

SHIRE
of
DANDARAGAN

AGENDA AND BUSINESS PAPERS

for the

ORDINARY COUNCIL MEETING

to be held

AT THE COUNCIL CHAMBERS, JURIE BAY

on

THURSDAY 25 FEBRUARY 2021

COMMENCING AT 4.00PM

(THIS DOCUMENT IS AVAILABLE IN LARGER PRINT ON REQUEST)



ORDINARY COUNCIL MEETING

THURSDAY 25 FEBRUARY 2021

Welcome to the Ordinary Council Meeting of the Shire of Dandaragan.

Please be advised that the Ordinary Meeting of Council will be held on the following dates, times and venues:

DAY	DATE	TIME	MEETING VENUE
Thurs	25 February 2021	4.00pm	Jurien Bay
Thurs	25 March 2021	4.00pm	Jurien Bay
Thurs	22 April 2021	4.00pm	Badgingarra
Thurs	27 May 2021	4.00pm	Jurien Bay
Thurs	24 June 2021	4.00pm	Jurien Bay

Brent Bailey
CHIEF EXECUTIVE OFFICER



DISCLAIMER

INFORMATION FOR THE PUBLIC ATTENDING A COUNCIL MEETING

Please note:

The recommendations contained in this agenda are Officer's Recommendations only and should not be acted upon until Council has considered the recommendations and resolved accordingly.

The resolutions of Council should be confirmed by perusing the Minutes of the Council Meeting at which these recommendations were considered.

Members of the public should also note that they act at their own risk if they enact any resolution prior to receiving official written notification of Council's Decision.

Brent Bailey
CHIEF EXECUTIVE OFFICER



COUNCIL MEETING INFORMATION NOTES

1. Your Council generally handles all business at Ordinary or Special Council Meetings.
2. From time to time Council may form a Committee, Working Party or Steering group to examine subjects and then report to Council.
3. Generally all meetings are open to the public; however, from time to time Council will be required to deal with personal, legal and other sensitive matters. On those occasions Council will generally close that part of the meeting to the public. Every endeavour will be made to do this as the last item of business of the meeting.
4. Public Question Time. It is a requirement of the Local Government Act 1995 to allow at least fifteen (15) minutes for public question time following the opening and announcements at the beginning of the meeting. Should there be a series of questions the period can be extended at the discretion of the Presiding Member.

Written notice of each question should be given to the Chief Executive Officer fifteen (15) minutes prior to the commencement of the meeting. A summary of each question and response is included in the Minutes.

When a question is not able to be answered at the Council Meeting a written answer will be provided after the necessary research has been carried out. Council staff will endeavour to provide the answers prior to the next meeting of Council.

Council has prepared an appropriate form and Public Question Time Guideline to assist.

5. **Councillors** may from time to time have a financial interest in a matter before Council. Councillors must declare an interest and the extent of the interest in the matter on the Agenda. However, the Councillor can request the meeting to declare the matter **trivial, insignificant** or **in common with a significant number of electors** or **ratepayers**. The Councillor must leave the meeting whilst the matter is discussed and cannot vote unless those present agree as above.

Members of staff, who have delegated authority from Council to act on certain matters, may from time to time have a financial interest in a matter on the Agenda. The member of staff must declare that interest and generally the Presiding Member of the meeting will advise the Officer if he/she is to leave the meeting.

6. Agendas including an Information Bulletin are delivered to Councillors within the requirements of the Local Government Act 1995, i.e. seventy-two (72) hours prior to the advertised commencement of the meeting. Whilst late items are generally not considered there is provision on the Agenda for items of an urgent nature to be considered.

Should an elector wish to have a matter placed on the Agenda the relevant information should be forwarded to the Chief Executive Officer in time to allow the matter to be fully researched by staff. An Agenda item including a recommendation will then be submitted to Council for consideration should it be determined appropriate by the Chief Executive Officer.

The Agenda closes the Monday week prior to the Council Meeting (i.e. ten (10) days prior to the meeting).

The Information Bulletin produced as part of the Agenda includes items of interest and information, which does not require a decision of Council.

7. Agendas for Ordinary Meetings are available in the Shire of Dandaragan Administration Centre and all four libraries as well as on the website www.dandaragan.wa.gov.au seventy-two (72) hours prior to the meeting and the public are invited to secure a copy.
8. Agenda items submitted to Council will include a recommendation for Council consideration. Electors should not interpret and/or act on the recommendations until after they have been considered by Council. Please note the Disclaimer in the Agenda (page 3).
9. Public Inspection of Unconfirmed Minutes (Reg 13)

A copy of the unconfirmed Minutes of Ordinary and Special Meetings will be available for public inspection in the Shire of Dandaragan Libraries and on the website www.dandaragan.wa.gov.au within ten (10) working days after the Meeting.

NOTE:

10.3 Unopposed Business

- (1) Upon a motion being moved and seconded, the person presiding may ask the meeting if any member opposes it.
- (2) If no member signifies opposition to the motion the person presiding may declare the motion in sub clause (1) carried without debate and without taking a vote on it.
- (3) A motion carried under sub clause (2) is to be recorded in the minutes as a unanimous decision of the Council or committee.
- (4) If a member signifies opposition to a motion the motion is to be dealt with according to this Part.

This clause does not apply to any motion or decision to revoke or change a decision which has been made at a Council or committee meeting.

SHIRE OF DANDARAGAN QUESTIONS FROM THE PUBLIC

The Shire of Dandaragan welcomes community participation during public question time as per the Shire of Dandaragan Standing Orders Local Law.

A member of the public who raises a question during question time is requested to:

- (a) provide a copy of his or her questions at least 15 minutes prior to the commencement of the meeting;
- (b) first state his or her name and address;
- (c) direct the question to the President or the Presiding Member;
- (d) ask the question briefly and concisely;
- (e) limit any preamble to matters directly relevant to the question;
- (f) ensure that the question is not accompanied by any expression of opinion, statement of fact or other comment, except where necessary to explain the question;
- (g) each **member of the public** with a question is **entitled to ask up to 3 questions** before other members of the public will be invited to ask their questions;
- (h) when a member of the public gives written notice of a question, the President or Presiding Member may determine that the question is to be responded to as normal business correspondence.

The following is a summary of procedure and a guide to completion of the required form.

1. This is a "question" time only. Orations, explanations or statements of belief will not be accepted or allowed.
2. Questions must relate to a matter affecting the Shire of Dandaragan.
3. Questions must be appropriate and made in good faith. Those containing defamatory remarks, offensive language or question the competency or personal affairs of council members or employees may be ruled inappropriate by the Presiding Member and therefore not considered.
4. Frame your question so that it is both precise and yet fully understood. Long questions covering a multitude of subjects are easily misunderstood and can result in poor replies being given.
5. Write your question down on the attached form, it helps you to express the question clearly and provides staff with an accurate record of exactly what you want to know.
6. When the President or presiding member calls for any questions from the public, stand up and wait until you are acknowledged and invited to speak. Please start by giving your name and address first, then ask the question.
7. Questions to be put to the President or presiding member and answered by the Council. No questions can be put to individual Councillors.
8. The question time will be very early in the meeting. **There is only 15 minutes available for Question Time.** Questions not asked may still be submitted to the meeting and will be responded to by mail.
9. When you have put your question, resume your seat and await the reply. If possible, the President or presiding member will answer directly or invite a staff member with special knowledge to answer in his place. However, it is more likely that the question will have to be researched, in which case the President or presiding member will advise that the question will be received and that an answer will be forwarded in writing. Please note under NO circumstances, will the question be debated or discussed by Council at that meeting.
10. To maximise public participation only three questions per person will initially be considered with a time limit of 2 minutes per person. If there is time after all interested persons have put their questions the President or presiding member will allow further questions, again in limits of two per person.
11. To fill out the form, just enter your name and address in the appropriate areas together with details of any group you are representing, then write out your question.
12. Please ensure your form is submitted to the minute's secretary.

If you have difficulty in or are incapable of writing the question, Shire staff are available on request to assist in this task.

We hope this note assists you in the asking of your question and thank you for your interest and participation in the affairs of our Shire.

SHIRE OF DANDARAGAN

QUESTIONS FROM THE PUBLIC

Any member of the public wishing to participate in Public Question Time during Council or Committee meetings is welcome to do so, however, Council requires your name, address and written questions to be provided to the meeting secretary.

Name: _____ Signature: _____

Address: _____

Contact No: _____ Meeting Date: _____

Council Agenda
Item No: _____

Name of Organisation Representing: _____
(if applicable)

QUESTION:

Each member of the public is entitled to ask up to 3 questions before other members of the public will be invited to ask their question. 15 Minutes is allotted to Public Question Time at Council Meetings.

Please see notes on Public Question Time overleaf...

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1 DECLARATION OF OPENING / ANNOUNCEMENT OF VISITORS**1.1 DECLARATION OF OPENING**

"I would like to acknowledge the traditional owners of the land we are meeting on today, the Yued people of the great Nyungar Nation and we pay our respects to Elders both past, present and emerging."

1.2 DISCLAIMER READING

"No responsibility whatsoever is implied or accepted by the Shire of Dandaragan for any act, omission, statement or intimation occurring during this meeting."

It is strongly advised that persons do not act on what is heard, and should only rely on written confirmation of Council's decision, which will be provided within fourteen days."

2 RECORD OF ATTENDANCE / APOLOGIES / APPROVED LEAVE OF ABSENCE**Members**

Councillor L Holmes (President)
 Councillor J Clarke
 Councillor A Eyre
 Councillor W Gibson
 Councillor R Rybarczyk
 Councillor R Shanhun

Staff

Mr B Bailey (Chief Executive Officer)
 Mr S Clayton (Executive Manager Corporate & Community Services)
 Mr D Chidlow (Executive Manager Development Services)
 Mr B Pepper (Executive Manager Infrastructure)
 Ms R Headland (Council Secretary & Personal Assistant)
 Mr R Mackay (Planning Officer)
 Ms M Perkins (Manager Community & Customer Service)
 Mr T O'Gorman (Manager Economic Development)

Apologies

Councillor P Scharf

Approved Leave of Absence

Councillor D Slyns

3 RESPONSE TO PREVIOUS PUBLIC QUESTIONS TAKEN ON NOTICE**4 PUBLIC QUESTION TIME****5 APPLICATIONS FOR LEAVE OF ABSENCE****6 CONFIRMATION OF MINUTES****6.1 MINUTES OF THE ORDINARY MEETING HELD 28 JANUARY 2021****7 NOTICES AND ANNOUNCEMENTS BY PRESIDING MEMBER WITHOUT DISCUSSION****8 PETITIONS / DEPUTATIONS / PRESENTATIONS / SUBMISSIONS**

Cervantes Historical Society – Business Plan Presentation

9 REPORTS OF COMMITTEES AND OFFICERS

9.1 CORPORATE & COMMUNITY SERVICES

9.1.1 ACCOUNTS FOR PAYMENT – JANUARY 2021

Location:	Shire of Dandaragan
Applicant:	N/A
Folder Path:	Business Classification Scheme / Financial Management / Creditors / Expenditure
Disclosure of Interest:	None
Date:	12 February 2021
Author:	Scott Clayton, Executive Manager Corporate & Community Services
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

To accept the cheque, EFT, BPAY and direct debit listing for the month of January 2021.

BACKGROUND

As part of the Local Government Act 1995, Financial Management Regulations 1996, a list of expenditure payments is required to be presented to Council.

COMMENT

The cheque, electronic funds transfer (EFT), BPAY and direct debit payments for January 2021 totalled \$1,353,138.51 for the Municipal Fund.

Should Councillors wish to raise any issues relating to the January 2021 Accounts for payment, please do not hesitate to contact the Executive Manager Corporate and Community Services prior to the Council Meeting, in order that research can be undertaken and details provided either at the time of the query or at the meeting.

CONSULTATION

- Chief Executive Officer

STATUTORY ENVIRONMENT

- Regulation 13 of the Local Government Financial Management Regulations 1997.

POLICY IMPLICATIONS

There are no policy implications relevant to this item.

FINANCIAL IMPLICATIONS

There are no adverse trends to report at this time.

STRATEGIC IMPLICATIONS

There are no strategic implications relevant to this item.

ATTACHMENTS

Circulated with the agenda are the following items relevant to this report:

- Cheque, EFT and direct debit listings for January 2021 (Doc Id: 170735)

(Marked 9.1.1)

VOTING REQUIREMENT

Simple majority

OFFICER RECOMMENDATION

That the Cheque and EFT listing for the period ending 31 January 2021 totalling \$1,353,138.51 be adopted.

9.1.2 FINANCIAL STATEMENTS - MONTHLY REPORTING FOR THE PERIOD ENDING 31 JANUARY 2021

Location:	Shire of Dandaragan
Applicant:	N/A
Folder	Business Classification Scheme / Financial Management / Financial Reporting / Periodic Reports
Disclosure of Interest:	None
Date:	15 February 2021
Author:	Scott Clayton, Executive Manager Corporate and Community Services
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

To table and adopt the monthly financial statements for the period ending 31 January 2021.

BACKGROUND

As part of the Local Government Act 1995 and Financial Management Regulations (1996), monthly financial statements are required to be presented to Council. Circulated are the monthly financial statements for the period ending 31 January 2021.

