

From: no-reply=huonvalley.tas.gov.au@mailgun.huonvalley.tas.gov.au on behalf of "Huon Valley Council" <no-reply@huonvalley.tas.gov.au>
Sent: Mon, 30 May 2022 22:44:02 +1000
To: hvc@huonvalley.tas.gov.au;thomasabotha@gmail.com
Subject: Planning Representation - Thomas and Nanette Botha - {Application No:7}

Your representation has been submitted.

Please note: This representation may be subject to the provisions of the Right to Information Act 2009 which may result in its disclosure to a third party.

I/We (name)
Thomas and Nanette Botha
Are you lodging as a Individual, Company or Organisation
Individual/s
Of Address
36 Waggs Road
Town or Suburb
Mountain River
Postcode
7190
Email
thomasabotha@gmail.com
Phone Number
0457207638
References
Tasmania State Provisions Scheme Change
Comments
Please see Representation addressed to the Tasmanian Planning Commission: TSPP Representation 36 Waggs Road Mountain River Tasmania 7109 and Appendices: I. GEO-ENVIRONMENTAL ASSESSMENT II. FARM MANAGEMENT PLAN
File
<ul style="list-style-type: none">• II.-FARM-MANAGEMENT-PLAN.pdf• I.-GEO-ENVIRONMENTAL-ASSESSMENT.pdf• TSPP-Representation-36-Waggs-Road-Mountain-River-Tasmania-7109.pdf
Submit Application

- Yes Submit

From: "Thomas Botha" <thomasabotha@gmail.com>
Sent: Mon, 30 May 2022 22:46:37 +1000
To: "Information Management" <hvc@huonvalley.tas.gov.au>
Subject: TSPP Representation 36 Waggs Road Mountain River Tasmania 7109
Attachments: TSPP Representation 36 Waggs Road Mountain River Tasmania 7109.pdf, I. GEO-ENVIRONMENTAL ASSESSMENT.pdf, II. FARM MANAGEMENT PLAN.pdf

Good Evening

Please see Representation addressed to the Tasmanian Planning Commission:
TSPP Representation 36 Waggs Road Mountain River Tasmania 7109

and Appendices:

I. GEO-ENVIRONMENTAL ASSESSMENT
II. FARM MANAGEMENT PLAN

Regards

Thomas and Nanette Botha
thomasabotha@gmail.com
+61 457 207 638

The Tasmanian Planning Commission

Level 3/144

Macquarie Street

Hobart

7000

REPRESENTATIONS TO TASMANIA STATE PLANNING PROVISIONS (TSPP):

Request to rezone the Property from new proposed Agriculture Zone to Rural Zone

We Nanette and Thomas Botha impacted as owners and community members, living and contactable at:

Address: 36 Waggs Road Mountain River 7109

Email address: appinoka@gmail.com

Phone Number: 0457 207 638 and 0457 207 648

...make the following representations in respect of the proposed updated SPP to the Tasmanian Planning Commission.

Identified "Property":

Affected Site Address: 36 Waggs Road, Mountain River, Tasmania, 7109

Property Identification Code.: MKHU-1076

Request to rezone the above mentioned Property from the newly proposed Agriculture Zone(TSPP 21.0) to Rural Zone (TSPP 20.0)

Justification as follows:

1. Existing Zone Purpose

The *Property* is currently zoned as Agriculture Zone. The Tasmanian Panning Commission is brought to the attention that the Agriculture Zone's main purpose is to ensure land(resource) is utilised as a resource for agricultural purposes and the land is to be identified as **prime agricultural land, soil is used as growth medium** as detailed in the main purpose of this zone.

“

21.1 Zone Purpose

The purpose of the Agriculture Zone is:

21.1.1 To provide for the use or development **of land for agricultural use.**

21.1.2 To **protect land for the use or development of agricultural use** by minimising:

(a) *conflict with or interference from non-agricultural uses;*

(b) *non-agricultural use or development that precludes the return of the land to agricultural use; and*

(c) *use of land for non-agricultural use in irrigation districts.*

21.1.3 To provide for use or development that supports the use of the land for agricultural use.

“

As detailed in the TSPP 21.0 , 21.2 Use Table for Agriculture Zone:

“

Resource Development

If:

(a) *on land other **than prime agricultural land;** or*

(b) *an agricultural use, excluding plantation forestry, on prime agricultural **land if it is dependent on the soil as the growth medium** or conducted in a manner which does not alter, disturb or damage the existing soil profile or preclude it from future use as a growth medium.*

“

The Objective of this Zone details that the land's main purposes even under discretionary use is to be utilised for agricultural purposes as listed in 21.3 Use Standards, 21.3.1 Discretionary uses:

“

Objective:

That uses listed as Discretionary:

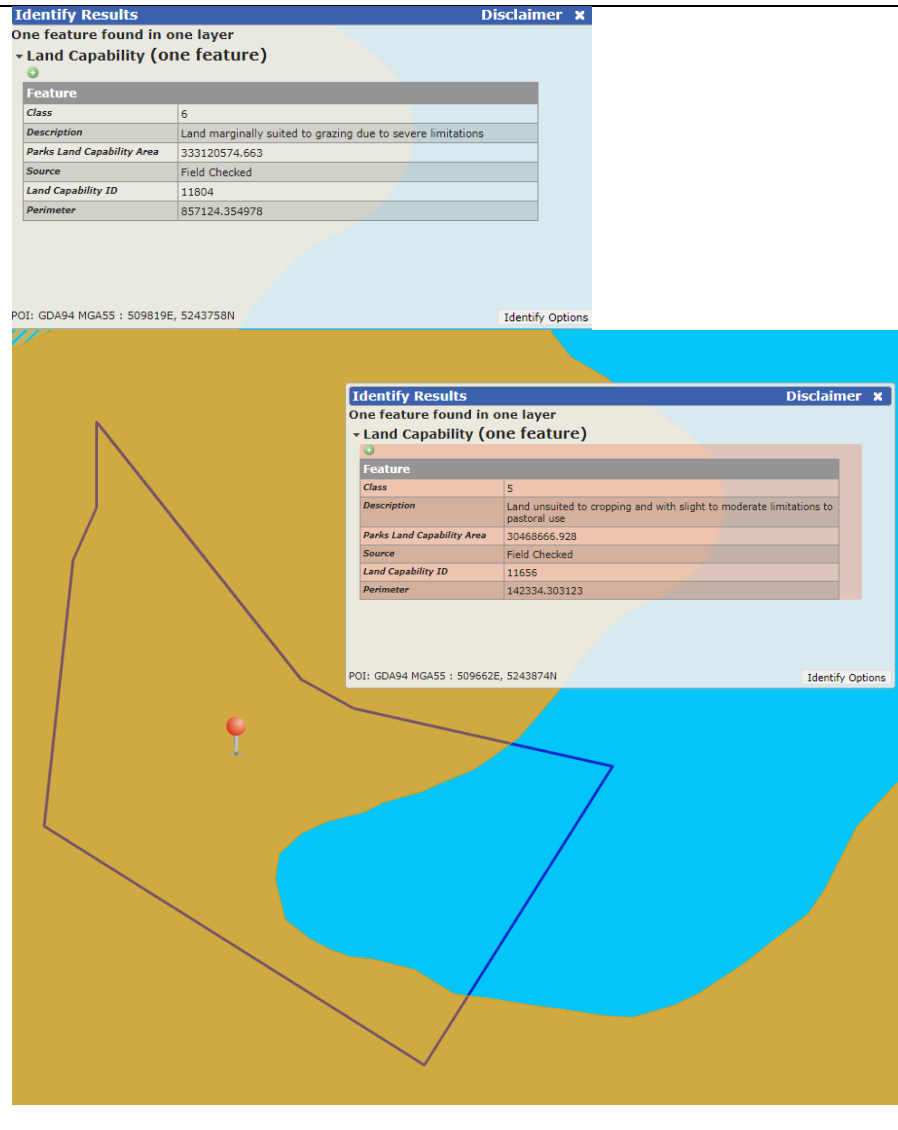
(a) **support agricultural use;** and

(b) *protect land for agricultural use by minimising the conversion of land to non-agricultural use.*

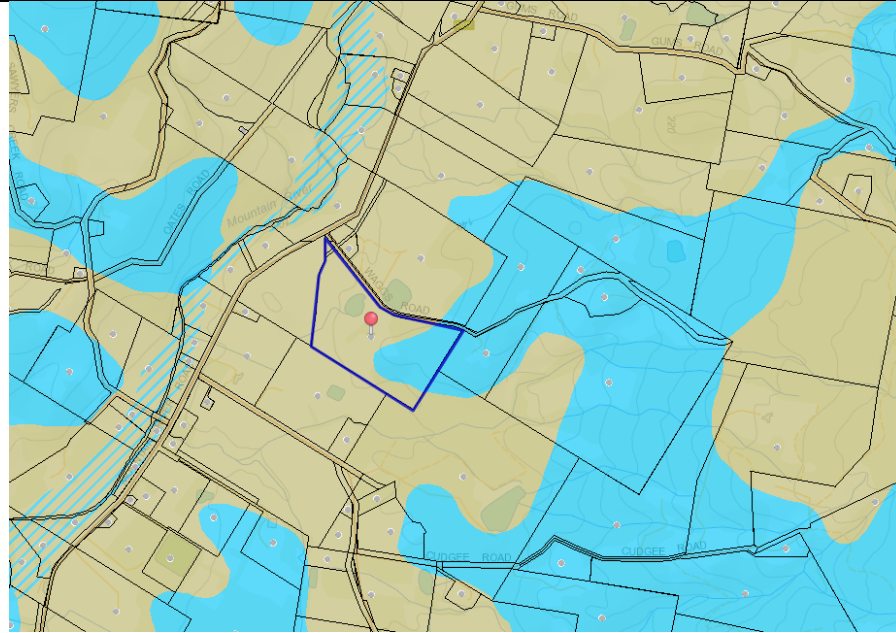
“

2. Property's Land Limitations

Land Capability Factor more than 60% of the Property is classified as “unsuited to Cropping and with slight to moderate limitations to pastoral use” the remaining of the land is classified as “land marginally suited to grazing due to severe limitations”.



Neighbouring properties zoned as Agricultural use has the same limitation as experienced on the Property



Topographical Limitations

1.) Landslide Low Risk

Limitation in utilising land for resource / grow medium

Identify Results Disclaimer

2 features found in 2 layers

- Landslide Planning Map - Hazard Bands 20131022 (one feature)

Feature

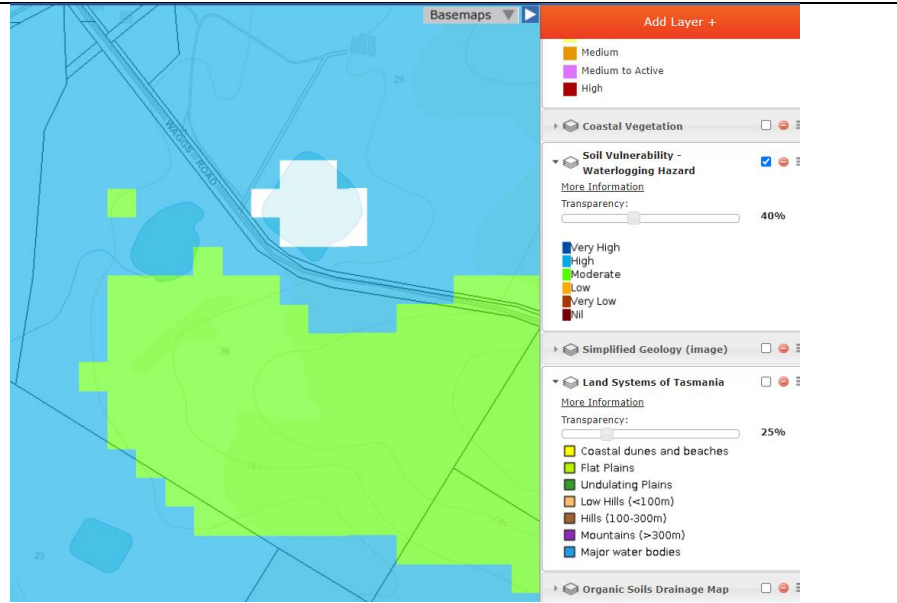
Disclaimer Hazard Planning Maps produced by the Department of Premier and Cabinet (this map being such a map) are produced and released for the purpose of informing actions taken and decisions made by local or state government under relevant provisions of the Land Use Planning and Approvals Act 1993 and Building Act 2000. Whilst every care has been taken to prepare this map, the Government of Tasmania makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose other than its intended purpose. Hazard bands as depicted in this map may not accurately represent the existence or otherwise of hazards in the mapped area. Independent expert advice should be sought if action is to be taken that may be impacted by the existence or otherwise of hazards in the mapped area.

