING
PEDESTRIAN RAMP-TYPE A REFER DRG 201310-0581 FOR DETAILS
NEW RETAINING WALL
EXISTING DRIVEWAY/ACCESS
BLEND TO EXISTING
EXTENT OF ASPHALT
PATH/VERGE TREATMENTS BY 'OTHERS (INCLUDING RETENTION)
PATH/VERGE TREATMENTS BY MRWA
NEW KERB ON NEW ALIGNMENT (BY MRWA)
RENEW KERB ON EXISTING ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2(x) UNLESS SHOWN OTHERWISE.
METADATA
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
REGIONAL SERVICES
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 6 OF 9
201310-0597-D


NEWMAN
STREET
EXTEND TEAROOMS ACCESS TO MEET CUL DE SAC
REGRADE OUTLET DRAIN
1m UNSEALED SHOULDER
1/375ØR.C.P.
KERB TYPE A-1
CONSTRUCT NEW DRIVEWAY
TIE IN EXISTING DRIVEWAY
ROCK PITCH CULVERT INLET
REFER NOTE 2.
RIP & REHABILITATE EXISTING ROAD
MATCH CHA.
JOINS DRG No 201310-0599
JOINS DRG No 201310-0594
LEGEND:
ROCK PITCHING
PROPOSED KERBING
EXISTING DRIVEWAY/ACCESS
EXTENT OF ASPHALT
NEW KERB ON NEW ALIGNMENT (BY MRWA)
NOTES:
1. ALL KERBING TO BE TYPE SM-2(x) UNLESS SHOWN OTHERWISE.
2. PROVIDE KERB OUTLET (REFER MRWA STANDARD DRG No 201131-0069)
METADATA
ROADSWEST ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 79.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 7 OF 9
201310-0598-D


NEWMAN
STREET
KEANE
STREET
REMOVE EXISTING CULVERT
1/375ØR.C.P.
KERB TYPE A-1
TIE IN EXISTING DRIVEWAY
CONSTRUCT NEW DRIVEWAY
TABLE DRAIN BLOCK
REFER NOTE 2.
REMOVE EXISTING DRAINAGE
CHA 45 MATCH EXISTING SEAL
JOINS DRG No 201310-0598
JOINS DRG No 201310-0600
JOINS DRG No 201310-0595
LEGEND:
ROCK PITCHING
PROPOSED KERBING
EXISTING DRIVEWAY/ACCESS
BLEND TO EXISTING
NOTES:
1. ALL KERBING TO BE TYPE SM-2(x) UNLESS SHOWN OTHERWISE.
2. PROVIDE KERB OUTLET (REFER MRWA STANDARD DRG No 201131-0069)
METADATA
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
REGIONAL SERVICES
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 8 OF 9
201310-0599-D


NEWMAN
STREET
BEDFORD
STREET
LEGEND:
ROCK PITCHING
PROPOSED KERBING
LAND REQUIREMENT LINE
EXISTING DRIVEWAY/ACCESS
NOTES:
1. ALL KERBING TO BE TYPE SM-2(x) UNLESS SHOWN OTHERWISE.
2. PROVIDE KERB OUTLET (REFER MRWA STANDARD DRG No 201131-0069)
JOINS DRG No 201310-0599
JOINS DRG No 201310-0596
INSTALL 1/375Ø R.C.P. UNDER DRIVEWAY
CONSTRUCT DRIVEWAY
1/375Ø R.C.P.
CONSTRUCT DRIVEWAY OVER 10m
CONSTRUCT DRIVEWAY TO BOUNDARY
REFER NOTE 2
BEGIN KERB
KERB TYPE A-1
1m UNSEALED SHOULDER
1m VERGE
4m
MATCH CHA.
LINE
AMENDMENTS
METADATA
ROADSWEST
ENGINEERING GROUP WA PTY LTD
PROJECT MANAGEMENT & CIVIL ENGINEERING
mainroads WESTERN AUSTRALIA
REGIONAL SERVICES
WHEATBELT NORTH REGION
GREAT EASTERN HIGHWAY (H005)
BERRY BROW ROAD TO TAMES ROAD
69.44 SLK TO 70.37 SLK
LAYOUT & DRAINAGE PLAN
SHEET 9 OF 9
201310-0600-D

13. MATTERS BEHIND CLOSED DOORS

Nil.

14. MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN

Nil.

15. URGENT BUSINESS APPROVED BY PERSON PRESIDING OR BY DECISION

Nil.

16. DECLARATION OF CLOSURE