COMMENT

Regulation 34 of the Financial Management Regulations (1996) requires the following information to be provided to Council:

1. Net Current Assets

Council's Net Current Assets [i.e. surplus / (deficit)] position as at the 31 January 2021 was \$3,401,580. The composition of this equates to Current Assets minus Current Liabilities less Cash Assets that have restrictions on their use placed on them, in this case Reserves and Restricted Assets. The current position indicates that Council can easily meet its short-term liquidity or solvency.

The Net Current Asset position is reflected on page 12 and reconciled with the Statement of Financial Activity on page 3 of the financial statements.

The amount raised from rates, shown on the Statement of Financial Activity (page 3), reconciles with note 6 (page 13) of the financial statements and provides information to Council on the budget vs actual rates raised.

2. Material Variances

During budget adoption a 10 percent and \$10,000 threshold for these variances to be reported was set.

Note 12 of the attached report details any significant variances. Should Councillors wish to raise any issues relating to the 30 November 2020 financial statements, please do not hesitate to

contact the Executive Manager Corporate and Community Services prior to the Council Meeting in order that research can be undertaken and details provided either at the time of the query or at the meeting.

CONSULTATION

- Chief Executive Officer

STATUTORY ENVIRONMENT

- Regulation 34 of the Local Government Financial Management Regulations (1996)

POLICY IMPLICATIONS

There are no policy implications relevant to this item.

FINANCIAL IMPLICATIONS

There are no adverse trends to report at this time.

STRATEGIC IMPLICATIONS

There are no strategic implications relevant to this item.

ATTACHMENTS

Circulated with the agenda is the following item relevant to this report:

- Financial statements for the period ending 31 January 2021 (Doc Id: 170890)

(Marked 9.1.2)

VOTING REQUIREMENT

Simple majority

OFFICER RECOMMENDATION

That the monthly financial statements for the period 31 January 2021 be adopted.

9.1.3 FUNDING REQUEST - CONSTRUCTION OF THE TURQUOISE WAY TRAIL HILL RIVER BRIDGE

Location:	Jurien Bay
Applicant:	Jurien Bay Chamber of Commerce
Folder Path:	Business Classification Scheme / Roads / Maintenance / Bridges
Disclosure of Interest:	Nil
Date:	15 February 2021
Author:	Tony O'Gorman, Economic Development Manager
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

Council is being asked to consider a funding request from the Jurien Bay Chamber of Commerce to facilitate the construction of the bridge over the Hill River on the Turquoise Way Trail.

BACKGROUND

The Turquoise Way Trail to Hill River was completed in 2016 following a funding arrangement between the State Government and the Jurien Bay Chamber of Commerce (Chamber).

In 2019 the Chamber applied to the Wheatbelt Development Commission, Regional Economic Development Fund (REDS) round for an amount of \$150,000 to construct a bridge over the Hill River based on a business case and estimate of construction costs. They were successful in gaining funding towards the project however there was a shortfall in the grant received after \$100,000 was allocated towards the project.

As part of the funding mix \$100,000 was acquired through the Jurien Bay Community Fund (a community fund established through the Beachridge development process) and Ardross Developments / Mr. H. Hoffman provided an additional commitment of \$100,000. The Chamber is contributing \$6,963 which is made up of surplus funds from the first stage of the Turquoise Way Trail project. The Chamber advise that they have also funded pre-construction works and engineering totalling \$22,810.

The Chamber called for tenders for the project and received three submissions from local businesses. The conforming tender with the best price including a contingency provision leaves the overall project \$44,037 over budget.

The Chamber has requested that Council consider funding 50% of the current shortfall in funding (\$7,018) and allocate a further provision of up to \$15,000 to cover a 50% share of the contingency amount. The Chamber has committed to funding the remaining 50% of project variations. The contribution towards the contingency would only be drawn down if required through approved variations if unforeseen expenditure arises during the construction process.

The final component of the Chamber's request is to provide a cash advance interest free for a period up to twelve months to assist their cash flow associated with the remittance and recoup of GST. As the Chamber only submits an annual BAS return the Chamber's executive are concerned about their ability to remain a going concern while concurrently managing a significant construction project. It is expected that this cash advance would be in place for up to 12 months.

All funds and contributions would be subject to an independent financial audit which is a funding acquittal requirement under the REDS grant.

COMMENT

Council has demonstrated a significant level of support for this project to date in a number of ways. The Turquoise Way Trail to Cervantes project is identified as a marquee project within its Corporate Business Plan. Council have already agreed to fund an amount of \$150,000 to extend the Turquoise Way path to the bridge location. The funds for this have been acquired through the Federal Government's Drought Communities Program and form part of a larger \$1m grant to the Shire. The Shire has also been advocating funding contributions via various Government departments and Ministers for a number of years.

Given the existing level of Council support for the project, if Council choose to approve the Chamber's request, the funds could be drawn from the Infrastructure Construction Reserve.

If the proposed bridge is not constructed within the proposed timeline the \$100,000 grant from the REDS fund may be forfeited which will impact the timely progress of any future stages of the Turquoise Way Trail.

CONSULTATION

Jurien Bay Chamber of Commerce

STATUTORY ENVIRONMENT

Local Government Act 1995

6.8 Expenditure from municipal fund not included in annual budget

- (1) *A local government is not to incur expenditure from its municipal fund for an additional purpose except where the expenditure —*
- (a) *is incurred in a financial year before the adoption of the annual budget by the local government; or*
 - (b) *is authorised in advance by resolution*;* or
 - (c) *is authorised in advance by the mayor or president in an emergency.*

**Absolute majority required.*

POLICY IMPLICATIONS

Nil

FINANCIAL IMPLICATIONS

There will be a nil impact on the overall budgeted surplus/deficit as it is proposed that the contribution/s will be funded via a transfer from the Infrastructure Construction Reserve. The current balance of this reserve is \$62,523.

Funds associated with repayment of the short term loan would be budgeted for repayment in the 2021/2022 financial year.

STRATEGIC IMPLICATIONS

Strategic Community Plan - Envision 2029

01 Infrastructure	The Shire will sustain a dynamic infrastructure network responsive to usage demand that attracts and retains residents and businesses.
Priority Outcomes	Our Roles
Our communities contain vibrant, activated public open space and buildings with high levels of utilisation and functionality	To manage and facilitate community assets that are flexible, vibrant, adaptable and enjoyable places to occupy employing the principals of place making and design thinking.

ATTACHMENTS

Circulated with the agenda is the following item relevant to this report.

- Letter from the Jurien Bay Chamber of Commerce (Doc Id:170856) - Confidential
 - Chamber Hill River Bridge Construction Budget (Doc Id: 171067) - Confidential
- (Marked 9.1.3)**

VOTING REQUIREMENT

Absolute Majority

OFFICER RECOMMENDATION

That Council:

- 1. Approve the funding request from the Jurien Bay Chamber of Commerce in accordance with the following provisions:**
 - a) \$7,018 as an upfront direct contribution to the Hill River Bridge Construction Project;**
 - b) 50% of any contract variations up to \$15,000, subject to review and approval of the CEO; and**
 - c) \$35,100 as a no interest cash advance repayable within twelve months for the purpose of meeting GST liabilities associated with the project;**
- 2. Authorise a transfer of \$57,118 from the Infrastructure Construction Reserve.**

9.2 INFRASTRUCTURE SERVICES

9.3 DEVELOPMENT SERVICES

9.3.1 PROPOSED COALARA CATTLE FEEDLOT

Location:	2530 Coalara Road, Boothendarra
Applicant & landowner:	Central Stockcare
File Ref:	Development Services Apps/ Development Applications/ 2020 / 79
Disclosure of Interest:	Nil
Date:	5 February 2021
Author:	Rory Mackay, Planning Officer
Senior Officer:	David Chidlow, Executive Manager of Development Services

PROPOSAL

For Council to consider a development application for an intensive cattle feedlot upon 'Sendem Downs' farming property (Lot 10331 on Deposited Plan 206634) within the locality of Boothendarra. The application proposes the development of an intensive cattle feeding facility with the capacity to accommodate up to 8,000 head of cattle over a five-year staged development.

BACKGROUND

Central Stockcare (the proponent) is proposing a \$5 million cattle management system which in their own words will be: *designed to take the cropland energy and protein harvested in November and December each year and meter that nutrient out over the other 10 months of the year to cattle. The proposed feedlot system will deliver thriving cattle at optimal age for slaughter that produce repeatable, high eating quality meat all year around.*

The proponent has operated a similar feedlot on the farming property of 'Springfield' in the Shire of Gingin for more than a decade. This site abuts the Brand Highway and therefore has had no impact on local Gingin roads. However, this site has now been sold to mining interests with the feedlot arrangement allowed to continue via a short-term lease arrangement. Hence the proponent is seeking approval for this new feedlot to transition from the Springfield property.

The development is proposed to be constructed in the following three stages depending on market forces:

1. 4,000 head cattle 24 months from approvals
2. 6,000 head cattle 36 months from approvals
3. 8,000 head cattle 60 months from approvals

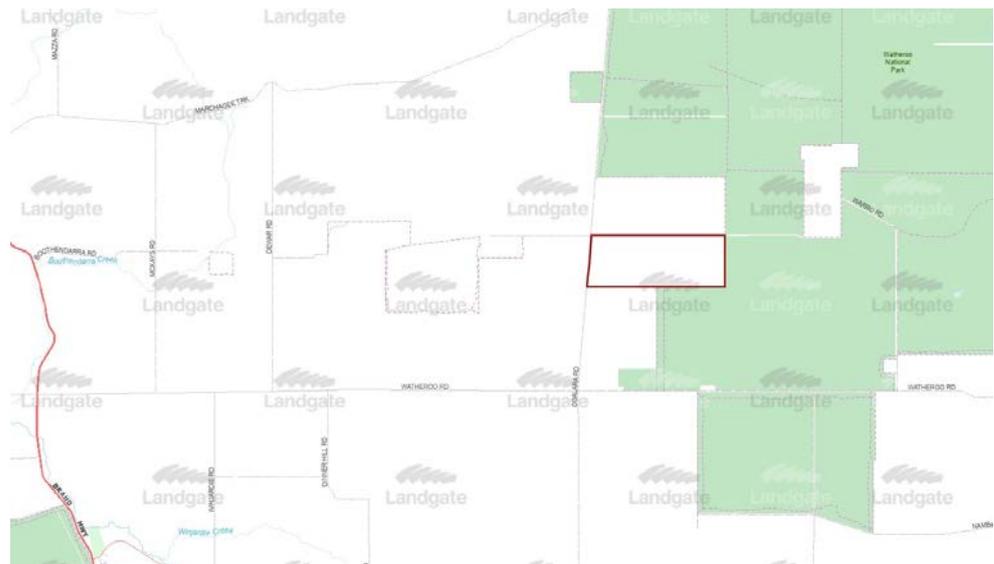
The maximum stocking density resulting from these stages will be 10.8m² per cattle. The majority of feed and cattle infrastructure will

be established during the first stage of development. The subsequent stages will see extensions added relative to the additional number of cattle to be contained on site. The location of these facilities is shown on the site plan that is included in the appendix of the attached environmental assessment report.

Given the development is denoted as a prescribed premise under the *Environmental Protection Act 1986*, a works approval application has concurrently been submitted to the Department of Water and Environmental Regulation (DWER) for consideration. A condensed version of the environmental report was submitted with the development application, however the full report as submitted to DWER is attached for Council's reference.

The subject property has historically been used for extensive livestock grazing and grain production and as result, is largely cleared with no significant remnant vegetation. The Site is also generally flat topography, ranging from 300m AHD to 270m AHD.

The site is dissected by the unconstructed road reserve of Boothendarra Road. The feedlot infrastructure will be sited on the north-eastern section of approximately 1550Ha, while the remaining area and the south section of 1430Ha will remain broadacre farming. The proponent also owns 2615 Coalara Road, Boothendarra situated west of the development property. The feedlot property is surrounded by the Watheroo National Park to the north, east and majority of south. The hybrid map image shown below outlines the location of the proposal (red outline) from Brand Highway.



The property is zoned 'Rural' under the Shire's Local Planning Scheme No.7 (the Scheme). The Scheme objective for the Rural zone is:

To provide for a range of rural activities such as broadacre and diversified farming so as to retain the rural character and amenity of the locality, in such a way as to prevent land degradation and further loss of biodiversity.

A cattle feedlot aligns with the Scheme land use definition of '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.

This land use is listed as discretionary ('D') under the Scheme for the Rural zone. Meaning the development cannot commence without Council showing discretion in their land use development decision making.

COMMENT

Examination of the land capability to withstand potential environmental impacts of the development do not form part of this assessment as this will be undertaken by DWER in their assessment of the environmental works application for the proposed feedlot.

The feedlot is sited to meet the 1km Environmental Protection Authority rural buffer distance from sensitive receptors / neighbouring dwellings. The nearest neighbouring dwelling at 2297 Coalara Road, Boothendarra is located 6km away from the feedlot footprint. Therefore, the development does not present a significant risk to the amenity (noise & odour) of the locality.

The proponent has obtained a ground water licence from the Department of Water and Environmental Regulation to access up to 2250.95 megalitres of water per year for the purposes of: dust suppression; intensive stock watering; and irrigation of pasture.

The development will provide employment for up to 13 full time personnel when fully developed. This includes staff undertaking administrative, livestock handling, feed storage, preparation and delivery, and waste management activities. The existing dwelling on the subject land will be used for accommodating a small number of management staff. However, all other staff shall reside off-site, with no additional staff accommodation to be provided on-site.