Hazard Band Low

POI: GDA94 MGASS : 509756E, 5243741N Identify Op

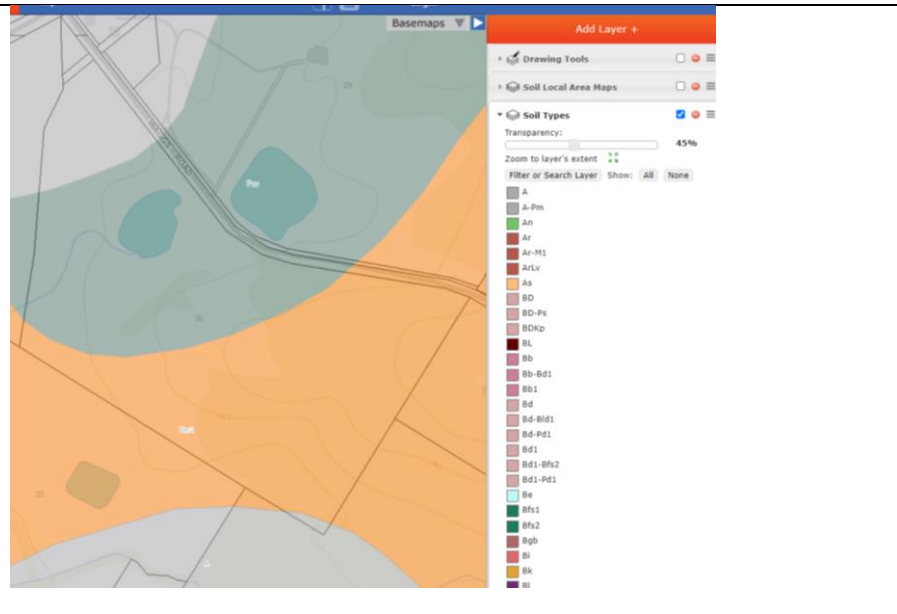
2.) Soil Vulnerability due to Waterlogging Hazard

Waterlogging limiting use of soil as grow medium and thus limiting use of Property for resource use.



3.) Soil Types

The Property's soil is mainly identified as Podzol and podzolic soils on sandstone in the lower gullies and areas and low laying mudstone on the hilly areas.



4. Proposed Changed Zone

It is strongly recommended to the Tasmanian Planning Commission to consider changing the zoning of this property to Rural Zone. As explained in the above-mentioned property limitations it is evident that this parcel of land should be classified for rural purposes. However, there are strongly supported soil/resource limitations, which leads to restrictive cropping development. It is therefore recommended to change this Property's zoning to Rural Zone to support the agricultural intent on the already approved farming enterprises.

It is noted that the latest DA planning, as approved by the Huon Valley Council 274:2019, approved the use of land for an Organic Market Garden and Pastured/Free Range Egg Enterprise. These activities require the use of a rural location and land parcel as classified as Rural at minimum which is the case North and South of the land Parcel.

20.0 Rural Zone

20.1 Zone Purpose

The purpose of the Rural Zone is:

20.1.1 To provide for a range of use or development in a rural location:

(a) where agricultural use is limited or marginal due to topographical, environmental or other site or regional characteristics;

(b) that requires a rural location for operational reasons;

(c) is compatible with agricultural use if occurring on agricultural land;

(d) minimises adverse impacts on surrounding uses.

20.1.2 To minimise conversion of agricultural land for non-agricultural use.

20.1.3 To ensure that use or development is of a scale and intensity that is appropriate for a rural location and does not compromise the function of surrounding settlements.

“

Furthermore, the Property does not have access to the Mountain River water scheme to support consistent agricultural cropping activities. The property does have access to intermittent subsidiary stream to the Mountain River which would support limited agricultural use.

By changing the zoning of this Property and any other adjacent properties who also applied for this change, will support further development and optimal use of the land for Permitted Rural uses. Rural Zoning protects and promotes supported agricultural use and therefore will not negatively impact any other properties in the area with Agriculture Zoning.

5. Supporting Documents:

- I. GEO-ENVIRONMENTAL ASSESSMENT
- II. FARM MANAGEMENT PLAN

GEO-ENVIRONMENTAL ASSESSMENT

Lot 4 Mountain River Rd

Mountain River

October 2019



GEO-ENVIRONMENTAL

S O L U T I O N S

Disclaimer: The author does not warrant the information contained in this document is free from errors or omissions. The author shall not in any way be liable for any loss, damage or injury suffered by the User consequent upon, or incidental to, the existence of errors in the information.

Geo-Environmental Solutions P/L 29 Kirksway Place Battery Point. Ph 6223 1839

Introduction

Client:	Appinoka Regenerative Farming
Date of inspection:	28/08/2019
Location:	Lot 4 Mountain River Rd, Mountain River (C.T. 122929/4)
Land description:	Approx. 14.45ha lot
Building type:	Proposed new dwelling
Investigation:	Hand Auger
Inspected by:	A. Plummer

Background Information

Map:	Mineral Resources Tasmania, SE sheet 1:250 000
Rock type:	Permian siltstone
Soil depth:	Approx. 0.6m
Planning Overlay:	Landslide Hazard Area and Waterway and Coastal Protection Area
Local meteorology:	Annual rainfall approx 900 mm
Local services:	Tank water, with on-site wastewater required

Site Conditions

Slope and aspect:	House and Wastewater site approx. 14% slope
Site drainage:	Imperfect subsoil drainage
Vegetation:	Pasture with mixed grass species
Weather conditions:	Overcast, approx. 21mm rainfall received in preceding 7 days
Ground surface:	Wet silty surface conditions

Investigation

A number of excavations were completed to identify the distribution of, and variation in soil materials on the site. Representative excavations were taken at the approximate locations indicated on the site plan and were chosen for testing and classification according to AS2870-2011 and AS1547-2012 (see profile summary).

Profile Summary

Hole 1 & 4 Depth (m)	Hole 2 & 3 Depth (m)	Horizon	Description
0.00 – 0.20	0.00 – 0.10	A1	Dark Greyish Brown Sandy SILT (ML) , wet, soft consistency, low plasticity, gradual boundary to
0.20 – 0.30	0.10 – 0.30	A2	Pale Grey Sandy SILT (ML) , common gravels, wet, soft consistency, low plasticity, clear boundary to
0.30 – 0.55	0.30 – 0.50	B2	Brownish Grey Silty CLAY (CH) , moist, stiff consistency, high plasticity, clear boundary to
0.55 – 0.60	0.50 – 0.55	C	Pale Grey Silty Clayey SAND (SC) , slightly moist, very dense consistency, defusal on rock

Soil Profile Notes

The soils onsite features silt overlying clay dominant subsoils forming over Permian siltstone. The subsoils are likely to exhibit moderate ground surface movement from soil moisture fluctuations. The subsoils will also feature low permeability with good nutrient retention capacity. Ponding water onsite indicates low bearing capacity of soil.

Dispersion Testing

A number of samples were taken from site, and Emmerson Aggregated Stability test was used to check for dispersion. The soil showed signs of dispersion and was found to be Class 2(2).

Site Classification

According to AS2870-2011 for construction the natural soil is classified as **Class M**, that is a moderately reactive clay site which may experience moderate ground movement from moisture changes. However, due to low bearing capacity of the soil onsite **Class P** is applicable.

Wind Classification

The AS 4055-2012 *Wind load for Housing* classification of the site is:

Region:	A
Terrain category:	TC2
Shielding Classification:	NS
Topographic Classification:	T1
Wind Classification:	N3
Design Wind Gust Speed ($V_{h,u}$)	50 m/sec

Wastewater Recommendations

According to AS1547-2012 for on-site wastewater management the soil on the property is classified as a **Light Clay (Category 5)** with a Design Irrigation Rate (DIR) of 2.4mm/day.

The proposed five bedroom dwelling has a calculated maximum wastewater loading of 840L/day. This is based on tank water supply and a maximum occupancy of 7 people (120L/day/person).

Given a loading of 840L/day and a DIR of 2.4mm/day, then 380m² of irrigation area under mulch in landscaped garden beds is required to accommodate the expected flows.

Gypsum, at a rate of 1kg/5m², is to be applied to the base of the irrigation lines to mitigate dispersion. A diversion drain will not be required upslope of the irrigation area due to the installation of landscaped garden beds; however, all stormwater must be diverted away from this area. The wastewater area is to be excluded from traffic or any future building works. A designated 100% reserve area has not been allocated due to sufficient space onsite. For further detail please refer to the attached plan and Trench summary reports.

The site is exempt from *E.23 Onsite Wastewater Management Code* of the Huon Valley Council Interim Planning Scheme 2015 as the site exceeds 5000m², is above 3m AHD and a circle with 50m diameter can be inscribed on the site.

The following setback distances are required to comply with the Building Act 2016:

Buildings:	6m
Boundaries:	40m
Downslope surface water:	100m

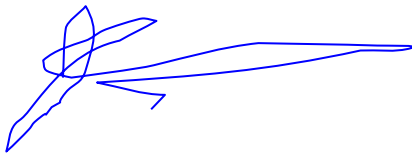
Compliance with Building Act 2016 Guidelines for On-site Wastewater Management Systems is outlined in the attached table.

Construction Recommendations

According to AS2870-2011 for construction the natural soil is classified as **Class M**; however, **Class P** is applicable due to the poor bearing capacity of the soil. All site Earthworks must comply with AS3798-2012. It is recommended that foundations are placed on the underlying rock where possible. Consideration should be given to drainage and sediment control onsite during and after construction to minimise potential foundation movement. In particular, drainage upslope of the construction area is recommended to minimise possible weakening of the clay sediments in the foundation area and appropriate articulation in the building in accordance with recommendations for reactive sites in AS2870-2011.

During excavation care needs to be taken to ensure subsoils are not exposed as the subsoils were tested as moderately dispersive. If subsoils are exposed during construction then care must be taken and all works should adhere to the DPIWE dispersive soils technical manual (2009).

During construction that GES be notified of any major variation to the soil conditions or wastewater loading as predicted in this report.



Dr John Paul Cumming B.Agr.Sc (hons) PhD CPSS GAICD
Environmental and Engineering Soil Scientist

GES P/L

Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report

Site assessment for on-site waste water disposal

Assessment for Appinoka Regenerative Farming Assess. Date 21-Oct-19
Ref. No.
Assessed site(s) Lot 4 Mountain River Rd, Mountain River Site(s) inspected 28-Aug-19
Local authority Huon Valley Council Assessed by John Paul Cumming

This report summarises wastewater volumes, climatic inputs for the site, soil characteristics and system sizing and design issues. Site Capability and Environmental sensitivity issues are reported separately, where 'Alert' columns flag factors with high (A) or very high (AA) limitations which probably require special consideration for system design(s). Blank spaces on this page indicate data have not been entered into TRENCH.