Portions of the development site are located within designated Bushfire Prone Areas as determined by the Department of Fire and Emergency Services. However, all of the habitable areas in which people would be working on a regular basis (i.e. the feeding pens, feed mill, cattle handling facilities, weighbridge and office) are located outside the identified Bushfire Prone Areas.

AGENDA FOR ORDINARY COUNCIL MEETING TO BE HELD THURSDAY 25 FEBRUARY 2021

Accordingly, it is not considered necessary to address the requirements under *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*, on the basis that:

- Part 10A of the Deemed Provisions of the Scheme do not apply, as no habitable buildings are proposed within Bushfire Prone Areas; and
- Planning Bulletin 111/2016 clearly contemplates exemptions for infrastructure (including roads and dams) and rural activities within Bushfire Prone Areas, as proposed.

Therefore, an exemption is practical and entirely appropriate in this instance, as the no structures are proposed within the identified Bushfire Prone Areas.

The application is accompanied by a Traffic Impact Assessment (TIA) prepared by Auswide, attachment. This TIA concluded that the development would have a low impact of increased vehicle traffic in the locality. However, the TIA did not consider the capacity or capability of the local road network to handle the amount of traffic generated by the development, especially heavy haulage on the unsealed Coalara Road. As such, Shire staff sought a third-party traffic assessment (including a site inspection) by Porter Engineers (Porter).

The resulting TIA from Porter (also included as an attachment) made the following recommendations to the Shire:

	Summary of Conclusions for Shire Consideration
1	Install Boothendarra Road street name signs on Coalara Road at two intersections
2	Upgrade Boothendarra Road unsealed road pavement formation suitable for the proposed weekly number of B-Double heavy vehicles and other development traffic
3	Do not permit heavy vehicles to use unsealed road pavements when the formation is wet
4	Permit the proposed heavy vehicles to use only Route 1 (i.e. via Watheroo Road) so as to limit the extent of road network impacted and consequent road maintenance costs
5	The proposed development cover the annual cost of additional road maintenance incurred by the Shire as a consequence of the development traffic
6	The proposed development cover costs incurred by the Shire where it reinstates road pavement following damage caused by development traffic that has rendered the road hazardous or impassable to traffic

Staff responses to each recommendation for Council considerations are:

1 & 2 – Make Boothendarra Road Reserve east from Coalara road private gated access for the proponent via an annual gate permit. Road standard and maintenance for this portion of Boothendarra Road would then solely be that of the proponent. No other property owner uses this unconstructed road reserve. The gate access leg is shown in purple highlight below.



3 – This is standard practice for unsealed Shire road in the wetter months of the year. Truck damage to gravel roads in the wet can result in sufficient damage as to make it impassable to cars.

4 – Use of 'Route 1' only for heavy haulage on the roads of Watheroo and Coalara Roads is recommended as a condition of approval. The following table taken from the Porter TIA summarises the difference between Route 1 and 2 and why Route 1 should only be used by heavy haulage to avoid an additional 24.5km of unsealed gravel road maintenance.

Route	Total length	Unsealed Roads Length (3.3km common)	Sealed Roads length	Extra Unsealed Roads Length	Extra Sealed Roads Length	Total Extra Roads Length
Route 1	35 km	10.5 km	24.5 km	-	-	
Route 2	70 km	27.8 km	42.2 km	24.5 km	42.2 km	66.7 km

5 – A recommended condition of approval calls for a road user agreement to be established between the proponent and the Shire. This is to enable the proponent to meet the road maintenance costs relative to the development's heavy haulage. As stated within the Porter TIA the Shire's road crew usually grade unsealed roads three times a year (a winter, summer and touch up grade). It is expected through the development's heavy vehicle traffic numbers that grading of Coalara Road will need to be upped to 7-8 gradings per year at full 8,000 head capacity, especially as this road is school bus route. The Porter TIA concluded that the feedlot development should cover the cost by the Shire for these additional maintenance gradings rather than the general Shire ratepayer. It is noted by the Porter TIA that the development traffic

is 134 units below the Main Roads threshold for the requirement for Coalara Road to be sealed by the developer.

6 - It is recommended a road damages condition be imposed on the proponent to ensure any non-compliance with the closure of Coalara Road in the wetter months to heavy haulage by the proponent does not result in an additional cost to the Shire to reinstate the road formation where it becomes a hazard or impassable to light vehicle traffic. There may be special occurrences where trucks will have to use Coalara road in the wet to unloaded cattle for animal welfare issues, such circumstances will be agreed by the proponent and Shire via the road user agreement to be developed.

The proponent provided a response to each of the above mooted preliminary conditions, of which is attached to this item. The proponent supports each preliminary condition except for the condition regarding recommendation 5 and establishing a Coalara Road user agreement. The proponent has raised concern that an annual ongoing road maintenance fee will generally erode the viability of low margin business. As stated, in poor trading environments feedlots at times close-down and cease business activity. In such a time of financial hardship it would be unreasonable to expect the operator to pay the Shire for road maintenance. As such, the proponent has requested that a variable but capped road maintenance levy linked to the annual truck activity of the feedlot, also linked to an appropriate index be used, if at all. The Shire currently use a similar arrangement to levy road maintenance contributions from extractive industries. This item calls for the road user agreement to be agreed by both parties prior to the use of the feedlot. If this approach is supported by Council, negotiations of the road user agreement would take place between the proponent and Shire staff at a later date.

In summary, the proposed cattle feedlot represents an intensive form of agricultural land use that will contribute to a more diverse land use profile in the Shire's Rural zone, and conversely, retains rural land for primary agriculture production, consistent with the Shire's strategic land use planning direction. Additionally, the development has no potential for conflict with the established amenity of the locality. Therefore, the development application is recommended for approval subject conditions, including conditions regarding the use of Coalara Road by the developer.

CONSULTATION

The subject development application was advertised to the following parties

- Department of Primary Industries & Regional Development;
- Department of Biodiversity, Conservation & Attractions;
- Main Roads WA; and
- Surrounding land owners.

The submissions from the State authorities have been attached to this item for Council's reference. The proponent has provided a response to each of these submissions as shown in the relevant attachment.

Only one neighbour submission was received. This submission objected to the proposal until: odour; flies and stable flies; and traffic on local (gravel) roads were addressed. These factors have been addressed in the comment section above and are to be reinforced by recommended conditions of development approval and/or further supported by the environmental assessment that rests with DWER.

STATUTORY ENVIRONMENT

- Local Planning Scheme No. 7
- Environmental Protection Act 1986

POLICY IMPLICATIONS

- State Planning Policy 2.5: Rural Planning
- State Planning Policy 3.7: Planning in Bushfire Prone Areas
- State Planning Policy 3.6: Infrastructure Contributions

Developer Agreements

Contributions may also be implemented in limited circumstances through Developer Agreements or by a voluntary agreement between a landowner or developer and the relevant local government, pursuant to a request from the landowner or developer. Limited circumstances include large-scale, single ownership projects with a long development timeframe, or in regional areas where a formal Development Contribution Plan is not considered by local government and contributing owners to be necessary to achieve desired infrastructure delivery outcomes.

...infrastructure contributions prepared under this arrangement should be consistent with the principles outlined in this policy and any decision to deviate from these principles, including the provision of facilities of a higher quality or specification than standard, should be a voluntary decision by all parties to the agreement.

Principles underlying infrastructure contributions

Contributions for all infrastructure must be levied in accordance with the following principles:

- a) Need and the nexus: The need for the infrastructure must be clearly demonstrated (need) and the connection between the development and the demand created should be clearly established (nexus).*
- b) Transparency: Both the method for calculating the infrastructure contribution and the manner in which it is applied should be clear, transparent, and simple to understand and administer.*

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- c) *Equity: Infrastructure contributions should be levied equitably from all identified stakeholders within a contribution area.*
- d) *Certainty: The scope, timing, and priority for delivering infrastructure items, and the cost of infrastructure contributions and methods of accounting for escalation, should be clearly identified and agreed.*
- e) *Consistency: The system for infrastructure contributions for apportioning, collecting and spending contributions should be consistent, efficient and transparent.*
- f) *Accountable: That there is accountability in the manner in which infrastructure contributions are determined and expended.*

FINANCIAL IMPLICATIONS

The proponent has paid a total application fee of \$12,311 for the development estimated to cost \$5million. The Porter TIA commissioned by Shire Staff cost \$6,800 (ex GST). Council may choose to use the application monies to offset cost or it could choose to back charge the TIA cost as additional to the proponent.

This ability is provided in Regulation 49 of the *Planning and Development Regulations 2009* which states:

Additional costs and expenses payable by applicants

(b) costs and expenses of any specific assessment, such as an environmental assessment, required in relation to the application.

STRATEGIC IMPLICATIONS

Local Planning Strategy 2020:

Rural Land – Facilitate more intensive and diverse use of rural land for higher value agricultural products which are compatible with land capability attributes and surrounding farming practices, subject to availability of adequate water supply.

Strategic Community Plan – Envision 2029

02 – Propensity	The Shire will experience broad economic and population growth with decreasing economic barriers, diversified agriculture and fisheries output and vibrant visitor economy.
Priority Outcomes	Our Roles
Our Shire has a contemporary land use planning system that responds to, and creates, economic opportunities.	Ensuring that our planning framework is modern and meets the needs of industry, small business and emerging opportunities.
Our region is celebrated as a major contributor to the State's food production with a diverse range of agricultural, fishery and horticultural enterprises.	Advocate for and facilitate the reduction in economic barriers such as access to water, electricity, logistics infrastructure and telecommunications.

ATTACHMENTS.

Circulated with the agenda are the following items relevant to this report:

- Public Environmental Report (Doc Id: 170727)

- Auswide TIA (Doc Id: 170728)
- Porter TIA (Doc Id: 170720)
- DPIRD Submission (Doc Id: 170722)
- DBCA Submission (Doc Id: 170723)
- Main Roads WA Submission (Doc Id: 170724)
- Proponent response letter (Doc Id: 170719)

(Marked 9.3.1)

VOTING REQUIREMENT

Simple majority

OFFICER RECOMMENDATION

That Council:

- A. resolve to back charge to the proponent the cost of Traffic Impact Assessment prepared by Porter Engineers in accordance with Regulation 49 of the *Planning and Development Regulations 2009*; and**
- B. grant development approval for animal husbandry intensive (cattle feedlot) upon Lot 10331 on Deposited Plan 206634 in the locality of Boothendarra subject to the following conditions and advice:**

Conditions:

- 1. The land use and development shall be in accordance with the approved plans and specifications unless otherwise conditioned by this approval.**
- 2. The endorsed plans shall not be modified or altered without the prior written approval of the Shire of Dandaragan.**
- 3. The use when established shall at all times comply with the definition of 'animal husbandry - intensive (cattle feedlot)' contained within the *Shire of Dandaragan Local Planning Scheme No. 7*.**
- 4. This approval is for Stage 1 to 3 of the development with the maximum head of cattle not to exceed 8,000 at any one time.**
- 5. Access and egress to the subject site from Coalara Road shall be from the unconstructed Boothendarra Road Reserve which adjoins the boundary of the subject property via an annual Shire Gate Permit arrangement.**
- 6. Prior to commencement of the use, access and egress to the subject site and any associated road works shall be located and constructed to the satisfaction of the Shire of Dandaragan and include all necessary drainage and signage. Costs applicable to the construction of the access point onto the site and related issues shall be borne by the proponent.**
- 7. At the commencement of the approved use, a report detailing all activities and tonnages of livestock and materials transported to and from the facility is to be**

- submitted to the Shire of Dandaragan each month until cessation of the use.
8. Prior to the commencement of the use, the proponent is to enter in an agreement with the Shire of Dandaragan regarding the utilisation of Coalara Road by the development's heavy haulage to establish contributions by the proponent necessary to achieve the desired infrastructure standard for Coalara Road for the life of the development.
 9. Should the development's heavy haulage use Coalara Road when the road is closed due to the road formation being wet and damages the road to a hazardous state or impassable to light vehicle traffic as determined by the Shire of Dandaragan, the proponent shall cover the costs incurred by the Shire of Dandaragan to reinstate the road pavement to the satisfaction of the Shire of Dandaragan.
 10. The development's heavy haulage shall only use the Shire of Dandaragan's local roads of Watheroo Road and Coalara Road to access and exit the development site to the satisfaction of the Shire of Dandaragan.
 11. The transportation of materials, goods and commodities to and from the development shall be conducted so that dust emissions have minimal impact on the locality.
 12. Prior to the commencement of the use, the applicant shall supply to the satisfaction of the Shire of Dandaragan the following plans:
 - a. construction management plan;
 - b. nutrient and irrigation management plan (including wastewater effluent management);
 - c. solid waste management plan;
 - d. air quality management plan (including dust and odour management);
 - e. fire management plan; and
 - f. environmental monitoring and reporting plan;on the advice of the relevant state government agency.

Advice Notes:

- a) The applicant is to implement and maintain reporting mechanisms for complaints concerning the operation of the development. In the event of a substantiated complaint being received the applicant is required to demonstrate mitigation response(s) to the approval of the Shire of Dandaragan.
- b) Should the Applicant be aggrieved by the decision (in part or whole) there is a right pursuant to the Planning and Development Act 2005 to have the decision reviewed by the State Administrative Tribunal. Such an Application must be lodged within twenty-eight (28) days from the date of the decision.
- c) This approval is not an authority to ignore any constraint to

development on the land which may exist through contract or on title, such as an easement, memorial or restrictive covenant. It is the responsibility of the applicant and landowner and not the Shire of Dandaragan to investigate any such constraints before commencing development. This approval will not necessarily have regard to any such constraint to development, regardless of whether or not it has been drawn to the Shire of Dandaragan's attention.

- d) This is a development approval of the Shire of Dandaragan under its *Local Planning Scheme No.7*. It is not a building permit or an approval to commence or carry out development under any other law. It is the responsibility of the applicant/landowner to obtain any other necessary approvals, consents, permits and licenses required under any other law, and to commence and carry out development in accordance with all relevant laws.
- e) Failure to comply with any of the conditions of this development approval constitutes an offence under the provisions of the *Planning and Development Act 2005* and the *Shire of Dandaragan Local Planning Scheme No.7* and may result in legal action being initiated by the Shire of Dandaragan.
- f) It is advised that the cattle feedlot should at all times comply with the *Biosecurity & Agriculture (Stable Fly) Management Plan 2013* in order to minimise the effects of stable flies on the community.
- g) The design and operation of the cattle feedlot is to be generally in accordance with the *National Guidelines for Beef Cattle Feedlots* and *National Beef Cattle Feedlot Environmental Code of Practice*.

9.4 GOVERNANCE & ADMINISTRATION

9.4.1 CERVANTES INDUSTRIAL LOT LEASE

Location:	11 Gazeley Way Cervantes
Applicant:	Not Applicable
Folder Path:	Business Classification Scheme / Council Properties / Leasing Out /
Disclosure of Interest:	Nil
Date:	15 February 2021
Author:	Brent Bailey, Chief Executive Officer
Senior Officer:	Not Applicable

PROPOSAL

The purpose of this report is for Council to consider advertising for lease 11 Gazeley Way Cervantes.

BACKGROUND

11 Gazeley Way is an industrial zoned property in the South East area of Cervantes. The property is predominantly vacant with the exception of a telecommunications tower on a 109m² portion of the lot which is leased to Optus Mobile Pty Ltd (Optus).



In December 2020 an unsolicited offer to lease the property was received from a business owner within the Shire. This has triggered a review of the Shire's ongoing requirements for the property revealing that the property is surplus to the Shire's current operational needs which has also been identified in the Land Rationalisation Project review process. Currently the site is used by the Infrastructure Department as a lay down area for bulk materials. Storage of these materials would be relocated to the Waste Management Facility should the site be leased out.

It is proposed to assign a local real estate agent to advertise the property, collate and evaluate offers for a lease of the site once a market valuation has been ascertained. The offers would then be

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considered at a subsequent Council meeting and finalised by a Disposal of Property in accordance with Section 3.58(3) of the Local Government Act 1995.

COMMENT

The Optus lease on the property expires on 31 July 2026 and accordingly a disposal of this land is more appropriate via lease rather than outright sale given the relatively short timeframe until the land is unencumbered and may present additional opportunities or value to the Shire. Ideally the ongoing land use will contribute to the Shire's economic development and support new business or an expansion of existing business.

There are a number of options suitable for a disposal of land in this situation summarised as follows:

Disposal Type	Advantages	Disadvantages
Outright sale	Capital from sale realised on settlement. Greater security and long term opportunity for buyer. Limited industrial lots available presents strong marketability.	Complicated by existing leasehold over portion of the property and associated revenue forgone. No future lots currently available for Shire purposes if required in Cervantes.
Lease via Tender	Reduced timeframe for execution. Fixed lease to govern terms and land use. Lease can coincide with Optus Term or longer.	Would require Council to predetermine key conditions such as lease term which may limit offers.
Request for Proposals – Lease by Private Treaty	Fixed lease to govern terms and land use. Increased flexibility for negotiation on key outcomes including term of lease. Greater scrutiny and evaluation of offers. Increased public transparency over proposed land use. Lease can coincide with Optus Term or longer.	Longer timeframe for execution. More complicated for prospective lessees needing to address response criteria. Increased staff resources required.
Utilise local real estate agent – Lease by Private Treaty	Fixed lease to govern terms and land use. Increased flexibility for negotiation on key outcomes	Increased external costs in disposition.

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	<p>including term of lease.</p> <p>Increased public transparency over proposed land use.</p> <p>Simpler for lessees to discuss and submit offers through the agent.</p> <p>Lease can coincide with Optus Term or longer.</p>	
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Given the relative simplicity of the disposal and the current project workload on existing staff, the preferred option of disposal is to utilise a local real estate agent to facilitate and evaluate the offers process. This would include consideration of proposals for the length of term associated with the lease. Shire staff would work with the agent to develop a summarised report for Council consideration after a minimum advertising and response timeframe of 4 weeks.

In accordance with Section 3.58(3) of the Local Government Act 1995, the disposal of property using this method would then require public advertising and for Council to consider any submissions. At the conclusion of this process a finalised lease document can be executed.

CONSULTATION

Nil

STATUTORY ENVIRONMENT

Local Government Act 1995 S3.58 – Disposing of Property
 Local Government (Functions and General) Regulations 1996
 Section 30

3.58. Disposing of property

(1) *In this section —*

dispose *includes to sell, lease, or otherwise dispose of, whether absolutely or not;*

property *includes the whole or any part of the interest of a local government in property, but does not include money.*

(2) *Except as stated in this section, a local government can only dispose of property to —*

(a) *the highest bidder at public auction; or*

(b) *the person who at public tender called by the local government makes what is, in the opinion of the local government, the most acceptable tender, whether or not it is the highest tender.*

- (3) *A local government can dispose of property other than under subsection (2) if, before agreeing to dispose of the property —*
- (a) *it gives local public notice of the proposed disposition —*
 - (i) *describing the property concerned; and*
 - (ii) *giving details of the proposed disposition; and*
 - (iii) *inviting submissions to be made to the local government before a date to be specified in the notice, being a date not less than 2 weeks after the notice is first given;*
 - and*
 - (b) *it considers any submissions made to it before the date specified in the notice and, if its decision is made by the council or a committee, the decision and the reasons for it are recorded in the minutes of the meeting at which the decision was made.*
- (4) *The details of a proposed disposition that are required by subsection (3)(a)(ii) include —*
- (a) *the names of all other parties concerned; and*
 - (b) *the consideration to be received by the local government for the disposition; and*
 - (c) *the market value of the disposition —*
 - (i) *as ascertained by a valuation carried out not more than 6 months before the proposed disposition; or*
 - (ii) *as declared by a resolution of the local government on the basis of a valuation carried out more than 6 months before the proposed disposition that the local government believes to be a true indication of the value at the time of the proposed disposition.*
- (5) *This section does not apply to —*
- (a) *a disposition of an interest in land under the Land Administration Act 1997 section 189 or 190; or*
 - (b) *a disposition of property in the course of carrying on a trading undertaking as defined in section 3.59; or*
 - (c) *anything that the local government provides to a particular person, for a fee or otherwise, in the performance of a function that it has under any written law; or*
 - (d) *any other disposition that is excluded by regulations from the application of this section.*

30. Dispositions of property excluded from Act s. 3.58

- (1) *A disposition that is described in this regulation as an exempt disposition is excluded from the application of section 3.58 of the Act.*
- (2) *A disposition of land is an exempt disposition if —*

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- (a) *the land is disposed of to an owner of adjoining land (in this paragraph called the **transferee**) and —*
- (i) *its market value is less than \$5 000; and*
 - (ii) *the local government does not consider that ownership of the land would be of significant benefit to anyone other than the transferee;*
- or*
- (b) **the land is disposed of to a body, whether incorporated or not —**
- (i) **the objects of which are of a charitable, benevolent, religious, cultural, educational, recreational, sporting or other like nature; and**
 - (ii) **the members of which are not entitled or permitted to receive any pecuniary profit from the body's transactions;**

POLICY IMPLICATIONS

There are no policy implications relevant to this item.

FINANCIAL IMPLICATIONS

There will be market valuation and real estate fees estimated at < \$4,000 associated with the proposed process.

STRATEGIC IMPLICATIONS

Strategic Community Plan – Envision 2029

02 – Prosperity	The Shire will experience broad economic and population growth with decreasing economic barriers, diversified agriculture and fisheries output and vibrant visitor economy
Priority Outcomes	Our Roles
Our Shire has a contemporary land use planning system that responds to, and creates, economic opportunities	Ensuring that our planning framework is modern and meets the needs of industry, small business and emerging opportunities. Identify and activate under-utilised economic and land assets to promote employment and economic activity.

ATTACHMENTS

Nil

VOTING REQUIREMENT

Simple Majority

OFFICER RECOMMENDATION

That Council:

- 1. Endorse the proposal to offer for lease in accordance with Section 3.58(3) of the Local Government Act 1995, 11 Gazeley Way Cervantes.**

- 2. Endorse a minimum 4 weeks public advertising and response timeframe for the lease opportunity.**
- 3. Authorise the Chief Executive Officer to appoint a local real estate agent to advertise the lease, collate and evaluate offers for the property.**

9.4.2 TENDER – PAVILION – JURIEN BAY FORESHORE RESERVE 28541

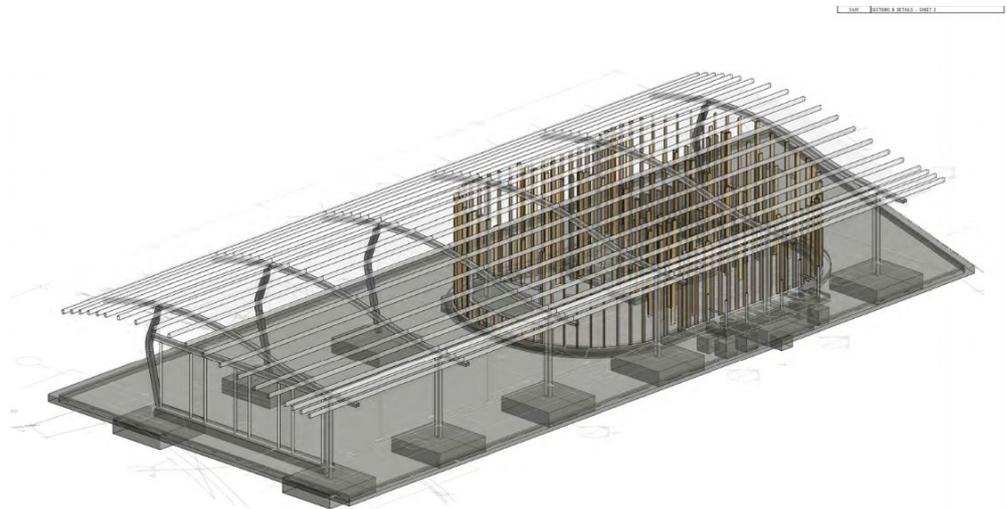
Location:	Reserve 28541 Jurien Bay Foreshore
Applicant:	N/A
Folder Path:	Tenders / 2021 / RFT 001-21
Disclosure of Interest:	None
Date:	5 February 2021
Author:	David Chidlow, Executive Manager Development Services
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

This item addresses the recent tender which was called for the construction of the Jurien Bay Foreshore Pavilion. It is recommended that Council reject all tenders and proceed with direct negotiations with businesses for the construction of the facility.

BACKGROUND

Council endorsed the design of a pavilion/café/ablutions facility on the Jurien Bay Foreshore to proceed to tender at the October 2020 Council meeting. The architect's design is shown below and was developed in consultation with the Foreshore Working Group with the allocated construction budget guiding the size and scale of the development.



Following the finalisation of the detailed design process in January 2021, which included electrical design components coordinated with other projects being completed on the foreshore, tenders were invited for the construction activities.

Tenders closed on the 16 February at 4:00pm with five electronic tenders received.

COMMENT

All tenders received were significantly above the budgeted amount of \$650,000 construction cost. The prices ranged from \$969,233 up to \$1,493,251 (excl GST). The following table sets out the prices received;

Price	
1	\$969,233.00
2	\$996,787.51
3	\$1,015,498.88
4	\$1,185,543.29
5	\$1,493,251.00

A detailed assessment of the submissions is provided as a confidential attachment to this item. In summary, the significant divergence between the tendered amounts and the proposed budget warrants the rejection of tenders to allow negotiations to commence on price and potentially scope of the project. There has also been a significant shift in pricing and demand within the Western Australian building industry which has anecdotally influenced the capacity and lead times of many local trades.

Following these negotiations it is proposed that a further item be brought back to Council to progress the project to construction.

CONSULTATION

The tender was advertised in State and regional Newspapers, social media and the Shire website, as well as directly to ten builders operating in this region.