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 840 (using the 'No. of bedrooms in a dwelling' method)
Septic tank wastewater volume (L/day) = 280
Sullage volume (L/day) = 560
Total nitrogen (kg/year) generated by wastewater = 2.6
Total phosphorus (kg/year) generated by wastewater = 2.0

Climatic assumptions for site

(Evapotranspiration calculated using the crop factor method)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	55	48	59	57	61	84	83	110	100	70	80	69
Adopted rainfall (R, mm)	53	49	54	61	66	68	74	76	61	63	59	58
Retained rain (Rr, mm)	45	42	46	52	56	58	63	65	52	54	50	49
Max. daily temp. (deg. C)												
Evapotrans (ET, mm)	130	110	91	63	42	29	32	42	63	84	105	126
Evapotrans less rain (mm)	85	68	45	11	-14	-28	-31	-23	11	30	55	77
Annual evapotranspiration less retained rain (mm) =												286

Soil characteristics

Texture = Light Clay Category = 5 Thick. (m) = 0.55
Adopted permeability (m/day) = 0.24 Adopted LTAR (L/sq m/day) = 2 Min depth (m) to water = 4

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site: All wastewater will be disposed of on the site
The preferred method of on-site primary treatment: In a package treatment plant
The preferred method of on-site secondary treatment: In-ground
The preferred type of in-ground secondary treatment: None
The preferred type of above-ground secondary treatment: None
Site modifications or specific designs: Not needed

Suggested dimensions for on-site secondary treatment system

Total length (m) = 77
Width (m) = 5
Depth (m) = 0.2
Total disposal area (sq m) required = 380
comprising a Primary Area (sq m) of: 380
and a Secondary (backup) Area (sq m) of:

Sufficient area is available on site

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The calculated DIR for the Category 5 soil present is 2.4mm/day using an AWTS with a required irrigation area under mulch of 380sq m for the proposed five bedroom dwelling on tank water. Therefore the system will have the capacity to cope with predicted climatic and loading events.

GES P/L

Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report**Site assessment for on-site waste water disposal**

Assessment for Appinoka Regenerative Farming

Assess. Date 21-Oct-19

Ref. No.

Assessed site(s) Lot 4 Mountain River Rd, Mountain River

Site(s) inspected 28-Aug-19

Local authority Huon Valley Council

Assessed by John Paul Cumming

This report summarises data relating to the physical capability of the assessed site(s) to accept wastewater. Environmental sensitivity and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) site limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Expected design area	sq m	50,000	V. high	Very low		
	Density of disposal systems	/sq km	5	Mod.	Very low		
	Slope angle	degrees	8	High	Low		
	Slope form	Convex spreading		High	Very low		
	Surface drainage	Imperfect		High	Moderate		
	Flood potential	Site floods <1:100 yrs		High	Very low		
	Heavy rain events	Infrequent		High	Moderate		
	Aspect (Southern hemi.)	Faces NE or NW		V. high	Low		
	Frequency of strong winds	Infrequent		High	Moderate		
	Wastewater volume	L/day	840	High	Moderate		
	SAR of septic tank effluent		1.7	High	Low		
	SAR of sullage		2.6	High	Moderate		
	Soil thickness	m	0.6	V. high	Moderate		
AA	Depth to bedrock	m	0.6	V. high	Very high		
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	2	V. high	Very low		
	Soil pH		5.5	High	Low		
	Soil bulk density	gm/cub. cm	1.4	High	Very low		
AA	Soil dispersion	Emerson No.	2	V. high	Very high		
	Adopted permeability	m/day	0.24	Mod.	Very low		
	Long Term Accept. Rate	L/day/sq m	2	High	High	Moderate	

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The site has the capability to accept secondary treated onsite wastewater. Gypsum is to be applied to the absorption area to mitigate dispersion.

GES P/L

Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report

Site assessment for on-site waste water disposal

Assessment for Appinoka Regenerative Farming

Assess. Date 21-Oct-19

Ref. No.

Assessed site(s) Lot 4 Mountain River Rd, Mountain River

Site(s) inspected 28-Aug-19

Local authority Huon Valley Council

Assessed by John Paul Cumming

This report summarises data relating to the environmental sensitivity of the assessed site(s) in relation to applied wastewater. Physical capability and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Cation exchange capacity	mmol/100g	100	High	Low		
	Phos. adsorp. capacity	kg/cub m	0.7	High	Moderate		
	Annual rainfall excess	mm	-286	High	Very low		
	Min. depth to water table	m	4	High	Very low		
	Annual nutrient load	kg	4.6	High	Very low		
	G'water environ. value	Agric non-sensit		V. high	Low		
	Min. separation dist. required	m	5	High	Very low		
	Risk to adjacent bores	Very low		V. high	Very low		
	Surf. water env. value	Agric non-sensit		V. high	Low		
A	Dist. to nearest surface water	m	110	V. high	High		
	Dist. to nearest other feature	m	120	V. high	Very low		
	Risk of slope instability	Low		V. high	Low		
A	Distance to landslip	m	50	V. high	High		

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

The soil onsite has a clayey texture with a good CEC and P absorption, therefore the soil system has a good capacity to cope with the applied nutrient load from the wastewater system. The wastewater system complies with the required setbacks to downslope surface water. There is a low environmental risk associated with onsite wastewater disposal.

Demonstration of wastewater system compliance to *Building Act 2016 Guidelines for On-site Wastewater Disposal*

Acceptable Solutions	Performance Criteria	Compliance
<p>A1</p> <p>Horizontal separation distance from a building to a land application area must comply with one of the following:</p> <ul style="list-style-type: none"> a) be no less than 6m; or b) be no less than: <ul style="list-style-type: none"> (i) 3m from an upslope building or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building. 	<p>P1</p> <ul style="list-style-type: none"> a) The land application area is located so that <ul style="list-style-type: none"> (i) the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.; and (ii) is setback a sufficient distance from a downslope excavation around or under a building to prevent inadequately treated wastewater seeping out of that excavation 	<p>Complies with A1 (a)</p> <p>Land application area will be located with minimum separation distance to proposed building of 6m.</p>
<p>A2</p> <p>Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b)</p> <ul style="list-style-type: none"> (a) be no less than 100m; or (b) be no less than the following: <ul style="list-style-type: none"> (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or (ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water. 	<p>P2</p> <p>Horizontal separation distance from downslope surface water to a land application area must comply with all of the following:</p> <ul style="list-style-type: none"> a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable. 	<p>Complies with A2 (a)</p> <p>Land application area located > 100m from downslope surface water</p>

<p>A3</p> <p>Horizontal separation distance from a property boundary to a land application area must comply with either of the following:</p> <p>(a) be no less than 40m from a property boundary; or</p> <p>(b) be no less than:</p> <p>(i) 1.5m from an upslope or level property boundary; and</p> <p>(ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or</p> <p>(iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.</p>	<p>P3</p> <p>Horizontal separation distance from a property boundary to a land application area must comply with all of the following:</p> <p>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</p> <p>(b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p>	<p>Complies with A3 (a) Land application area located no less than 40m from downslope boundary</p>
<p>A4</p> <p>Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.</p>	<p>P4</p> <p>Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following:</p> <p>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</p> <p>(b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable</p>	<p>Complies with A4 No bore or well identified within 50m</p>

<p>A5</p> <p>Vertical separation distance between groundwater and a land application area must be no less than:</p> <p>(a) 1.5m if primary treated effluent; or</p> <p>(b) 0.6m if secondary treated effluent</p>	<p>P5</p> <p>Vertical separation distance between groundwater and a land application area must comply with the following:</p> <p>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</p> <p>(b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable</p>	<p>Complies with A5 (b)</p> <p>No groundwater encountered</p>
<p>A6</p> <p>Vertical separation distance between a limiting layer and a land application area must be no less than:</p> <p>(a) 1.5m if primary treated effluent; or</p> <p>(b) 0.5m if secondary treated effluent</p>	<p>P6</p> <p>Vertical setback must be consistent with AS/NZS1547 Appendix R.</p>	<p>Complies with A6 (b)</p>
<p>A7</p> <p>nil</p>	<p>P7</p> <p>A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties</p>	<p>Complies</p>

AS1547:2012 – Loading Certificate – AWTS Design

This loading certificate sets out the design criteria and the limitations associated with use of the system.

Site Address: Lot 4 Mountain River Rd, Mountain River

System Capacity: 7 persons @ 120L/person/day

Summary of Design Criteria

DIR: 2.4mm/day.

Irrigation area: 380m²

Reserve area location /use: Not assigned – more than 100% available

Water saving features fitted: Standard fixtures

Signage: Suitable warning signs to be displayed around the disposal area indicating that reclaimed water is being used i.e. “Recycled Water, Avoid Contact, Do Not Drink”

Allowable variation from design flows: 1 event @ 200% daily loading per quarter

Typical loading change consequences: Expected to be minimal due to use of AWTS and large land area

Overloading consequences: Continued overloading may cause hydraulic failure of the irrigation area and require upgrading/extension of the area. Risk considered acceptable due to monitoring through quarterly maintenance reports.

Underloading consequences: Lower than expected flows will have minimal consequences on system operation unless the house has long periods of non occupation. Under such circumstances additional maintenance of the system may be required. Long term under loading of the system may also result in vegetation die off in the irrigation areas and additional watering may be required. Risk considered acceptable due to monitoring through quarterly maintenance reports.

Lack of maintenance / monitoring consequences: Issues of underloading/overloading and condition of the irrigation area require monitoring and maintenance, if not completed system failure may result in unacceptable health and environmental risks. Monitoring and regulation by the permit authority required to ensure compliance.

Other considerations: Owners/occupiers must be made aware of the operational requirements and limitations of the system by the installer/maintenance contractor.

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: Owner /Agent
 Address
 Suburb/postcode

Form **55**

Qualified person details:

Qualified person:
Address: Phone No:
 Fax No:
Licence No: Email address:

Qualifications and Insurance details: *(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)*

Speciality area of expertise: *(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)*

Details of work:

Address: Lot No:
 Certificate of title No:
The assessable item related to this certificate: *(description of the assessable item being certified)*
Assessable item includes –

- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: *(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)*

This certificate is in relation to the above assessable item, at any stage, as part of - (tick one)

building work, plumbing work or plumbing installation or demolition work

or

a building, temporary structure or plumbing installation:

In issuing this certificate the following matters are relevant –

Documents:	The attached soil report for the address detailed above in 'details of Work'
Relevant calculations:	Reference the above report.
References:	AS2870-2011 residential slabs and footings AS1726-2017 Geotechnical site investigations CSIRO Building technology file – 18.

Substance of Certificate: (what it is that is being certified)

Site Classification consistent with AS2870-2011.

Scope and/or Limitations

The classification applies to the site as inspected and does not account for future alteration to foundation conditions as a result of earth works, drainage condition changes or variations in site maintenance.

I, John-Paul Cumming certify the matters described in this certificate.

Qualified person:	<i>Signed:</i>	<i>Certificate No:</i>	<i>Date:</i>
		5005	21/10/2019



CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

Form **35**

To: *Owner name*
 Address
 Suburb/postcode

Designer details:

Name: *Category:*
 Business name: *Phone No:*
 Business address:
 Fax No:
 Licence No: *Email address:*

Details of the proposed work:

Owner/Applicant *Designer's project reference No.*
Address: *Lot No:*

Type of work: Building work Plumbing work *(X all applicable)*

Description of work:

(new building / alteration / addition / repair / removal / re-erection water / sewerage / stormwater / on-site wastewater management system / backflow prevention / other)

Description of the Design Work (Scope, limitations or exclusions): *(X all applicable certificates)*

Certificate Type:	Certificate	Responsible Practitioner
	<input type="checkbox"/> Building design	Architect or Building Designer
	<input type="checkbox"/> Structural design	Engineer or Civil Designer
	<input type="checkbox"/> Fire Safety design	Fire Engineer
	<input type="checkbox"/> Civil design	Civil Engineer or Civil Designer
	<input checked="" type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Fire service design	Building Services Designer
	<input type="checkbox"/> Electrical design	Building Services Designer
	<input type="checkbox"/> Mechanical design	Building Service Designer
	<input type="checkbox"/> Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	<input type="checkbox"/> Other (specify)	

Deemed-to-Satisfy: Performance Solution: *(X the appropriate box)*

Other details:
AWTS Unit with irrigation under mulch

Design documents provided:

The following documents are provided with this Certificate –

Document description:

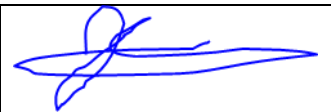
Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: Oct-19
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: Oct-19
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by: Geo-Environmental Solutions	Date: Oct-19

Standards, codes or guidelines relied on in design process:	
AS1547-2012 On-site domestic wastewater management.	
AS3500 (Parts 0-5)-2013 Plumbing and drainage set.	