STATUTORY ENVIRONMENT

Local Government Act 1995 s3.57 – Tenders for providing goods or services

3.57. Tenders for providing goods or services

- (1) *A local government is required to invite tenders before it enters into a contract of a prescribed kind under which another person is to supply goods or services.*
- (2) *Regulations may make provision about tenders.*

Local Government Regulations 1996 s11(1)

11. When tenders have to be publicly invited

- (1) *Tenders are to be publicly invited according to the requirements of this Division before a local government enters into a contract for another person to supply goods or services if the consideration under the contract is, or is expected to be, more, or worth more, than \$250 000 unless subregulation (2) states otherwise.*

Local Government Act 1995 s5.23(2)(e)(iii)

(2) *If a meeting is being held by a council or by a committee referred to in subsection (1)(b), the council or committee may close to members of the public the meeting, or part of the meeting, if the meeting or the part of the meeting deals with any of the following — (e) a matter that if disclosed, would reveal — (iii) information about the business, professional, commercial or financial affairs of a person,*

Local Government Regulations 1996 s18(5)

18. Rejecting and accepting tenders

(5) *The local government may decline to accept any tender.*

POLICY IMPLICATIONS

Policy 1.1 C-1PAT01 – Purchasing and Tender

\$250,000+ Public tender process to be undertaken unless excluded under Exemptions listed below. Prior to any documentation being issued a Request for Tender (RFT) number must be obtained from the Executive Manager of Corporate and Community Services, as applicable provided to maintain the Shire's Tender Register.

FINANCIAL IMPLICATIONS

The pre-tender construction estimate for this project as advised by the architect was \$650,000 which excludes additional design and procurement, project management and land costs. The total budgeted sum for this project is \$750,000.

Since the budget was set there has been change in the building industry and demand for labour and tradespersons. This is due to federal and state funding towards new home builders putting builders at or above capacity.

STRATEGIC IMPLICATIONS

Strategic Community Plan – Envision 2029

01 Infrastructure	The Shire will sustain a dynamic infrastructure network responsive to usage demand that attracts and retains residents and businesses.
Priority Outcomes	Our Roles
Our communities contain vibrant, activated public open space and buildings with high levels of utilisation and functionality.	To manage and facilitate community assets that are flexible, vibrant, adaptable and enjoyable places to occupy employing the principals of place making and design thinking.

ATTACHMENTS

Circulated with the agenda is the following item relevant to this report:

- Confidential 01/2021 Tender Evaluation (Doc Id: 171131)
(Marked 9.4.2)

VOTING REQUIREMENT

Simple Majority

OFFICER RECOMMENDATION

That Council:

- 1. rejects all tenders for Tender 01/2021 – Jurien Bay Foreshore Pavilion**
- 2. authorises the Chief Executive Officer to enter negotiations with suitably qualified and experienced builders and report back to Council.**

9.5 COUNCILLOR INFORMATION BULLETIN**9.5.1 SHIRE OF DANDARAGAN – JANUARY 2021 COUNCIL STATUS REPORT**

Document ID: 170908

Attached to the agenda is a copy of the Shire's status report from the Council Meeting held 28 January 2021. **(Marked 9.5.1)**

9.5.2 SHIRE OF DANDARAGAN – BUILDING STATISTICS – JANUARY 2021

Document ID: 170862

Attached to the agenda is a copy of the Shire of Dandaragan Building Statistics for January 2021. **(Marked 9.5.2)**

9.5.3 SHIRE OF DANDARAGAN – PLANNING STATISTICS – JANUARY 2021

Document ID: 170859

Attached to the agenda is a copy of the Shire of Dandaragan Planning Statistics for January 2021. **(Marked 9.5.3)**

9.5.4 SHIRE OF DANDARAGAN TOURISM / LIBRARY REPORT FOR JANUARY 2021

Document ID: 170785

Attached to the agenda is monthly report for Tourism / Library for January 2021 **(Marked 9.5.4)**

9.5.5 CERVANTES CWA APPRECIATION

Document ID: 171100

Attached to the agenda is correspondence from the Cervantes CWA in relation to lighting at the Cervantes Community Recreation Centre **(Marked 9.5.5)**

10 NEW BUSINESS OF AN URGENT NATURE – INTRODUCED BY RESOLUTION OF THE MEETING**11 CONFIDENTIAL ITEMS FOR WHICH MEETING IS CLOSED TO THE PUBLIC****12 ELECTED MEMBERS MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN****13 CLOSURE OF MEETING**



ATTACHMENTS

FOR ORDINARY COUNCIL MEETING 25 FEBRUARY 2021

SHIRE OF DANDARAGAN

ACCOUNTS FOR PAYMENT

FOR THE PERIOD ENDING

31 JANUARY 2021

SUMMARY OF SCHEDULE OF ACCOUNTS JANUARY 21

<u>FUND</u>					<u>AMOUNT</u>	
<u>MUNICIPAL FUND</u>						
CHEQUES			-		\$0.00	
EFT'S	EFT	489	-	EFT	497	\$1,277,750.88
DIRECT DEBITS	GJBDEB	4312		GJBDEB	4337	\$50,178.66
BPAY	BPAY	080121	-	BPAY	290121A	\$25,208.97
TOTAL MUNICIPAL FUND					<u>\$1,353,138.51</u>	
<u>TRUST FUND</u>						
CHEQUES			-		\$0.00	
EFT'S	EFT		-	EFT		\$0.00
TRANSFER	Trust		-	Muni		\$0.00
					<u>\$0.00</u>	

This schedule of accounts to be passed for payment, covering vouchers as detailed above, which was submitted to each member of Council has been checked and is fully supported by vouchers and invoices which are submitted herewith and which have been duly certified as to the receipt of goods and the rendition of services and as to prices, computations, and costings and the amounts shown the amounts show are due for payment.

Posting Date	Document Type	Document No.	Description	Amount
4/01/2021		GJBDEB-4314	BWA - Paper Trans Fee - Dec 20	\$21.60
4/01/2021		GJBDEB-4315	BWA - BPay Mtncce Fee - Dec 20	\$15.00
4/01/2021		GJBDEB-4316	BWA - Over the Counter Fee - Dec 20	\$38.00
4/01/2021		GJBDEB-4317	BWA - BPay Trans Fee - Dec 20	\$214.40
4/01/2021		GJBDEB-4318	BWA - Mtncce Fee ex 117-006592-7	\$20.00
4/01/2021		GJBDEB-4319	BWA - OBB Record Fee - Dec 20	\$14.20
4/01/2021		GJBDEB-4320	ANZ - Merchant Fee - Dec 20	\$61.77
4/01/2021		GJBDEB-4322	BWA - Merchant Fee Dec 20 - TCVC	\$64.28
7/01/2021		GJBDEB-4312	Salary Packaging	\$3,040.74
7/01/2021		GJBDEB-4313	SuperChoice - December 20	\$19,759.92
15/01/2021		GJBDEB-4323	BWA - Merchant Fees - Dec 20 - JB Admin	\$238.64
15/01/2021		GJBDEB-4326	SecurePay - Trans Fee Dec 20 - JB Admin	\$5.94
15/01/2021		GJBDEB-4327	WEX Fuel Usage - Dec 20	\$499.78
20/01/2021		GJBDEB-4328	M/C - Councillor Xmas Dinner	\$531.30
20/01/2021		GJBDEB-4328	M/C - Fuel PLV257	\$74.06
20/01/2021		GJBDEB-4329	M/C - Fuel PLV257	\$119.48
20/01/2021		GJBDEB-4330	M/C - Phone Cover	\$20.00
20/01/2021		GJBDEB-4331	M/C - iAuditor subscription	\$118.80
20/01/2021		GJBDEB-4332	M/C - National Police Cert. Application	\$55.80
20/01/2021		GJBDEB-4333	M/C - Build. Surveyor Reg. renewal	\$649.00
21/01/2021		GJBDEB-4324	Salary Packaging	\$2,538.60
21/01/2021		GJBDEB-4325	SuperChoice - December 20	\$19,472.03
25/01/2021		GJBDEB-4334	AusPost - Commission Dec 20 - TCVC	\$149.24
25/01/2021		GJBDEB-4335	AusPost - Commission Dec 20 - JB Admin	\$100.67
25/01/2021		GJBDEB-4336	Govt. G'Tee Fees - SSL's @ 31/12/20	\$1,098.10
27/01/2021		GJBDEB-4337	Easifleet - ERV Lease pmt 46 of 48	\$1,257.31
				\$50,178.66

No Cheques for the period 01/01/21 to 31/01/21

Date	BPAY Number	Vendor	Invoice Number	Description	Amount
8/01/2021	BPAY080121	V80818 - Telstra Corporation			
			3009311972/DEC20	CESC Usage 20/12 to 19/01/21	\$233.04
			7863675800/DEC20	JB Office shared data Dec 20	\$13,493.13
			2175531868/JAN21	Fuel Systems to 01/01/21	\$29.98
			2503689339/JAN21	Library usage to 01/01/21	\$194.90
			2175531686/JAN21	Mobile Usage to 01/1/21	\$3,051.27
				Total V80818	\$17,002.32
				Total BPAY080121	\$17,002.32
15/01/2021	BPAY150121	V81671 - Water Corporation			
			9007258734/JAN21	3 Quin Pl 4/11/20-06/01/21	\$159.66
			9016739556/JAN21	31C Dandy rd S/Charge 1/1-28/2/21	\$42.73
			9007258232/JAN21	13 Dandy Rd 4/11/20-6/1/21	\$61.00
			9007258523/DEC20	7B Dandy rd 5/11/20-6/1/21	\$329.50
			9007258566/JAN21	31B Dandy rd S/Charge 1/1-28/2/21	\$42.73
			9007258558/JAN21	31A Dandy Rd S/Charge 1/1-28/2/21	\$42.73
			9007258531/JAN21	7A Dandy rd 4/11/20-6/1/21	\$82.92
			9007258443/JAN21	2 Dandy rd 4/11/20-6/1/21	\$50.04
			9007248739/JAN21	BCC 2/11-4/1/21	\$1,525.33
			9008594764/JAN21	Badgingarra standpipe 2/11-4/1/21	\$1,229.54
				Total V81671	\$3,566.18
				Total BPAY150121	\$3,566.18
22/01/2021	BPAY220121	V81671 - Water Corporation			
			9007258494/JAN21	Dandy Depot 4/11/20-6/1/21	\$220.95
			9007258646/JAN21	Dandy Corn Centre 04/11/20-6/1/21	\$372.68
			9007258355/JAN21	Clark st Standpipe 04/11/20 to 6/1/21	\$430.92
				Total V81671	\$1,024.55
				Total BPAY220121	\$1,024.55
22/01/2021	BPAY220121A	V82552 - Western Power			
			CORPB0529489	Design works for Roberts st underground power	\$3,300.00
				Total V82552	\$3,300.00
				Total BPAY220121A	\$3,300.00
29/01/2021	BPAY290121	V84421 - Optus Billing Services Pty Ltd			
			61939377/JAN21	Sat Phone plan 05/012/20-04/01/21	\$30.00
				Total V84421	\$30.00
				Total BPAY290121	\$30.00
29/01/2021	BPAY290121A	V80818 - Telstra Corporation			
			3009311972/JAN21	CESC 20/1 to 19/02/21	\$285.92
				Total V80818	\$285.92
				Total BPAY290121A	\$285.92
				Grand Total - Other	\$25,208.97

Date	EFT Number	Vendor	Invoice Number	Description	Amount
7/01/2021	489	Payroll	Payroll 07/01/21	Payroll 07/01/21	\$104,639.05
Total EFT 489					\$104,639.05
8/01/2021	490/1036				
		V80003 - Redgum Reports Inc			
			20200358	Shire Matters - Ed 22	\$979.00
				Total V80003	\$979.00
		V80021 - BOC Gases			
			5005234432	Cylinder Hire Usage Dec 20	\$90.62
				Total V80021	\$90.62
		V80087 - Synergy			
			089860550/DEC20	Badgy fire station 21/10 to 18/12/20	\$155.34
			438517550/DEC20	Pioneer park toilets 22/10-18/12/20	\$373.97
			825693390/DEC20	Creek pump 24/10-21/12/20	\$108.83
			295333350/DEC20	Zendora rd standpipe 22/10-17/12/20	\$157.97
				Total V80087	\$796.11
		V80150 - RDI Transport			
			43049	Freight - Hino Prime Mover	\$1,100.00
				Total V80150	\$1,100.00
		V80163 - Badgingarra Community Assn			
			2020-153	2021 Community grant - Aust day	\$750.00
				Total V80163	\$750.00
		V80228 - Arrow Bronze			
			703456	Cemetery Plaques	\$888.14
				Total V80228	\$888.14
		V80240 - RBC Rural			
			28694	Meter Plan Charge Dec 20	\$2,078.65
				Total V80240	\$2,078.65
		V80279 - Jurien Sport and Recreation Centre			
			OPERATOR RETURN 29/12/20	BookEasy Bookings 29/12/20	\$353.00
			OPERATOR RETURN 04/01/21	BookEasy Booking 9076433	\$3,073.00
				Total V80279	\$3,426.00
		V80289 - Jurien Pharmacy			
			12882/JAN21	Fitness for work test kits	\$799.80
				Total V80289	\$799.80
		V80405 - Coastal Trimming			
			6800	Manufacture windsocks	\$835.12
				Total V80405	\$835.12
		V80910 - Mcleods Barristers And Solicitors			
			117055	Legal Expense - Litter Act Prosecution	\$406.99
				Total V80910	\$406.99
		V81002 - Landgate			
			361480	Gross rental valuations	\$225.86
			1065821	Documents	\$26.70
				Total V81002	\$252.56
		V81114 - Boral Construction materials Group Ltd			
			AWWPS00337-001	Supply & Spray bitumen spray	\$207,368.37
				Total V81114	\$207,368.37
		V81352 - Jurien Signs			
			5029	Street Blade & Hoop Signage	\$234.50
			5035	Skate park signage	\$1,555.00
			5036	Caution slip hazard sign	\$55.00
			5037	Corflute insert signs	\$100.00
			5052	Rural road number	\$27.20
				Total V81352	\$1,971.70
		V81374 - Building and Construction Industry Training Fund			
			86164-H7N1Q3	BCITF - 070121090413	\$251.75
			86161-H1V4B0	BCITF - 070121090049	\$1,334.12
			86158-P4M3J6	BCITF - 070121085752	\$578.38
			86156-V2N2S7	BCITF - 070121085148	\$434.44
			86154-G1Z1L3	BCITF - 070121084635	\$83.75
				Total V81374	\$2,682.44
		V81382 - Cervantes Hardware and Marine			
			163306	Kwikset premix concrete	\$18.70
			163532	24 hr timer	\$12.10
			163539	Fuchs Titan oil	\$59.40
			163621	PVC Fittings, plumbers tape, timer	\$104.61
				Total V81382	\$194.81
		V81506 - Afagri Equipment Australia Pty Ltd			
			1988101	Oil Filters & filler cap	\$312.13
			1994429	Bucket repairs - PCL009	\$3,651.90
			1994430	Service & repair - PCL008	\$1,609.71
				Total V81506	\$5,573.74
		V81688 - Swan Aussie Sheds			
			9037	Supply flashings	\$150.00
				Total V81688	\$150.00
		V81740 - Engineering Technology Consultants			
			10140	Electrical Consultancy - Beach Pavilion	\$3,894.00
				Total V81740	\$3,894.00
		V81860 - Shadbolt Electrical			
			4501247	Electrical work - Jurien Bay Airport	\$6,255.67
				Total V81860	\$6,255.67
		V81973 - Fuel Distributors of WA Pty Ltd			
			481002871	Diesel - Dandy depot	\$17,610.46
			408114	Diesel - Jurien Depot	\$5,259.83
				Total V81973	\$22,870.29
		V82028 - Avon Waste			
			41915	Fortnightly Rubbish Removal	\$14,632.02
			41979	Fortnightly Rubbish Removal	\$14,962.52
				Total V82028	\$29,594.54
		V82057 - Ray White Jurien Bay			
				Staff Housing 13/01 - 26/01/20	\$670.00
				Total V82057	\$670.00
		V82138 - Avon Midland Country Zone Of WA			
			339	2020/21 Membership	\$2,200.00
				Total V82138	\$2,200.00
		V82274 - Vari-Skilled			
			15857	Shire Mowing Dec 20	\$14,422.39
				Total V82274	\$14,422.39

V82282 - Isweep Town & Country	2559	Sweeping of roads	\$10,543.50
		Total V82282	\$10,543.50
V82672 - Jurien Bay Tourist Park	OPERATOR RETURN 29/12/20	BookEasy Booking 8986030	\$1,076.25
	OPERATOR RETURN 04/01/21	BookEasy Booking 8207850	\$1,050.00
		Total V82672	\$2,126.25
V82823 - The Last Drop Plumbing Co	4137	Clear blocked drains - Catalonia st	\$561.00
		Total V82823	\$561.00
V82993 - Jurien Bay Mitre 10	540413	Valve box, globes, ConctEnd	\$25.90
	540407	ConctEnd, poly bush, valve ball, reducer bush	\$30.10
	540447	Flat washers, anchor sleeves, screwdrivers	\$41.80
	540563	Cable ties	\$33.50
	540193	Jumbo toilet rolls	\$110.00
	540942	Sikallex sealant	\$27.75
	540943	Poly pipe blueiline & joiner	\$205.30
	540831	Rope 6mm	\$375.00
	540460	Jumbo toilet rolls	\$165.00
	540219	Chainsaw files	\$29.00
	540296	Spray Marker Dye Red	\$39.00
	540335	Screwdriver set	\$31.25
	540186	Acetone, silicone remover, rags, wheel co met inox	\$70.35
	540226	CLR Cleaner	\$19.95
	540231	Hydro Acid, nylon elbows	\$36.15
	540961	S/Steel coach screws	\$3.50
	540972	Coach screws	\$3.95
	541042	Energizer batteries, bond Crete pail	\$66.45
	541229	Pressure pipe, PVC fittings	\$91.55
	541230	Pressure pipe	\$65.00
	541618	Female adaptor, poly bush, adaptor	\$25.80
	541739	Rectangle valve box	\$41.00
	542083	Post Crete, hose, angle brackets	\$96.65
	541922	hydraulic Door closer	\$130.00
	541878	Jumbo toilet rolls	\$110.00
	542584	Order 69224	\$14.50
	542581	Butane, traps, felt pads	\$54.10
	542181	Stihl synthplus bar and cutter oil	\$39.50
	543447	Onga Pump	\$640.00
	543810	Brass padlock	\$22.50
	541737	Screws, Batteries, wood polish	\$40.25
	541460	Jumbo toilet rolls	\$110.00
	542756	Large straw hat	\$13.50
	542905	Jumbo toilet rolls	\$110.00
	543173	Jumbo toilet rolls	\$110.00
	543674	Jumbo toilet rolls	\$110.00
		Total V82993	\$3,138.30
V83121 - Dandaragan Community Resource Centre Inc	68617	Dandaragan Cleaning & Maintenance Contract Dec 21	\$1,320.92
		Total V83121	\$1,320.92
V83145 - Avdata Australia	150029051/106	Jurien Airport flight data Dec 20	\$438.00
		Total V83145	\$438.00
V83188 - Leslee Holmes (Cr)	TRAVEL ALL OCT-DEC 20	Members Travel Oct to Dec 20	\$697.47
		Total V83188	\$697.47
V83278 - The Workwear Group Pty Ltd	12778310	Staff Uniforms	\$79.99
		Total V83278	\$79.99
V83310 - AMPAC Debt Recovery (WA) Pty Ltd	71762	Legal Expenses 17/12-31/12/20	\$745.80
		Total V83310	\$745.80
V83420 - Porter Consulting Engineers	20746	Jurien Bay airport detailed design	\$2,997.50
	20779	Jurien Bay foreshore Electrical consultant Co-ordination	\$825.00
	21001	Jurien Bay foreshore Electrical consultant Co-ordination	\$9,341.20
		Total V83420	\$13,163.70
V83427 - Bridged Group Pty Ltd	25385	Datto Backupify for office 365 - Jan 21	\$198.00
		Total V83427	\$198.00
V83507 - Council First	SI006140	Sinefa Usage Jan 21	\$257.40
	SI006150	STP Transactions Dec 20	\$24.64
		Total V83507	\$282.04
V83694 - Elite Electrical Contracting Pty Ltd	82608	Connect submersible bore with new cable & plug	\$220.00
		Total V83694	\$220.00
V83736 - Waterlogic Australia Pty Ltd	10656512	Water Filter & Ice Machine Lease January 21	\$877.80
	10656512A	Water Filter & Ice Machine Lease January 21	\$678.70
		Total V83736	\$1,556.50
V83780 - Pinnacles Traffic Management Services	97	Traffic management JER	\$3,432.00
		Total V83780	\$3,432.00
V83888 - Aztec Signs & Murals	J112074	Directional Pillar Signs - Bashford st	\$59,400.00
	J12075	Precinct Pedestrian Signs	\$19,690.00
		Total V83888	\$79,090.00
V83914 - Turquoise Safaris	BOOEASY BOOKING 8557195	BookEasy Booking	\$1,602.50
	OPERATOR RETURN 04/01/21	BookEasy Booking	\$195.50
		Total V83914	\$1,798.00
V84004 - Department of Water and Environmental Regulation	TF016477	Controlled Waste tracking 16/12-23/12/20	\$484.00
	DL003768	Controlled Waste Licence	\$60.00
		Total V84004	\$544.00

V84155 - Jurien Hardware - Thrifty Link

20-00036347	Cleaning materials	\$71.48
20-00036564	Garden bags	\$8.56
20-00036345	Easysee spay marker dye	\$21.85
20-00036441	Bolts & washers	\$19.95
20-00036569	Various reticulation parts	\$91.30
20-00036676	Spark plugs	\$30.40
20-00036675	Starter rope	\$1.42
20-00036425	Key wall safe	\$24.22
20-00036683	Protective clothing	\$415.20
20-00036684	Protective clothing	\$190.00
20-00037236	Rapid set cement	\$484.80
20-00037294	HR auto yard watering kit	\$141.55
20-00036593	Poly tees, bushes & nipples	\$9.98
20-00036908	Large foam kneeling pad	\$9.02
20-00037026	9kg gas refills	\$66.50
20-00037141	Nuts & bolts	\$2.66
20-00037161	Pruner & saw set	\$38.00
20-00037266	Eversure extension lead	\$9.50
20-00037293	Reticulation fittings	\$58.75
20-00037259	Black cable ties	\$11.88
20-00037361	Solvent Cement	\$11.40
20-00037477	Paint brush	\$5.89
20-00037613	Padlock brass	\$14.25
20-00037979	Poly fittings, teflon tape	\$99.99
20-00038088	Bow shackle, pink brick line	\$13.30
20-00038155	Various retic parts	\$176.71
20-00038179	Various retic parts	\$32.88
20-00038312	Blank house keys	\$9.50
20-00038258	Various retic parts	\$75.52
20-00038730	Rivet gun	\$31.30
20-00038982	Cable ties	\$9.02
20-00039160	P8 nylon hose	\$23.75
20-00039791	Cable joiner	\$45.98
20-00037028	9 kg gas refill	\$66.50
20-00039567	9kg gas refills	\$66.50
	Total V84155	\$2,389.51

V84221 - Holiday Guide Pty Ltd

2524	Marketing fee	\$235.46
	Total V84221	\$235.46

V84246 - Blue Sky Apartment

OPERATOR RETURN 29/12/20	BookEasy Booking 9029557	\$392.87
	Total V84246	\$392.87

V84273 - Building And Energy

DANDARAGAN BSL DEC 2020	BSL Remittance for Dec 20	\$5,411.04
	Total V84273	\$5,411.04

V84371 - Nessa Hall - Nessay Cleaning Management Services

7164	Cervantes cleaning contract Dec 20	\$3,474.63
	Total V84371	\$3,474.63

V84422 - Jurien Tyre & Auto

51709	Fit & balance new tyres - PLV258	\$786.00
51885	Service air conditioner - PLV233	\$247.00
	Total V84422	\$1,033.00

V84434 - Convic Pty Ltd

1093	Progress claim 5 - Jurien Bay Skate Park	\$132,501.60
	Total V84434	\$132,501.60

V84445 - DIRTT Window Cleaning & Maintenance Services

181	Clean windows	\$770.00
	Total V84445	\$770.00

V84454 - Common Ground Trails Pty Ltd

18363	Progress claim 3 - pump track design	\$2,475.00
	Total V84454	\$2,475.00

V84458 - Professionals Jurien Bay

	Staff Housing 13/01 - 26/01/20	\$760.00
	Total V84458	\$760.00

V84475 - Brown Geotechnical

20135.1	Provide Geotechnical report	\$3,520.00
	Total V84475	\$3,520.00

V84476 - Leigh Pinker

BOND REIMBURSEMENT	Cat/Fox trap bond reimbursement	\$100.00
	Total V84476	\$100.00

V84477 - DL & J Hooton

REFUND RATES CREDIT	Refund rates credit	\$3,037.67
	Total V84477	\$3,037.67

V84478 - Vestone Capital

114305	Councillor Lap Tops Lease 4/1-31/03/20	\$2,700.20
	Total V84478	\$2,700.20
	Total EFT01036	\$588,987.39

15/01/2021

491/1037

V80033 - Derricks Auto-Ag & Hardware Plus

10229899	Tee Adaptor, Poly fittings, sprinklers	\$286.40
	Total V80033	\$286.40

V80087 - Synergy

415004990/DEC20	Dandy depot 22/10-18/12/20	\$727.73
113698450/DEC20	Canover standpipe 22/10-18/12/20	\$134.56
429026190/DEC20	Jurien depot 20/11-17/12/20	\$1,554.26
182506710/DEC20	Jurien Bay Vista Fire Hydrant 22/10-18/12/20	\$107.00
164741840	Ocean View Pde Fire Hydrant 22/10-18/12/20	\$108.43
208476200/DEC20	2 Way towers 8/10-2/12/20	\$139.18
610385240/DEC20	Cambewarra Dv Standpipe 22/10-17/12/20	\$132.70
919109010/DEC20	Powerwatch security lighting 1/12-31/12/20	\$412.52
411619200/DEC	New admin centre 20/11-16/12/20	\$3,903.15
153530590/DEC20	Badgingarra oval 21/10-18/12/20	\$2,208.72
721287150/JAN21	Street Lights 25/11-24/12/20	\$15,379.18
317260610/JAN21	JCC 28/11-29/12/20	\$925.76
298673950/DEC20	Badgy Oval lights 21/10-18/12/20	\$111.51
538463750/JAN21	Dobbyn park nth 7/11/20-8/1/21	\$253.72
246525150/JAN21	Retic Eric Collinson Pk 6/11/20-7/1/21	\$693.22
261265300/JAN21	New Fauntleroy Park 07/11/20-7/01/21	\$852.70
906148990/JAN21	Pioneer park 7/11/20-7/1/21	\$242.40
713393800/JAN21	Pioneer park nth 7/11/20-8/1/21	\$266.93