Any other relevant documentation:	
Geo-Environmental Assessment – Lot 4 Mountain River Rd – October 2019 - GES	

Attribution as designer:	
---------------------------------	--

I John-Paul Cumming, am responsible for the design of that part of the work as described in this certificate;
The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;
This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	John-Paul Cumming		21/10/2019
Licence No:	CC774A		

Assessment of Certifiable Works: (TasWater)

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.

TasWater must then be contacted to determine if the proposed works are Certifiable Works.

I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- The works will not increase the demand for water supplied by TasWater
- The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- The works will not damage or interfere with TasWater's works
- The works will not adversely affect TasWater's operations
- The work are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- I have checked the LISTMap to confirm the location of TasWater infrastructure
- If the property is connected to TasWater's water system, a water meter is in place, or has been applied for to TasWater.

Certification:

IJohn-Paul Cumming.... being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008*, that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au


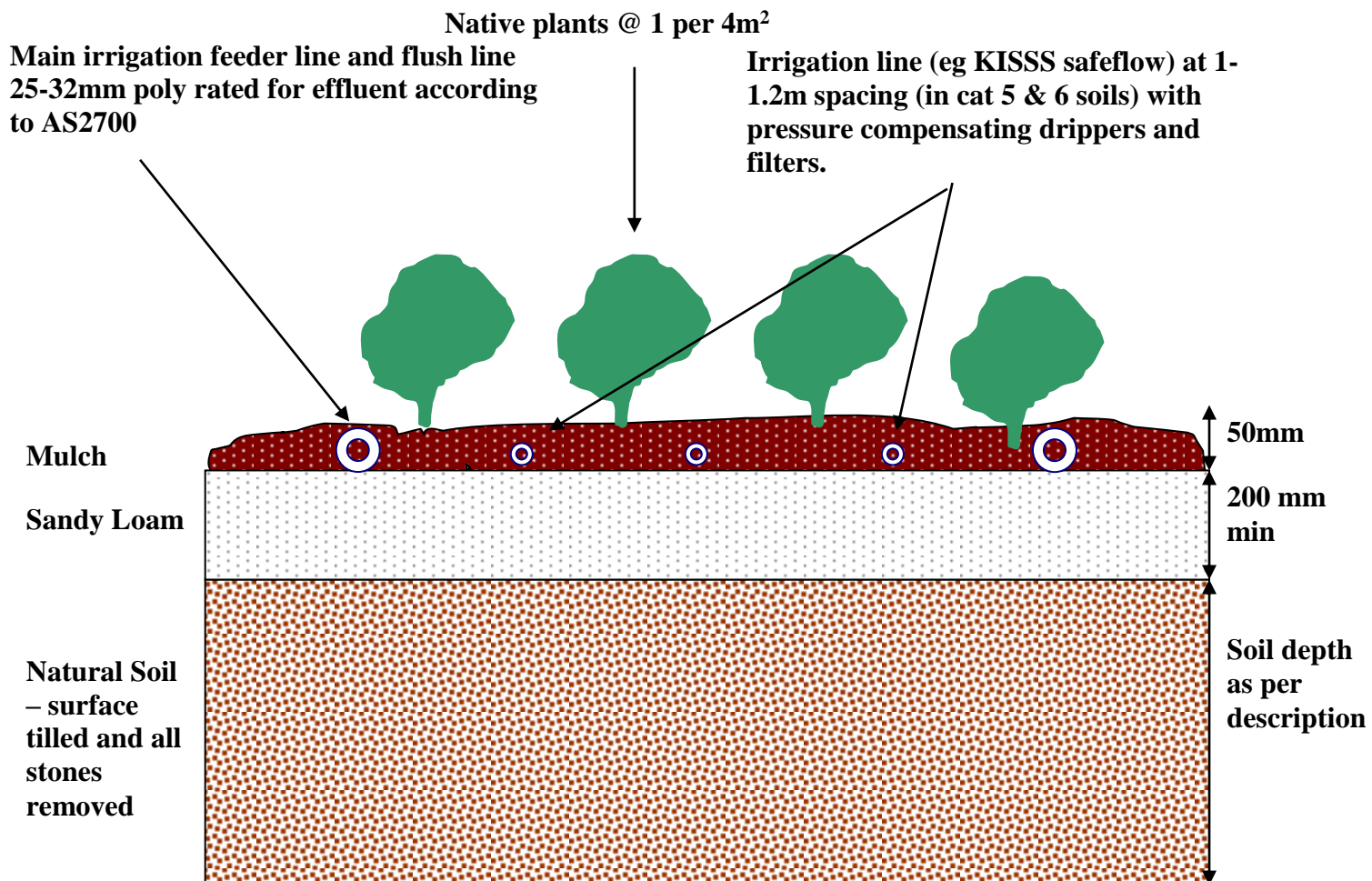
	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	John-Paul Cumming		21/10/2019

Figure 1 - AWTS

AWTS - Raised irrigation bed design

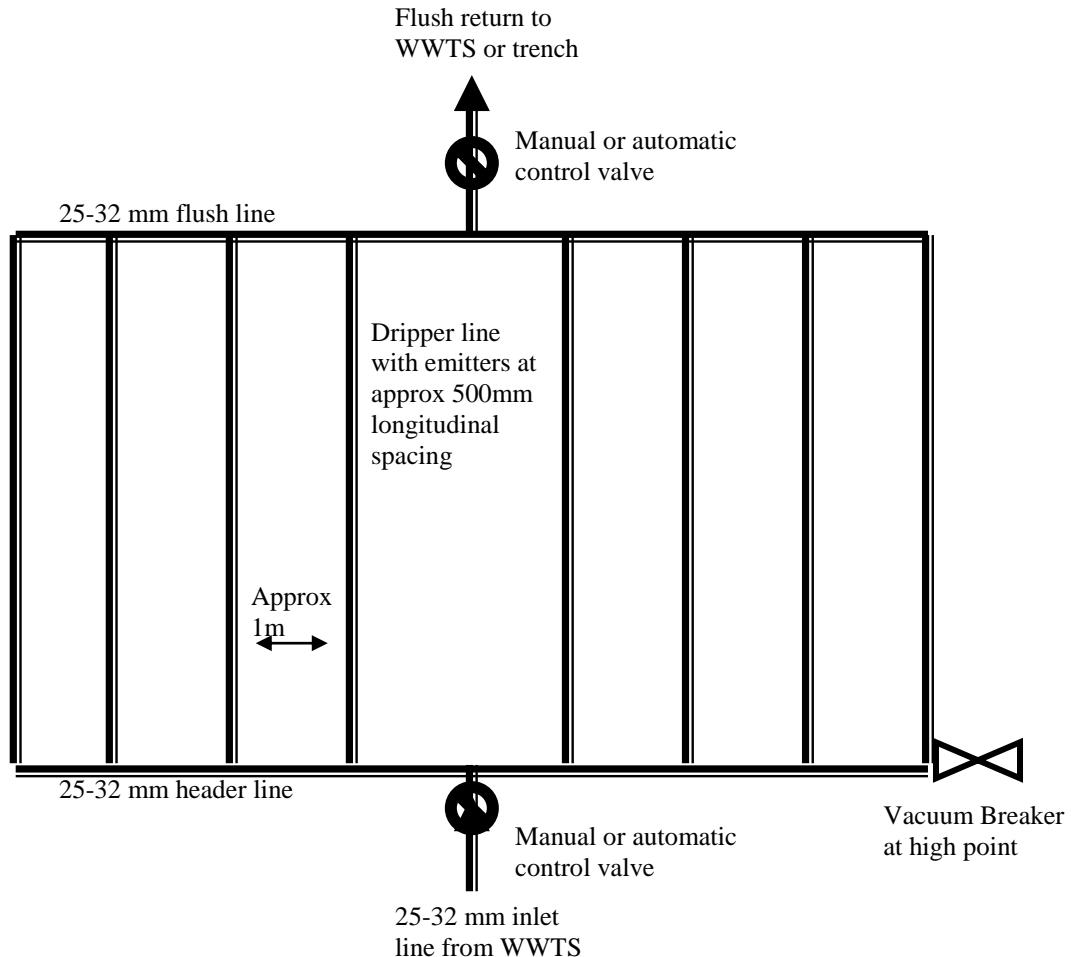
To be used in conjunction with site evaluation report for construction of irrigation areas for use with aerated wastewater treatment systems (AWTS) on shallow, duplex, or clay soils. On dispersive soils gypsum should be added to tilled natural soil at 1Kg/5m². For irrigation areas larger than 500m² the irrigation area should be split into multiples of at least 100m² with flow automatically switched between each area by a kraine valve.

Irrigation Area Cross Section



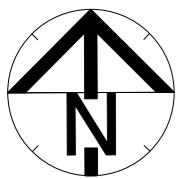
- The existing surface of the site should be tilled to a depth of 100mm with a conventional plough, discs or spring tines to break down the turf matt and any large soil clods
- A minimum of 200mm of loam should be added to the site to aid installation—the loam should be mixed into the exiting subsoil with another pass of the cultivating tines or similar

Irrigation Area Plan View



Design specifications:

1. Manufacturer's recommendations for spacing of lateral irrigation lines should be followed (either Techline brand, Geoflow or KISSS) with commonly used with spacing of 0.3m (0.6m KISSS) in highly permeable soils and 0.6m (1.0-1.2m KISSS) in less permeable loams and clays.
2. Dependent upon treatment system a 200µm filter may be installed at the pumping chamber outlet, but a 100-120 µm inline disc filter **should** be installed prior to discharge into the irrigation area.
3. A vacuum breaker valve must be installed at the highest point of each irrigation zone in a marked and protected valve control box.
4. A flush line must be installed at the lowest point/bottom of the irrigation area with a return valve for flushing back into the treatment chamber of the system (not into the primary chamber as it may affect the performance of the microbial community) or to a dedicated absorption trench.
5. The minimum irrigation pumping capacity should be equivalent to 120kpa (i.e. 12m of head) at the furthest point of the irrigation area (a gauge should be placed at the vacuum breaker) – therefore pump size can be matched on site to the irrigation pipe size and design.