	124478710/JAN21	Passamani Park 6/1120-8/1/21	\$295.76
	114850720/JAN21	Lot 306 Pinetree cct	\$346.65
	589405930/JAN21	Dobbyn park south 7/11/20-8/1/21	\$415.62
	553162190/JAN21	Jurien Hall GWN 5/11/20-6/1/21	\$193.72
	317207730/JAN21	Jurien Airstrip 5/11/20-6/1/21	\$500.60
	017389700/JAN21	Family Resource Centre 05/11/20-6/1/21	\$1,354.33
	513665230/JAN21	Dam Pump 10/12/20-12/1/21	\$1,400.56
	732141310/JAN21	Jurien F/S Amenities 7/11/20-8/1/21	\$400.41
	976944290/JAN21	Weld park retic pump	\$549.89
		Total V80087	\$33,611.21
V80150 - RDI Transport			
	43049A	Freight - Jurien Depot	\$165.00
	43218	Freight - roll artificial turf	\$82.50
		Total V80150	\$247.50
V80163 - Badgingarra Community Assn			
	2020-154	General Maintenance Contract December 20	\$3,400.10
		Total V80163	\$3,400.10
V80279 - Jurien Sport and Recreation Centre			
	OPERATOR RETURN 110121	BookEasy Booking 9077878	\$1,226.00
		Total V80279	\$1,226.00
V81031 - AN & A Whybrow			
	4409	Machine hire - removal of trees	\$3,960.00
	4415	Hire of prime mover & double side tippers	\$5,082.00
		Total V81031	\$9,042.00
V81172 - WA Hino Sales & Service			
	HTCM133764	Diagnose & fix fault with SCR unit	\$15,687.35
		Total V81172	\$15,687.35
V81382 - Cervantes Hardware and Marine			
	163318	Cable ties	\$3.30
	162155	Poly fittings	\$123.86
		Total V81382	\$127.16
V81490 - Ricoh Finance			
	312901	Photo copier lease 08/02-07/03/21	\$1,337.60
		Total V81490	\$1,337.60
V81545 - Winc Australia Pty Limited			
	9034328997	Stationery	\$52.25
	9034355465	Stationery	\$85.18
	9034739021	Stationery	\$59.40
	9034721004	Stationery	\$60.72
	9034734227	Stationery	\$66.00
		Total V81545	\$323.55
V81795 - Jurien Bay Community Resource Centre			
	1352	Santa suit hire	\$50.00
	1369	Summer tales - advertising	\$250.00
		Total V81795	\$300.00
V81860 - Shadbolt Electrical			
	4501272	Upgrade electrical System	\$1,803.02
		Total V81860	\$1,803.02
V81882 - Jurien Trenching & Excavations			
	1434	Supply & install practise cricket nets	\$16,000.00
		Total V81882	\$16,000.00
V81912 - Moore Stephens WA Pty Ltd			
	1177	2020 Financial reporting training	\$1,782.00
		Total V81912	\$1,782.00
V81924 - Toll Transport Pty Ltd			
	0496-D583590	Freight - Jurien Admin	\$10.73
	0494-D583590	Freight - Jurien Admin	\$130.52
	0495-D583590	Freight - Dandy Depot	\$59.29
		Total V81924	\$200.54
V82028 - Avon Waste			
	42064	Fortnightly rubbish removal 19/12/20-01/01/21	\$22,849.13
		Total V82028	\$22,849.13
V82225 - Midcoast Hydraulic Services			
	0744	Wet hire water cart - JER	\$10,510.50
		Total V82225	\$10,510.50
V82228 - Marketforce Pty Ltd			
	36496	Advertising - Local govt tenders	\$615.90
		Total V82228	\$615.90
V82474 - Direct Contracting Pty Ltd			
	2137	Hire of plant & equip - Hanson Bay Rd	\$44,682.00
	2138	Hire of water tanker & loader	\$25,245.00
	2139	Remove kerb & dispose off site	\$924.00
	2144	Installation of drainage	\$60,775.00
		Total V82474	\$131,626.00
V82672 - Jurien Bay Tourist Park			
	OPERATOR RETURN 110121	BookEasy Booking 8864977	\$656.25
		Total V82672	\$656.25
V82774 - T-Quip			
	96685#5	Chain, Filters, air cleaner, belts	\$882.35
	97889#7	V-Belt	\$34.70
		Total V82774	\$917.05
V82823 - The Last Drop Plumbing Co			
	4146	Repair basin & water fountain	\$2,115.85
		Total V82823	\$2,115.85
V83094 - Dave Watson Contracting Pty Ltd			
	2151	Pruning of trees	\$5,252.50
		Total V83094	\$5,252.50
V83121 - Dandaragan Community Resource Centre Inc			
	124029	2nd instalment Services Support 20/21	\$18,326.30
		Total V83121	\$18,326.30
V83420 - Porter Consulting Engineers			
	20782	Completion of final drawings	\$24,612.50
		Total V83420	\$24,612.50
V83480 - Jurien Bay Newsagency			
	SN00035131122020	Reflex copy paper	\$9.95
		Total V83480	\$9.95
V83495 - Dandaragan Store			
	C56/DEC20	Dining and Refreshments (office hours)	\$48.66
		Total V83495	\$48.66
V83660 - D Greenwood			
	DEC20/16	Waste Management - Badgy Tip Dec 20	\$1,280.00
		Total V83660	\$1,280.00

V83705 - Telstra			04169079/P023546464-1	Whispir Usage Dec 20	\$463.63
				Total V83705	\$463.63
V83738 - George P Mostert			VERGE BOND REFUND	Verge Bond refund 105/2019	\$500.00
				Total V83738	\$500.00
V83863 - Badgingarra Roadhouse & Tourist Park			1081758	Diesel	\$239.07
				Total V83863	\$239.07
V83900 - Tronox Management Pty Ltd			REFUND OF RATES	Refund of rates	\$788.25
				Total V83900	\$788.25
V83914 - Turquoise Safaris			OPERATOR RETURN 11/01/21	BookEasy Booking 9046610	\$370.50
				Total V83914	\$370.50
V83925 - BookEasy Pty Ltd			18938	BookEasy Monthly booking fee Dec 20	\$330.00
				Total V83925	\$330.00
V83975 - Corsign (WA) Pty Ltd			52710	Smart plastic sleeves	\$907.50
				Total V83975	\$907.50
V84006 - Badgingarra Motors			53040	Penrite Penlue AdBlue	\$70.00
				Total V84006	\$70.00
V84117 - Vanguard Press			28497	Brochure distribution	\$134.05
				Total V84117	\$134.05
V84136 - J Bay Concreting			183	Installation of bollards - Shingle Ave	\$1,188.00
			184	Installation of solar bollards - Cervantes	\$1,391.50
				Total V84136	\$2,579.50
V84175 - Ni Luh Eyden			JAN21/48	Cleaning toilets & BBQ's - Sandy Cape	\$1,505.00
				Total V84175	\$1,505.00
V84327 - Lyall Ward			DEC20/11	Waste management Dandy tip Dec 20	\$2,112.00
			DEC20/12	Loader hire - push up Dandy tip	\$165.00
				Total V84327	\$2,277.00
V84371 - Nessa Hall - Nessay Cleaning Management Services			7145	Cleaning Contract Dec 20	\$5,411.29
			7166	Additional Cleaning Services - Festival Season	\$3,388.00
				Total V84371	\$8,799.29
V84422 - Jurien Tyre & Auto			51886	Repairs to low water alarm - PTL021	\$620.15
			51900	Fit new truck tyre to rim - PTL021	\$600.00
			52000	Repairs to fire pump - PLV232	\$148.00
			52112	100w globe	\$18.00
			52073	Repair brakes - PTT001	\$3,835.40
				Total V84422	\$5,221.55
V84462 - Jurien Bay Oceanic Experiences			OPERATOR RETURN 11/01/21	BookEasy Booking 9192751	\$805.00
				Total V84462	\$805.00
V84479 - Burns's Painting Service			531	Painting of Dandy Community Sports Centre	\$5,478.79
				Total V84479	\$5,478.79
V84480 - John Brandenburg			CROSSOVER CONTRIBUTION	Crossover contribution	\$495.00
				Total V84480	\$495.00
V84481 - Tasha Winzer			REFUND OVERPAYMENT OF RATES	Refund overpayment of rates	\$40.00
				Total V84481	\$40.00
V84482 - Carrington Associates			010-20-1	Hydraulic Services Design	\$4,200.00
				Total V84482	\$4,200.00
				Total EFT01037	\$339,399.15
21/01/2021	492	Cancelled	Cancelled	Cancelled	\$0.00
				Total EFT 492	\$0.00
21/01/2021	493	Cancelled	Cancelled	Cancelled	\$0.00
				Total EFT 493	\$0.00
21/01/2021	494	Cancelled	Cancelled	Cancelled	\$0.00
				Total EFT 494	\$0.00
21/01/2021	495	Payroll	Payroll 14/01/21	Payroll 14/01/21	\$102,721.67
				Total EFT 495	\$102,721.67
22/01/2021	496/1038				
V80033 - Derricks Auto-Ag & Hardware Plus			10229939	Auto shut fuel nozzle	\$439.00
				Total V80033	\$439.00
V80087 - Synergy			454515450/JAN21	Marine fields standpipe 12/11/20-12/1/21	\$121.54
			263827240/JAN21	Beachridge Estate entry 11/11/20 to 12/1/21	\$116.22
			902806950/JAN21	Baudin Park 12/11/20-12/01/21	\$292.92
			111890000/JAN21	Pacman Park 11/11/20-12/1/21	\$585.56
			111890190/JAN21	5A Park 11/11/20-12/1/21	\$119.09
				Total V80087	\$1,235.33
V80102 - Westrac Equipment			PI5329157	Hydraulic ram seal kit	\$303.03
				Total V80102	\$303.03
V80150 - RDI Transport			43322	Freight - Dandy depot	\$495.00
				Total V80150	\$495.00
V80279 - Jurien Sport and Recreation Centre			OPERATOR RETURN 18/01/21	BookEasy booking 9182670	\$164.00
				Total V80279	\$164.00
V81038 - AV Truck Services Pty Ltd			738399	Sensor - coolant level	\$764.13
			R040216	Repair fault with DPF system - PTH015	\$8,077.07
				Total V81038	\$8,841.20
V81097 - Australia Post			1010205006	Jurien Admin Postage Dec 20	\$974.65
				Total V81097	\$974.65
V81115 - Chadson Engineering Pty Ltd			A0091119	Photo chlorine & PH tablets	\$102.85
				Total V81115	\$102.85

V81252 - Brooks Hire Service Pty Ltd	173684	Hire of smooth drum roller	\$6,043.84
	173884	Hire smooth drum roller	\$4,230.69
		Total V81252	\$10,274.53
V81343 - Dandaragan Mechanical Services	6315	Supply & fit fuel pump - PTC025	\$1,558.15
	6326	Repairs to Hino - PTH016	\$1,447.50
	6327	Repairs to hydraulic leak - PTC022	\$264.10
	6379	Repairs to water truck - PTH017	\$574.20
	6557	Replace sight glass on hydraulic tank - PTC020	\$91.05
	6496	Tyres	\$352.00
		Total V81343	\$4,287.00
V81348 - Russ - Hills Contracting	4230	Freight - Dandy Depot	\$97.57
		Total V81348	\$97.57
V81352 - Jurien Signs	5033	900x600 4mm No Jumping - Jetty Sign	\$217.80
	5030	200x200 No Dog Signs	\$240.00
	5053	Protective Clothing - Gloves	\$1,365.00
	4814	Signs - no vehicle beyond this point	\$352.00
		Total V81352	\$2,174.80
V81382 - Cervantes Hardware and Marine	163776	Stanley knife, kwikset concrete	\$15.95
	163793	Chrome universal tap handles	\$12.10
	163967	Ultra thin cutting disc	\$26.95
	163971	Galv cup head, flat washer	\$6.49
	163929	Solenoid & PVC fittings	\$315.37
		Total V81382	\$376.86
V81545 - Winc Australia Pty Limited	9034872965	Daily pre start books	\$530.46
	9034355462A CR	Credit Stationery	-\$85.18
		Total V81545	\$445.28
V81581 - St John Ambulance Australia	1446	Off road first aid kits	\$220.00
		Total V81581	\$220.00
V81593 - Worldwide Printing Solutions	603343	Sandy cape camp fee envelopes	\$1,600.00
		Total V81593	\$1,600.00
V81688 - Swan Aussie Sheds	9038	Fence Post	\$125.25
		Total V81688	\$125.25
V81860 - Shadbolt Electrical	4501255	Replace rear carpark light lamp	\$655.60
		Total V81860	\$655.60
V81874 - Child Support	PJ003453	Child Support	\$171.91
		Total V81874	\$171.91
V81882 - Jurien Trenching & Excavations	1435	Supply & lay cement pads	\$3,000.00
		Total V81882	\$3,000.00
V81896 - Mid Coast Contracting	6444	Testing & tagging hand tools	\$922.30
		Total V81896	\$922.30
V81963 - Lewis Motors	59630	Wheel hub seal	\$32.14
		Total V81963	\$32.14
V82057 - Ray White Jurien Bay		Staff Housing 27/01 TO 09/02/21	\$670.00
		Total V82057	\$670.00
V82470 - D A Christie Pty Ltd T/as Christie ParkSafe	5307299	Brickwork large cabinet with cooktops	\$9,899.01
		Total V82470	\$9,899.01
V82649 - Jurien Garden Soils	DEC20/26	Mixed plants	\$408.00
		Total V82649	\$408.00
V82672 - Jurien Bay Tourist Park	OPERATOR RETURN 18/01/21	BookEasy booking 9193486	\$135.62
		Total V82672	\$135.62
V82767 - Fowler Electrical Contracting	R007771	Supply & install new water pump	\$5,363.16
		Total V82767	\$5,363.16
V82823 - The Last Drop Plumbing Co	4116	Repairs to standpipe	\$735.90
	4172	Unblock drain	\$583.00
		Total V82823	\$1,318.90
V83012 - Moora Tyres	58435	O-Ring, inner-liner seal	\$129.60
		Total V83012	\$129.60
V83047 - Dick Panizza & Co	69119	Supply of gravel	\$27,456.00
		Total V83047	\$27,456.00
V83278 - The Workwear Group Pty Ltd	12618935	Staff Uniforms	\$399.00
	824873	Staff Uniforms - Return	\$115.06
	12721326	Staff Uniforms	\$115.06
	834566	Staff Uniforms - return	\$115.06
	12682077	Staff Uniforms	\$399.00
	829532	Staff Uniforms	\$144.19
	829700	Staff Uniforms - return	\$32.37
	12797652	Staff Uniforms	\$147.22
	12686340	Staff Uniforms	\$399.00
	832398	Staff Uniforms - returned	\$182.48
	12704926	Staff uniforms	\$440.79
	831602	Staff uniforms - returned	\$396.79
	12758857	Staff Uniforms	\$215.21
		Total V83278	\$1,129.33
V83340 - CONNECT Call Centre Services	104747	After hrs call Dec 20	\$369.66
		Total V83340	\$369.66
V83413 - Direct Lighting Albany	76208	Light Starters & tubes	\$507.00
	76210	Light starters	\$40.00
		Total V83413	\$547.00