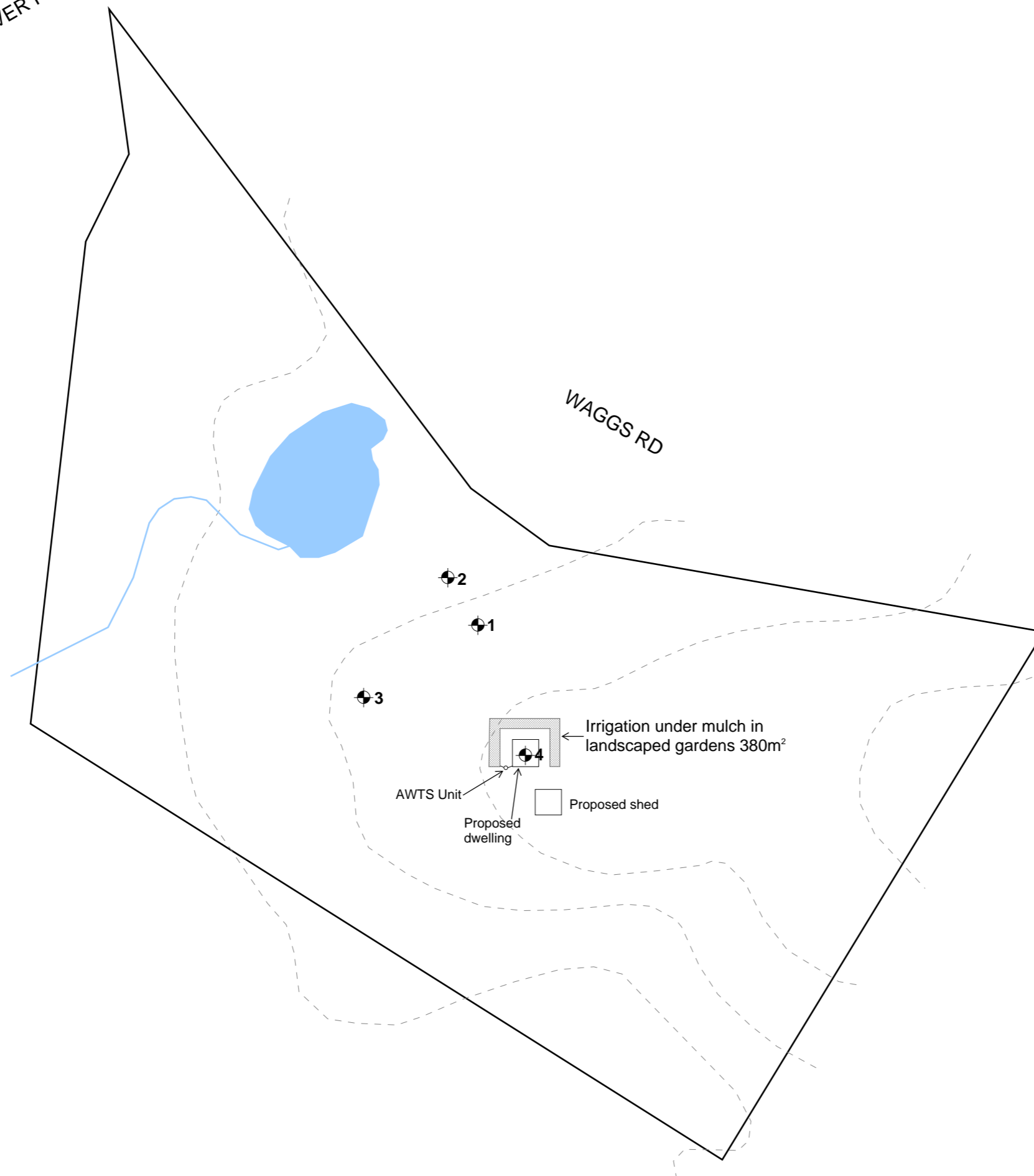
MOUNTAIN RIVER RD



GEO-ENVIRONMENTAL

SOLUTIONS

29 Kirksway Place, Battery Point
T| 62231839 E| office@geosolutions.net.au



Wastewater system:

AWTS Unit

Irrigation under mulch in landscaped gardens 380m²

Notes:
- Gypsum, at a rate 1kg/5m² is to be applied to the base of the irrigation lines to mitigate dispersion

Setbacks:
6m min buildings
40m min boundaries
100m min downslope water

Approximate Test Hole Location

Refer to GES report

Dr. John Paul Cumming
Building Services Designer-
Hydraulic
CCC774A

21/10/2019

Do not scale from these drawings.
Dimensions to take precedence
over scale.

Appinoka Regenerative Farming
Lot 4 Mountain River Rd
Mountain River

C.T.: 122929/4
PID: 3528038

Date: 21/10/2019

On-Site Wastewater Management Plan

Drawing Number:
1
Scale 1:2500

Sheet 1 of 1
Prepared by:
ED

Farm Management Plan

Appinoka
Regenerative
Farming

Proposed:
Dwelling and Mixed
Farming

Report Prepared by
Dean Suckling
Enprove Pty Ltd

Report Date:
8th October 2019



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Plan Objective:

This Farm Management Plan is drawn to provide an assessment of current agricultural activities and identify future improvements that will benefit the agricultural production values of the property and identify benefits of the proposed dwelling at Lot 4 Waggs Road, Mountain River.

The property at Waggs Road has been purchased by Thomas Botha with the intent of developing a mixed farming enterprise of mobile free-range egg producing chickens, a mixed production market garden and beef cattle grow-out. The enterprise would be established by the proponents, who will construct a dwelling and the associated facilities, contingent upon the issuing of a planning permit.

Property Details:

Site Details:

Proponents	Thomas and Nanette Botha
Property Address	Mountain River Road, Mountain River (Lot 4 Waggs Road)
Property Description(s)	3528038
Area	14.7 Hectares
Local Authority	Glen Huon Shire Council
Zoning / Overlay(s)	Significant Agricultural Zone Waterway and Coastal Protection Area (Part) Landslide Hazard Area (Low) (Part)
Current Use	Ad hoc grazing and fodder production

Proposal Overview:

This agricultural proposal calls for the introduction of mixed farming to the property of “pastured or caravan eggs” and a market garden and a small beef grow-out operation. The production of eggs will be the main financial focus of the property having a planned 1500 chickens when fully developed.

Pastured Eggs are popular, and the current demand outstrips supply. It is not an industry that lends itself to gross commercialization due to the relatively intensive workload, the continual movement of enclosures and the intrinsic demands of customers for the best possible animal welfare. The most popular aspect of pastured eggs is they taste great, and an increasingly discerning food market is demanding quality. Regular supply is scarce, and producers who can supply regularly will sell every egg. Pastured eggs can command \$6 - 10 per dozen supplied to cafes and restaurants.

The number of chickens located on the property will initially be 500 free-range chickens and growth to 1500 free-range chickens is anticipated occupying the same footprint.

The chickens are held in relocatable electrified enclosures and relocated every 7-10 days depending on the season. This allows them to consume pasture and insects as part of their diet.

Pasture reared chickens rate a Dry Sheep Equivalent of 0.02; the proposed 1500 chickens would rate the equivalent of 30 sheep.

The proponent, Thomas Botha, has developed and started a poultry farm enterprise in South Africa and worked for the Costa Group in NSW. He understands farming and the complexities and work of this type of farming.

The property is divided into three areas, a well developed pastoral area, a poorly developed area which will become quality pasture and a wooded area which will never be suitable for pasture.

The current agricultural production value of the property is estimated at \$15 000 per year in fodder production and cattle growth. This value will be retained, and the revenue growth will occur from a newly developed part of the property.

After the initial development period, the revenue from the property is expected to exceed \$350 000 per year, and there is capacity for even higher returns into the future.

Siting a dwelling on the property means that the property can be improved confidently knowing that those improvements can be effectively utilised to increase the productive values.

The development of the enterprise calls for the investment in agricultural of over \$50 000, the improvement of soils to a productive agricultural level and the investment of a dwelling and shedding and associated works of over \$300 000.

Justifications for a dwelling:

The justifications for a dwelling on a small lot farm are the same as justifications for any farming property. The management times and tasks can be similar:

- These type of farms are 365 days a year and long days and into nights
- The loss of animals or a seasonal crop will impact profitability and viability.
- Chickens need to be monitored constantly for feed supply, water supply and illness. Some chickens are prone to leaving enclosures and need to be collected.
- Predator Control for both eggs and chickens
- Bio-security: New nationally mandated bio-security requirements mean all visitors, vehicles and new plant stock to the property need to be screened and, if necessary, disinfected. This needs to be monitored constantly.
- Monitor Crops for Harvest: Market gardens need to be monitored daily for readiness and picked accordingly.
- Monitor and react to weather: Heat, frost, hail and wind can play havoc and responding quickly with a management decision can save produce or at least minimize losses.
- Security and prevention of theft of produce and equipment
- Do the work: relocate mobile sheds and enclosures, feed chickens, wash and stamp eggs, treat chickens for lice and mites, collect manures, plant crops, weed crops, harvest crops, water crops.
- Wildfire risk prevention and response: In the advent of wildfire a resident in a dwelling will be more responsive, animals can be monitored and relocated if required, fire mitigation procedures implemented and maybe even fire fought.

Good farming is about timeliness and monitoring constantly and reacting quickly is incredibly important. Failing to do so costs production and, sometimes, viability. The size of the farm is almost irrelevant, the quality of the farm management is what matters, and it's very difficult to achieve that remotely.

Agricultural Production Values:

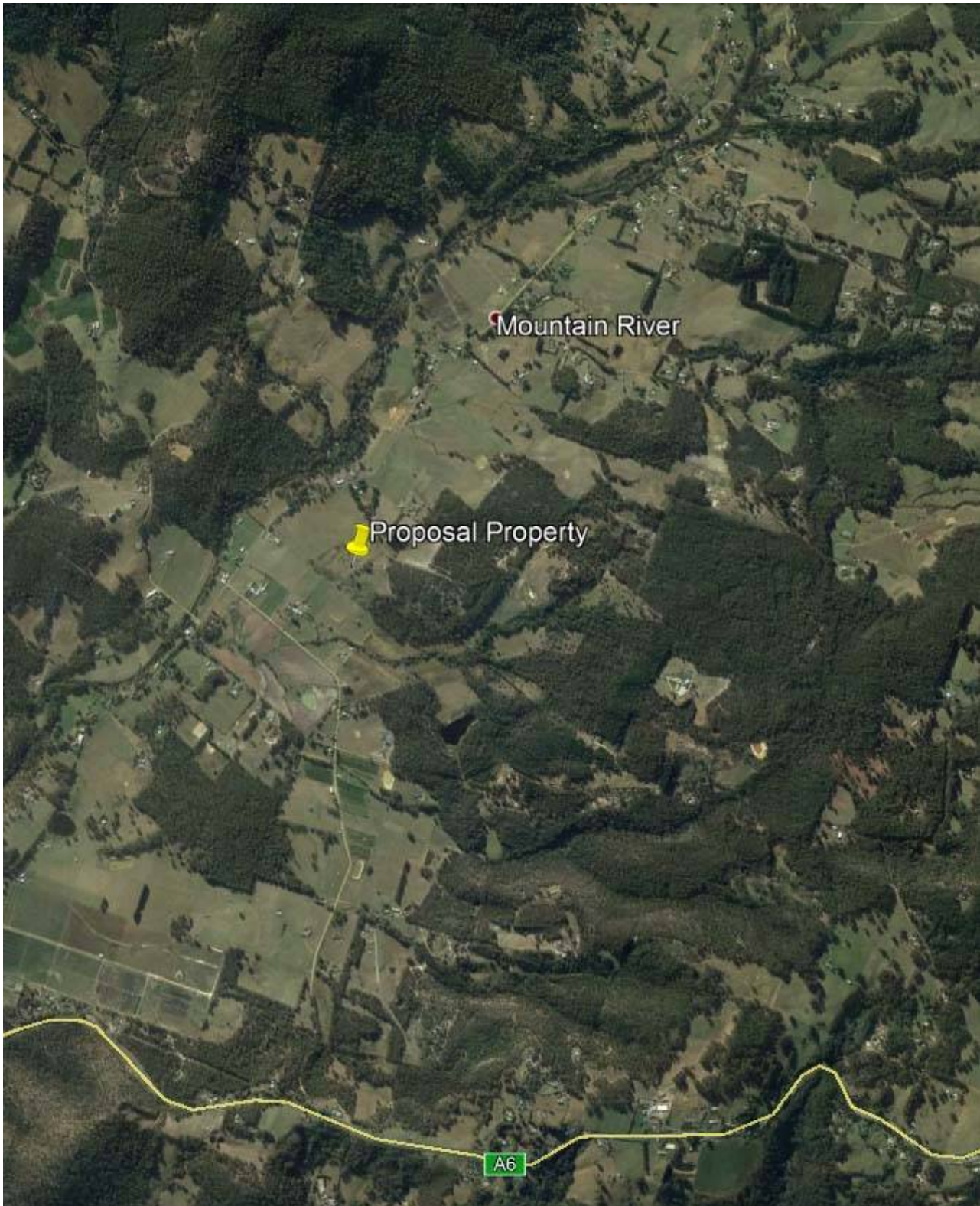
Table 1: Comparative and Indicative revenues of different forms of agriculture per utilised hectare.

Agricultural Activity	Indicative Revenue per Hectare used: \$
Fodder Production - Uncultivated, 8 rolls \$50 per roll	400
Cropping - Wheat (\$ 250 Tonne 1.74 Tonnes per ha)	435
Sheep Grow-out (MLA stocking rate) \$100 per sheep	700
Cropping - Canola (\$500 x 2 tonne per ha)	1000
Beef Grow out (MLA stocking rate) 1.4 x 400 kg x \$2.05 kg	1150
Fodder Production - Cultivated	1500
Beef Bull Breeding	2000
Horticulture – Native Flowers	4000
Dairy - Predominantly Pasture	4500
Dairy - Supplementary Feeding (Fodders and Grains)	6000
Horticulture - Grapes (20 tonnes per hectare)	6000
Alpaca Breeding	10 000
Free Range Chicken – Meat (1500 Birds x \$3.50 x 3 cohorts)	12 600
Calf Rearing – Beef (3 cohorts annually)	15 000
Equine Breeding (extremely variable) - Thoroughbreds	15 000
Horticulture – Berries Wholesale (2000 plants x 10 kgs x \$1.50 per kg)	30 000
Calf Rearing – Dairy (3 cohorts annually)	30 000
Market Gardening - Brassica Greens	30 000
Horticulture - Orchards (Apple and Pear Limited)	34 000
Horticulture – Berries Wholesale (2000 plants x 10 kgs x \$3.50 per kg)	70 000
Mobile Outdoor Chickens – Eggs, Retail Market (average 500 birds per ha, 0.8 eggs per bird per day, 55 cents per egg)	80 000
Free Range Chickens – Eggs (1500 birds per ha, 0.8 eggs per bird per day, 30 cents per egg)	130 000
Horticulture – Organic Garlic (10 T/Ha, 10000 kgs X av. \$15 per kg)	150 000
Fish Breeding (goldfish in troughs)	150 000
Horticulture - Roses (7000 plants X 50 Stems x \$0.50)	175 000

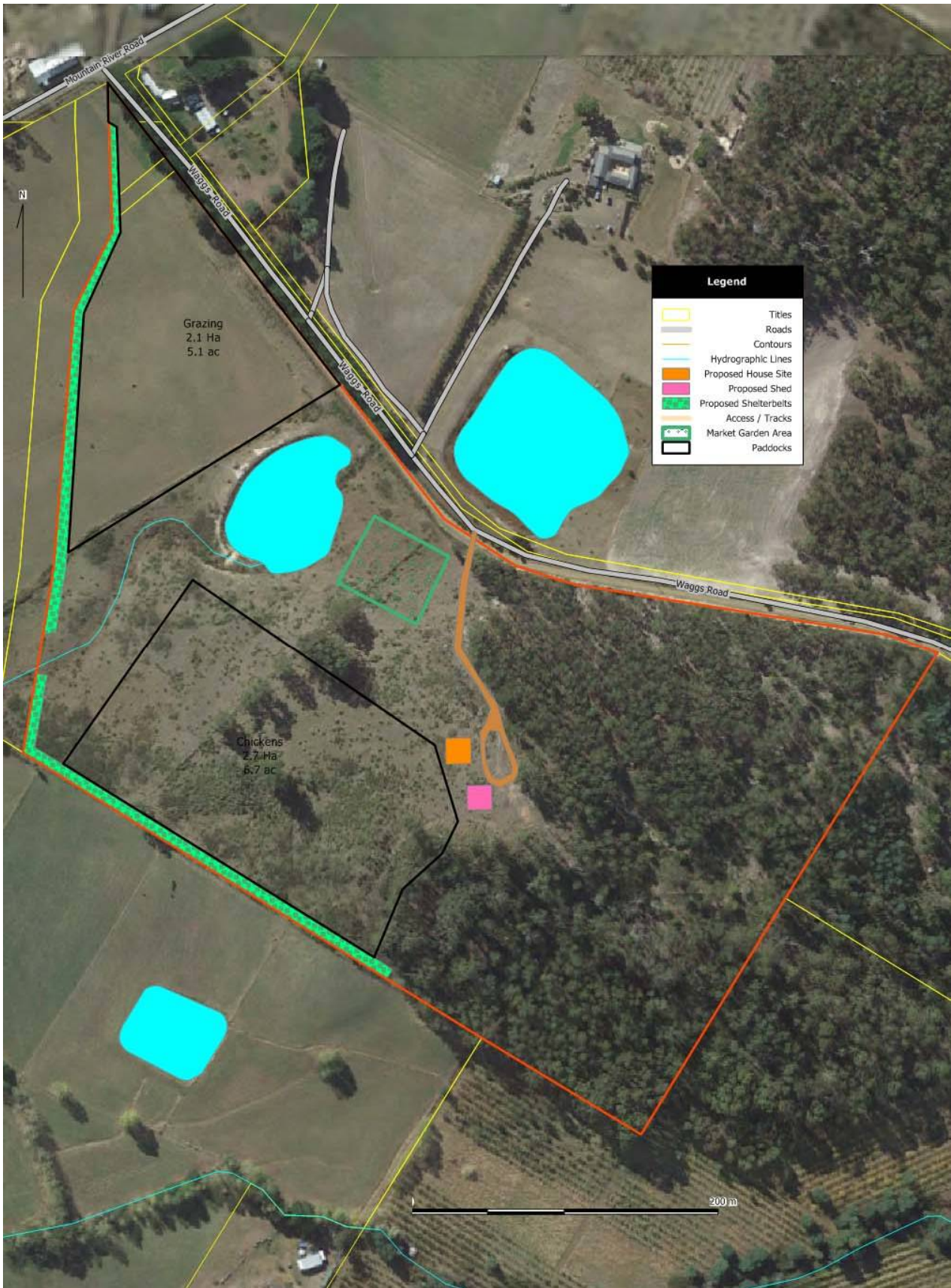
This is an indicative income table, where possible industry values have been used; otherwise, our experience has been drawn on. This table is designed to be indicative for agricultural activities in areas with a suitable climate, soils, water supply, total available land etc. There are of course many variabilities which will impact production returns. It does not assess profitability. It is indicating production only, value-added marketing, farmgate sales and processing will increase the returns.

Site Location and Property Map:

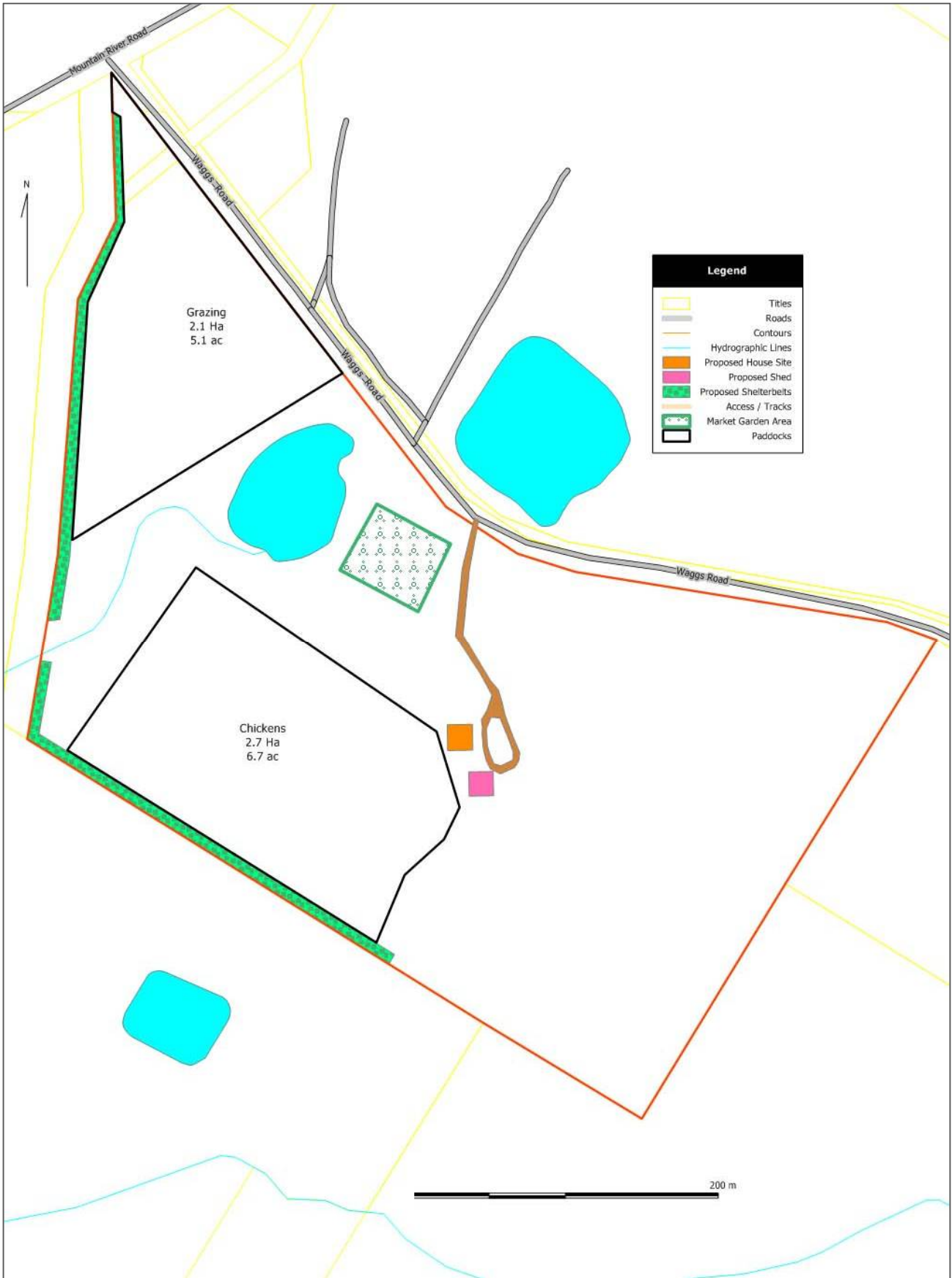
Mao 1: Property Location:



Map 2: Proposed Property Layout



Map 3: Proposed Layout



Farming Factors:

Site Topography:

The topography at Waggs Road is gentle slope from east to west with a gradient change of 40 metres across the entire property. The western end is gentle sloping paddock, and the eastern end is a vegetated rocky outcrop.

Climate:

Mountain River climate statistics:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Max (°C)	23.5	22.7	21.3	17.9	15.0	12.6	12.2	13.3	15.4	17.4	19.3	21.3	17.7
Mean Min (°C)	9.9	9.2	8.1	5.8	4.4	2.1	1.9	2.6	4.3	5.6	7.5	8.6	5.8
Mean Rain (mm)	37.8	29.2	43.8	43.2	52.4	55.7	65.7	85.9	74.6	63.6	51.5	53.4	700.9
Median Rain (mm)	31.9	25.6	36.8	41.0	46.9	48.2	54.5	85.3	67.0	56.2	55.8	55.1	697.8
Mean Rain Days	5.7	5.7	7.6	8.8	10.1	8.0	10.9	12.7	10.7	10.7	9.5	9.0	109.4

Data: BOM 094220 Grove

The climate is the typical Mediterranean type of warm dry summers and cool wet winters. The climate is good for the chosen agricultural activity although there is potential for water inundation which needs to be managed.

Water Supply:

The property has a significant storage dam of over 3 megalitres and a water spring and a dam at the east. Neighbours report this a reliable source of water. The proposed dwelling and shed will have water tanks attached, and these will provide suitable drinking water for the chickens. Those buildings are expected to generate over 600 000 litres of captured water per year. Allowing 0.5 of a litre per chicken per day the entire requirement for the egg production will be 275 000 litres per year for drinking water. Having double this allowance is recommended for spillages, blockages and periods of higher temperatures.

The dwelling itself will rely on rainwater captured from the roof into tanks. Good quality bore water is available at a depth of 10-20 metres if that requirement ever becomes necessary and the property can get a licence.

Weed and Pest Management:

The property is not subject to any major pest and weed issues but has some blackberry issues along some fence lines and the wet areas. These have been sprayed and will continue to be sprayed. There is a significant amount of sagg on the proposed chicken areas, and these will be excavated and composted, the property will be subject to usual pastoral weed issues. Any environmental and agricultural pests and weeds will be controlled by standard farm management methods such as sprays and/or physical removal.

Fire Management:

The land use is not seen to contribute any fire risk to the area. The land is in a designated bushfire area, although not of any greater risk than normal farmland. Fire management plans have been drawn for the property. Firewater supply will be available from tanks to be attached to the house and shed roofs and minimum water supply held as per recommended conditions.

Buffer Distances to dwelling and sensitive uses:

The grazing and market garden are low offence activities and are not considered to create any form of issue. Mobile chicken farms are usually low offence activities, but during wetter seasons some odour can be produced at the end of a placement. The Nutrient Management Plan below demonstrates how this can be minimised. There are no specific guidelines for buffer distances for this type of farming, although other states use 100 metres as a guideline. In this instance the nearest dwelling to any part of the chicken producing areas is 196 metres which is the house to the south (refer attached buffer distance map).

Adverse impacts from adjacent land:

The properties within a 500-metre radius from the proposed dwelling are grazing farms or lifestyle properties. The activity of the area is lifestyle, pasture production and grazing, which generate minimal dust, odour, noise and chemical spray activity and not seen to create any issues for this farming.

Traffic Movement and Transportation:

The operation is not one of intensive traffic movement, and heavy vehicle traffic would be rare. The majority of produce movements from the property will be conducted by the proponents themselves.

Mortality Management:

Chicken mortality in these types of farming is low, and all dead chickens (suggesting 20-30 per annum) will be collected and composted. For that number of birds composting is acceptable, as long as it does not generate odour or pest issues. In the advent of several birds at the same time, transfer and disposal to landfill will be required.

Mass mortality is a notifiable event to DPIPWE Biosecurity team.

Soils:

Two agricultural soil tests were collected for laboratory analysis, one from the existing front paddock area and one from the rear area to be developed as pasture area for the chickens. The two soils are quite different, the front being classed loam and the rear a lighter clay.

Soil Test Results Summary (Test Results at Rear):

Front Paddock	
Key Observations	<p>Soil is rated as sandy clay loam.</p> <p>Slightly low pH CaCl₂ (4.8) is slightly acidic. Aluminium is still in a good range.</p> <p>Good phosphorus levels (Olsen P 16.1 mg/Kg)</p> <p>Low potassium levels (111 mg/Kg)</p> <p>Good sulphur levels (9.9 mg/Kg)</p> <p>Good Organic Carbon (4.8 %)</p> <p>Low nitrogen levels (seasonably variable)</p> <p>Trace elements are fair, although boron will be required to improve pasture.</p> <p>Good cation levels and ratios (indicating soil structure and balance issues), calcium is at the high end of ideal and potassium is slightly low. Exchangeable aluminium is slightly elevated.</p> <p>Low conductivity but good exchangeable sodium levels indicating no sodicity or salinity issue.</p>
Plans / Applications	<p>The soil is considered slightly acidic, and this will be costing some production and will need to be corrected as future production will drive soils to increased acidity. In this instance, the addition of potassium fertiliser (which coincides with a soil potassium deficiency) should be adequate to move pH into the best range. pH could also be corrected with a magnesium or sodium bearing conditioner. Phosphorus is slightly low and a phosphorus bearing fertiliser will also boost production. At the time of testing nitrogen was low and a nitrogen fertiliser will assist production although when the chicken rotation commences this will provide adequate soil nitrogen. One kilogram per hectare elemental boron would also be beneficial to improve pasture quality. Although not tested, molybdenum is likely to be deficient, and this will be beneficial for improving the soil nitrogen cycle (50 grams elemental molybdenum per hectare).</p>

Back Paddock	
Key Observations	<p>Soil is rated as sandy clay loam.</p> <p>Low pH CaCl₂ (4.6) is acidic. Aluminium is elevated.</p> <p>Very low phosphorus levels (Olsen P 4.9 mg/Kg)</p> <p>Very low potassium levels (72 mg/Kg)</p> <p>Fair sulphur levels (6.52 mg/Kg)</p> <p>Good Organic Carbon (4.3 %)</p> <p>Very low nitrogen levels (seasonably variable)</p> <p>Trace elements: iron is elevated, manganese is good, copper and boron are too low.</p> <p>Poor cation levels and ratios (indicating soil structure and balance issues), calcium is low, and magnesium is elevated. Exchangeable aluminium is extremely high.</p> <p>Low conductivity and exchangeable sodium in cations are indicating no salinity or sodicity issues.</p>
Plans / Applications	<p>The major issue here is the very low calcium levels in soils. This is causing the acidity issue and should be corrected. Poor calcium creates soil structure issues and correcting this will offer resistance to erosion as well. Acidity in soils releases aluminium which is toxic to most agricultural grasses and encourages weeds. Low calcium in soils reduces calcium in plants and indirectly in stock, which reduces growth and animal health and egg production.</p> <p>Phosphorus levels are very low, and this will impact on grass growth, for the improvement program, a significant investment in phosphorus fertiliser will be required.</p> <p>As above nitrogen was very low at the time of testing and the same correction applies.</p>

Pastoral Improvement:

There are three distinct vegetation covers on the property at present. The western areas are a fair quality pasture coverage consisting of improved agricultural grasses, albeit with significant agricultural weeds. The proposed chicken areas are poor quality grass with plenty of sagg weeds. The eastern end has no pastoral cover and is scrub and will not be included.

The current paddocks will be readily improved by reducing soil acidity and oversowing a suitable pastoral species. The local seed man can advise best grass mix for the area.

The chicken area also needs soil conditioning addressed, and a mixture of seasonally active but perennial pasture grasses will be sown. This is to maintain maximum coverage all year round. Typically a mix of clover, rye, fescues, timothy and poultry specific grasses are included. Again a local seed specialist will provide the best advice.

Pasture can take 6-12 months to establish effectively so minimal use for the initial period is recommended to allow best possible rooting which allows the fastest recovery. Pasture grasses grow at a maximum rate at 30-40 days so any rotation would be best 40 days or longer if achievable. This also has the benefit of maximum nutrient use from the soil.

Oats are a fast-growing cover crop and can be used most seasons to fill gaps and provide feed if required.

Market Garden Crops:

The market garden area will consist of mixed plantings and will primarily focus on the development of an organic garlic market. Organic garlic is highly marketable and always in short supply in a market place demanding traceability of food production. Organically produced garlic lend themselves to smaller production as larger producers shy away from the higher labour inputs and greater risks inherent in a low chemical environment.

After the initial development and certification period, the horticulture is expected to produce 4.5 tonnes of red and white garlic. The revenue from garlic sales would exceed \$50,000 a year. Australian Red Garlic and Australian White Garlic will be the produced varieties, these plants are cool weather acclimatized and are the most suitable and recognized garlic type. Other varieties can command higher prices but can be more complex to produce commercially.

A variety of brassica crops and seasonal vegetables will also be produced, but this has not been finalized as yet and will be subject to further assessment of weather and ground conditions.

A large part of the fertility required for this area will be the use of composted night manures from the chicken shed closing that waste loop.

Mobile Poultry System Design and Management:

Mobile poultry systems generally include a mobile roosting facility on wheels or skids, an electrified mesh enclosure and water and feeding dispensers. All equipment is designed to be readily relocated between areas of the paddock to provide fresh pasture when required. The rotation period is generally 1-2 weeks, but this can be seasonally and dependent on pasture available. Inundated ground may require rotation twice in a week. Chickens typically consume 20% of their feed from within the enclosure and 80% supplementary feed.

The rotation occurs over a set grid to ensure that a 3 month no return period is achieved.

Eggs are collected daily and graded and washed and packed.

All chickens are purchased from a commercial breeder and are kept in an egg production cycle for around 70 weeks. New chickens are introduced to the property and cycled before old chickens are moved away. This can create a duplication of numbers for a period of 4-6 weeks.

Predators can be an issue for free-range chickens, and sentinel guard animals such as dogs and alpacas are used for protection. Birds may also be locked away each night and released in the mornings.

Image 1: Egg layers and fabricated mobile roosting sheds.



Infrastructure and Business Management:

Infrastructure Investment:

There is currently no infrastructure for the proposed activity and all infrastructure constructed and equipment purchased.

Livestock:

All chickens will be purchased from a commercial breeder. The breeds are generally Lohmann Browns, Bond Black or Whites and ISA Browns which are suitable for free-ranging and commercially available. Chickens need to be replaced after a 70-week cycle and are resold.

Accreditation for Food Safety (info supplied by DPIPW):

The role of the Primary Produce Safety Program is to ensure that food produced is safe to eat through the Primary Produce Safety Act 2011 (and associated regulations).

The process for primary produce accreditation includes the following steps:

1. Forwarding an application of form then:
2. Forwarding of
 - a. Food Safety Program (FSP)
 - b. Plans/diagram of premises including sheds, process and packing area and associated vehicles, equipment and surrounds
3. Desk audit of the FSP and plans to check compliance with legislation and standards (amendments may be required before accreditation)
4. Initial onsite inspection with a DPIPW Officer

After satisfactory assessment of the above and payment of the application fee (currently \$567), accreditation will be granted. An initial audit based on the FSP will be done (by a DPIPW Officer) within 3-6 months of accreditation. Eggs cannot be sold before accreditation has been granted.

After the initial audit, food safety audits are carried out (as a condition of accreditation) at least annually by a suitably qualified third party auditor (see list *including scope* - <http://dpipw.tas.gov.au/biosecurity-tasmania/product-integrity/food-safety/approved-food-safety-auditors>). There is also an annual registration fee based on the number of staff.

Food safety audits are carried out to verify compliance through observation of operations and review of records by the auditor.

The FSP for shell egg accreditation template is available on the DPIPW website and has been developed by the Primary Produce Safety Program to fulfil requirements of the

- Food Standards Code Primary Production and Processing (PPP) standard for Eggs & egg production Std. 4.4.2.5
- Tasmanian Primary Production Safety Act 2011 and Egg regulations 2014

Staffing:

Mr Botha and his family will manage and work the enterprise, as is usual in these types of facilities contractors and part-time workers are often engaged. Mr Botha has extensive experience in poultry and horticulture and is familiar with the requirements and workload.

Allowance for possible future expansion:

The property itself has a reasonable capacity for growth, having a total capacity of 10 000 chickens for this type of production, which is well beyond the proposed stocking numbers.

Opportunity Cost:

There are few other agricultural products that offer the flexibility of land use and return as pastured eggs and market gardens.

Financial Projections:

This indicative budget is provided based on current operations and based on 500 laying chickens in year one increasing to 1500 birds in year 3 and after. After that initial development period, the property could expect a net return of \$172 000 per annum at these rates.

Table 2: Indicative Revenues for 1500 chickens (year 1; 500, year 2; 100, year 3+; 1500) excluding dwelling, landholding, infrastructure investment and selling costs, not CPI-adjusted:

Income/Operating Cost Item	Year 1	Year 2	Year 3	Year 4	Year 5
Egg Sales 80% eggs X \$0.55#	\$80,000	\$160,000	\$241,000	\$241,000	\$241,000
Spent layer Sales		\$2,500	\$2,500	\$2,500	\$2,500
Market Garden	\$25,000	\$50,000	\$50,000	\$50,000	\$50,000
Beef Cattle Sales (5 X 400kg at \$3.50/ kg)	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Total revenues	\$139,000	\$271,500	\$352,500	\$352,500	\$352,500
Chicken Purchases (\$15 per bird)	\$7,500	15 000	\$7,500	\$15,000	\$7,500
Egg Cleaning Costs	\$6,000	12 000	\$18,000	\$18,000	\$18,000
Market Garden Preparation and Seed Costs	\$7,000	\$15,000	\$15,000	\$15,000	\$25,000
Beef Calf Purchases	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
Animal Maintenance (Vet, medications etc.)	\$3,000	\$6,000	\$9,000	\$9,000	\$9,000
Feed Costs (Chicken feed 20, 40 & 60 tonne PA)	\$10,000	\$20,000	\$30,000	\$30,000	\$30,000
Pasture Costs	\$10,000	\$4,000	\$4,000	\$4,000	\$4,000
Rates, Insurances, Utilities	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Infrastructure Maintenance		\$5,000	\$5,000	\$5,000	\$5,000
Staffing / Contractor Costs		\$15,000	\$30,000	\$30,000	\$30,000
Fuel	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Total Costs	\$63,500	\$87,000	\$140,500	\$148,000	\$140,500
Gross Profit \$	\$58,500	\$119,500	\$172,000	\$164,500	\$172,000

Notes:

Black positive income, red costs

average price per egg

This list is by no means comprehensive and additional costs incurred and revenues generated and can be strongly influenced by management style.

Environmentally Sensitive Areas:

Natural Resource Management:

The property has significant vegetation cover, particularly at the western end. The proponents are conservation-minded and value the retention and protection of those trees and ecological habitat. They will be essentially left as is, although some firewood collection will occur. There are no significant waterways, although the overflow from the dam is classified for protection. That area is in poor condition with blackberry cover, and it will be excluded from any farming activity and will ultimately become a revegetation project.

Erosion, Compaction & Landslide Hazard:

The property has a low risk of erosion. Sound vegetation cover can be maintained, the water collection areas are small, and the property is not steep. Maintaining the chicken rotation routine will reduce the risk of bare patches in the ranging areas to prevent any risk in this area.

Compaction of soils in the paddocks could occur in traffic areas such as gateways, troughs, fencelines and sheltered areas. Heavy vehicle traffic should be confined to constructed tracks, particularly during wetter seasons.

There are 3 designated landslide hazard areas. These areas are not within the farmed areas and are well vegetated with large trees and ground cover, and this will not change. They are not slipping, and it is a little difficult to understand why they have been included. Nonetheless they will not be altered in any way.

Groundwater:

Groundwater is seasonally variable at a depth of 10 - 20 metres and is at low risk from exposure from any form of nutrients infiltrating from the surface due to soil clay content and vegetation cover. Maintaining plant coverage will manage soil nutrient levels lower to minimize any risk.

Drainage:

The property has no formal drainage network relying on the designated waterway, overland flows and ground infiltration. Any water flows onto the property, from Waggs Road to the main dam, will not be impeded in any way as part of the development.

Flood Zones:

The property is clear of any flood areas.

Animal Welfare and Biosecurity:

Animal welfare for this enterprise is expected to be very good. The practice of pastured eggs is almost entirely about animal welfare and so is generally a very good life for animals.

A list of best practice animal welfare guidelines is available from <http://animalwelfarestandards.net.au/>. This is a comprehensive and generally common-sense approach to caring for farm animals driven largely by the buyer's expectations.

Biosecurity is about preventing and containing any disease and negative issues which could impact both the farm and agriculture generally.

Recommended Procedures for Biosecurity

- The farm should have a documented Farm Biosecurity Plan.
- All livestock movements onto the farm have known health status (e.g. Livestock Health Statement/Declaration or equivalent)
- All introduced livestock are inspected for signs of ill health or disease on arrival at the property and kept in isolation for a period
- Livestock are inspected regularly for ill health and disease, and appropriate action is undertaken where necessary
- The risk of livestock straying onto or from the property is minimised
- There are systems in place to notify a veterinary practitioner, or animal health officer, if unusual disease, illness or mortality is observed
- Where reasonable and practical, the movement of people, vehicles and equipment entering the property are controlled and, where possible, movements recorded
- Any other procedures or practices that contribute to minimising the risk or spread of disease

The property has a registered Property Identification Number.

Animal welfare is managed by DPIPW (<https://dpipw.tas.gov.au/biosecurity-tasmania/animal-biosecurity/animal-welfare>).

Nutrient Management Plan:

This type of farming in this location is considered a low risk of nutrient build-up and nutrient loss. The very nature of rotational use means that pasture is given a good opportunity to use nutrients deposited in the soil.

The property is marked by a waterway, and appropriate buffers for enclosure placement have been allocated around this area.

Typically, a 500 chicken enclosure occupies 600 square metres, two will require 1200 square metres at a time, and three will require 1800 square metres. This means that there could be 15 relocations within the designated 2.7-hectare chicken zone before an area needs to be reused. This is considered better than best practice to contain nutrient build-up risk.

Nutrient Management Recommendations:

- Over-sow an appropriate grass annually to ensure best pastoral coverage to minimise runoff and maximise plant uptake (soil fertility removal and dust reduction)
- Avoid re-using areas that have not adequately recovered
- No fertilizer use
- Minimal water use
- Restricted soil working to minimise damage to soil structure
- Liming (or other calcium bearing product) to improve soil quality, stimulate soil biology, improve friability and water infiltration
- Soil aeration to improve soil quality and water infiltration
- Soil test chicken ranging biannually to monitor any fertility changes
- Collect night manures for removal and reuse to market garden area
- Investigate an on-farm cropping program to produce additional feeds minimising feed imports (nutrient imports) from off-farm
- Maintain a site logbook or farm dairy to track enclosure locations, feed imports, weather, odour and other information which could create an environmental risk
- Maintain a daily routine of collecting eggs from the enclosures which are not laid in sheds.
- Have a mortality compost pile or disposal method (expecting 2 per cent mortality per annum).
- Create a 30- metre use exclusion zone around the waterway
- Move enclosures more regularly during high rainfall / inundation periods.
- 50 per cent ground cover should be maintained (if this is challenged enclosure relocation will need to occur more often; more imported feed given to reduce pasture pressure or stocking rates / chicken numbers may need to be decreased)

Image 3: One week after chicken enclosure placement



Image 4: Eight Weeks after enclosure placement



I certify that all the above statements are true and correct to the best of my abilities.



Dean Suckling
Agricultural and Environmental Consultant

Site Images:

Image 1: Drone image looking south-east across the property



Image 2: Image looking south-east from front of the property



Image 3: Drone image looking north-west of the cleared part of the property



Image 4: House and shed site



Image 5: Drone image, area to be renovated for chicken paddocks



Image 6: Paddock area to be improved and used for chicken paddocks



Image 7: Existing gateway to be upgraded for the property entrance



Image 8: Demarcation between improved and unimproved paddocks at the southern fence line



Image 9: Existing water dam



Image 10: Waterline below the main dam to be managed and revegetated




Image 11: Gully contained in Landslide Hazard Area.



Image 12: Blackberry issues to be managed as part of farm management



Soil Test Results

Customer:	Thomas Botha	
Sample Date:	5/09/19	
Sample Name:	Front	
Lab. No.	5FS19022	
Test Type:	Soil Analysis - Comprehensive and Particle Sizing	

Test Depth (cm)	0-10
Soil Colour	Grey Black
Gravel	0%
Texture	Loam


	Unit	Level Found	Good Range
Phosphorus Olsen	mg/Kg	16.1	18 - 25
Phosphorus Colwell	mg/Kg	34	40 - 63
Potassium Colwell	mg/Kg	111	140 - 250
Sulphur	mg/Kg	9.9	10 - 20
Organic Carbon	%	4.8	3 - 6
Ammonium Nitrogen	mg/Kg	8	
Nitrate Nitrogen	mg/Kg	3	
Conductivity	dS/m	0.08	< 4.0
pH Level (H ₂ O)	pH	5.7	5.6 - 6.4
pH Level (CaCl ₂)	pH	4.8	5.0 - 6.0
Aluminium (CaCl ₂)	mg/Kg	1.4	< 5.0
DTPA Copper	mg/Kg	3.64	> 1.5
DTPA Iron	mg/Kg	147	100 - 400
DTPA Manganese	mg/Kg	12	> 20
DTPA Zinc	mg/Kg	3.8	> 5
Boron (Hot CaCl ₂)	mg/Kg	0.5	> 1.5

Cations	Unit	Level Found	Good Range
Cation Exchange Capacity	meq/100g	8.29	10 - 20
Exchangeable Calcium	meq/100g	6.98	
	BSP %	84.20	70 - 85
Exchangeable Magnesium	meq/100g	0.88	
	BSP %	10.62	10 - 20
Exchangeable Potassium	meq/100g	0.18	
	BSP %	2.17	3 - 8
Exchangeable Sodium	meq/100g	0.10	
	BSP %	1.21	< 5
Exchangeable Aluminium	meq/100g	0.15	
	BSP %	1.81	< 2.0

MIR Particle Sizing	Unit	Level Found	
Sand	%	65.50	
Silt	%	9.51	
Clay	%	24.98	
Classification		Sandy Clay Loam	

Enprove Ag & Environment		
www.enprove.com.au		0448 866 205
soil testing	nutrient management	effluent management
dung beetles	water quality analysis	farm mapping
All tests are conducted in a laboratory with ASPAC accreditation.		

Soil Test Results

Customer:	Thomas Botha	
Sample Date:	5/09/19	
Sample Name:	Rear	
Lab. No.	5FS19023	
Test Type:	Soil Analysis - Comprehensive and Particle Sizing	

Test Depth (cm)	0-10
Soil Colour	Brown Grey
Gravel	0%
Texture	Clay Loam

	Unit	Level Found	Good Range
Phosphorus Olsen	mg/Kg	4.9	18 - 25
Phosphorus Colwell	mg/Kg	16	40 - 63
Potassium Colwell	mg/Kg	72	140 - 250
Sulphur	mg/Kg	6.5	10 - 20
Organic Carbon	%	4.3	3 - 6
Ammonium Nitrogen	mg/Kg	8	
Nitrate Nitrogen	mg/Kg	< 1	
Conductivity	dS/m	0.04	< 4.0
pH Level (H ₂ O)	pH	5.8	5.6 - 6.4
pH Level (CaCl ₂)	pH	4.6	5.0 - 6.0
Aluminium (CaCl ₂)	mg/Kg	1.7	< 5.0
DTPA Copper	mg/Kg	0.91	> 1.5
DTPA Iron	mg/Kg	382	100 - 400
DTPA Manganese	mg/Kg	20	> 20
DTPA Zinc	mg/Kg	2.0	> 5
Boron (Hot CaCl ₂)	mg/Kg	0.3	> 1.5

Cations	Unit	Level Found	Good Range
Cation Exchange Capacity	meq/100g	5.18	10 - 20
Exchangeable Calcium	meq/100g	3.05	
	BSP %	58.88	70 - 85
Exchangeable Magnesium	meq/100g	1.33	
	BSP %	25.68	10 - 20
Exchangeable Potassium	meq/100g	0.23	
	BSP %	4.44	3 - 8
Exchangeable Sodium	meq/100g	0.11	
	BSP %	2.12	< 5
Exchangeable Aluminium	meq/100g	0.46	
	BSP %	8.88	< 2.0

MIR Particle Sizing	Unit	Level Found	
Sand	%	54.95	
Silt	%	20.25	
Clay	%	24.80	

Classification	Sandy Clay Loam
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