V83694 - Elite Electrical Contracting Pty Ltd	82627	Repair motion sensor light	\$104.50
	82603	Check & repair air conditioner	\$78.38
	82644	Repairs to server room air conditioner	\$223.09
		Total V83694	\$405.97
V83899 - All-Type Engraving	44828	Councillor name plates	\$79.20
		Total V83899	\$79.20
V83926 - Alcolizer Technology	224791	Service of HH3 Breath Tester	\$125.40
		Total V83926	\$125.40
V84100 - Jurien Bay Motel Apartments	OPERATOR RETURN 18/01/21	BookEasy booking 9197248	\$140.25
		Total V84100	\$140.25
V84458 - Professionals Jurien Bay		Staff Housing 27/01 TO 09/02/21	\$760.00
		Total V84458	\$760.00
		Total EFT496/1038	\$85,875.40

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497/039

V80043 - Jurien Bay IGA	07/DEC20	Jurien Bay Administration Consumables December 20	\$678.96
		Total V80043	\$678.96
V80087 - Synergy	818063790/JAN21	Cervantes F/S amenities 14/11/20-14/1/21	\$143.08
	905537000/JAN21	Memorial Cnr 14/11/20-14/1/21	\$211.40
	686912910/JAN21A	Cervantes Oval 14/11/20-14/1/21	\$2,275.39
	903907310/JAN21	Cervantes F/S Amenities 14/11/20-14/01/21	\$352.34
	113142450/JAN21	Cervantes Waste Transfer Stn 13/11/20-13/01/21	\$181.26
	853497790/JAN21	Cervantes Depot 12/11/20-13/01/21	\$116.22
	108788340/JAN21	Cervantes CBD rest area 13/11/20-14/01/21	\$141.19
	125055780/JAN21	Weston st park 14/11/20-14/01/21	\$114.37
	411619200/JAN21	New admin centre 17/12/20-20/01/21	\$6,563.29
	429026190/JAN21	Jurien depot 18/12/20-20/01/21	\$2,064.06
		Total V80087	\$12,162.60
V80121 - Kleenheat Gas Pty Ltd	4342084	45gk Cylinder Service Charge 2021	\$85.80
		Total V80121	\$85.80
V80240 - RBC Rural	28786	Meterplan charge Jan 20	\$2,822.00
		Total V80240	\$2,822.00
V80279 - Jurien Sport and Recreation Centre	OPERATOR RETURN 25/01/21	BookEasy Booking 9123528	\$758.00
		Total V80279	\$758.00
V80549 - BP Jurien Bay	9643	Repair tyre puncture	\$100.00
		Total V80549	\$100.00
V81352 - Jurien Signs	4647	Cancer council sunscreen	\$89.70
	5058	Rural Road Numbers	\$101.60
		Total V81352	\$191.30
V81924 - Toll Transport Pty Ltd	0497-D583590	Freight - Dandy Depot	\$10.73
	0498-D583590	Freight - Jurien Admin	\$127.82
	0499-D583590	Freight - Dandy Depot	\$43.45
		Total V81924	\$182.00
V82672 - Jurien Bay Tourist Park	OPERATOR RETURN 25/01/21	BookEasy booking 9248251	\$131.25
		Total V82672	\$131.25
V83074 - Indian Ocean Rock Lobster	33053	Function food & Refreshments	\$7,427.50
		Total V83074	\$7,427.50
V83121 - Dandaragan Community Resource Centre Inc	124045	Cleaning & maintenance contract January 21	\$1,320.92
		Total V83121	\$1,320.92
V83298 - Shaun Turbett Welding & Fabrication Services	1274	Visitor Centre Merchandise	\$243.98
		Total V83298	\$243.98
V83484 - Cervantes Community Men's Shed	11	Visitor centre merchandise - mats	\$442.00
		Total V83484	\$442.00
V83507 - Council First	SI006172	Office 365 - Feb 21	\$1,055.26
		Total V83507	\$1,055.26
V83663 - Concept AV	11292	Soft conference camera for chambers	\$7,817.70
		Total V83663	\$7,817.70
V83715 - Pinnacles Holiday Park	OPERATOR RETURN 25/01/21	BookEasy Booking 9204872	\$78.75
		Total V83715	\$78.75
V83914 - Turquoise Safaris	OPERATOR RETURN 25/01/21	BookEasy Booking 9229512	\$545.50
		Total V83914	\$545.50
V83976 - Turquoise Coast Smash Repairs	468	Repairs to left hand panel - PLV262	\$764.50
		Total V83976	\$764.50
V84004 - Department of Water and Environmental Regulation	TF016831	Controlled Waste tracking 04/01/21	\$88.00
		Total V84004	\$88.00
V84062 - IQ Merchandising	4159	Visitor Centre Merchandise	\$889.85
		Total V84062	\$889.85
V84422 - Jurien Tyre & Auto	52150	Assembly clutch master cylinder	\$52.35
	52236	Repair tyres - PCL008	\$246.00
		Total V84422	\$298.35
V84430 - MCG Architects Pty Ltd	2375	Structural Engineer & contract documentation	\$14,905.00
		Total V84430	\$14,905.00
V84483 - Jonathan Epps	INVOICE 190121	Travel, accomodation, & tree inspect & report	\$2,660.00
		Total V84483	\$2,660.00
V84484 - Linda Quanchi	JAN21/2	Visitor centre merchandise	\$479.00
		Total V84484	\$479.00
		Total EFT497/1039	\$56,128.22

Grand Total - EFT Payment

\$1,277,750.88



Monthly Statements

for the period ending 31 January 2021

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SHIRE OF DANDARAGAN
 FINANCIAL ACTIVITY STATEMENT by Department
 as at 31 January 2021

	Leg.	Note	Budget 2020/2021	Y-T-D Budget 2020/2021	Actual 2020/2021	Variance
			\$	\$	\$	
OPERATING ACTIVITIES						
Adjusted net current assets at start of financial year - surplus/(deficit)	FMR34(2)(a)		723,612	739,166	739,166	
Revenue from operating activities (excluding rates)						
Governance			78,168	16,527	12,759	77%
General purpose funding			739,452	371,576	391,399	105%
Law, order & public safety			405,503	399,601	384,057	96%
Health			4,290	2,200	36,461	1657%
Education & welfare			10,500	0	0	100%
Community amenities			1,359,940	1,149,039	1,151,254	100%
Recreation and culture			427,586	249,332	278,238	112%
Transport			276,093	258,907	281,438	109%
Economic services			229,166	155,741	168,086	108%
Other property and services			136,571	85,686	153,030	179%
			3,667,270	2,688,609	2,856,722	
Expenditure from operating activities						
Governance			(642,760)	(314,712)	(306,961)	98%
General purpose funding			(197,086)	(107,263)	(100,360)	94%
Law, order & public safety			(1,344,056)	(720,266)	(738,023)	102%
Health			(321,579)	(170,697)	(165,355)	97%
Education & welfare			(110,359)	(35,586)	(31,920)	90%
Community amenities			(2,262,988)	(1,304,894)	(1,257,101)	96%
Recreation and culture			(3,144,733)	(1,881,601)	(1,728,675)	92%
Transport			(5,397,208)	(3,137,972)	(3,146,006)	100%
Economic services			(726,692)	(404,767)	(366,722)	91%
Other property and services			(619,246)	(126,907)	(77,970)	61%
			(14,766,706)	(8,204,664)	(7,919,093)	
Non-cash amounts excluded from operating activities			6,308,988	3,447,201	3,468,843	
Amount attributable to operating activities			(4,066,836)	(1,329,688)	(854,361)	
INVESTING ACTIVITIES						
Non-operating grants, subsidies and contributions	11		7,193,247	5,490,593	1,965,165	
Proceeds from disposal of assets	3		33,600	33,600	0	
Purchase land and buildings	2		(1,751,317)	(1,021,602)	0	
Purchase furniture and equipment	2		(341,547)	(199,236)	(7,107)	
Purchase plant and equipment	2		(7,000)	(4,083)	0	
Purchase infrastructure assets - roads	2		(5,173,070)	(3,017,624)	0	
Purchase infrastructure assets - parks & reserves	2		(529,977)	(309,153)	0	
Purchase infrastructure assets - other	2		(4,093,467)	(2,387,856)	0	
Purchases - Works in Progress (Not Capitalised)	2		0	0	(3,951,421)	
Amount attributable to investing activities			(4,669,531)	(1,415,361)	(1,993,363)	
FINANCING ACTIVITIES						
Proceeds from new borrowings	4		1,340,000	1,340,000	50,000	
Repayment of borrowings	4		(157,986)	(104,515)	(58,934)	
Payment of self supporting loan to community group	4		(50,000)	(50,000)	(50,000)	
Self-supporting loan principal income	4		45,436	28,397	23,486	
Community group cash advance principal income	4		2,076	2,076	2,076	
Payment of right of use lease			(40,530)	(25,617)	(26,770)	
Transfer to reserves	8		(187,045)	(11,667)	(16,923)	
Transfer from reserves	8		(818,335)	(0)	(0)	
Amount attributable to financing activities			(1,770,286)	(1,178,675)	77,066	
Budgeted deficiency before general rates			6,966,081	1,566,374	2,924,789	
Estimated amount to be raised from general rates	6		(6,300,242)	(6,301,235)	(6,326,369)	
Adjusted net current assets at end of financial year - surplus/(deficit)	FMR34(2)(a)	5	665,839	(4,734,861)	(3,401,580)	
Budget adjustment - Provisions	FMR32(f)		(665,839)	(665,839)		
Budget Surplus / (Deficiency)			(0)	(5,400,700)		

This statement is to be read in conjunction with the accompanying notes.

FMR = Local Government (Financial Management) Regulations 1996

SHIRE OF DANDARAGAN
STATEMENT OF FINANCIAL POSITION
as at 31 January 2021

Description	Note	for the year	for the period
		ended 30	ending 31
		June 2020	January 2021
		\$	\$
CURRENT ASSETS			
Cash and cash equivalents	7	7,647,366	9,399,208
Trade receivables		966,912	1,083,163
Other financial assets at amortised cost		42,602	21,950
Other current assets		5,514	0
Inventories		32,574	14,565
TOTAL CURRENT ASSETS		8,694,968	10,518,887
NON-CURRENT ASSETS			
Other financial assets at amortised cost		170,113	215,202
Trade receivables		50,124	0
Land		2,903,000	2,903,000
Buildings and improvements		29,775,900	29,095,675
Furniture and equipment		796,707	736,376
Plant and equipment		3,645,180	3,283,921
Right of use assets		89,542	63,907
Infrastructure		247,954,139	249,621,398
TOTAL NON-CURRENT ASSETS		285,384,705	285,919,479
TOTAL ASSETS		294,079,673	296,438,366
CURRENT LIABILITIES			
Trade and other payables		(1,088,748)	(96,706)
Contract liabilities		(458,071)	(836,789)
Lease liabilities		(40,530)	(13,760)
Borrowings		(112,406)	(58,382)
Employee related provisions		(673,805)	(452,362)
TOTAL CURRENT LIABILITIES		(2,373,560)	(1,458,000)
NON-CURRENT LIABILITIES			
Lease liabilities		(49,619)	(49,619)
Borrowings		(157,012)	(202,101)
Employee related provisions		(122,432)	(122,432)
Other provisions		0	0
TOTAL NON-CURRENT LIABILITIES		(329,062)	(374,151)
TOTAL LIABILITIES		(2,702,622)	(1,832,152)
TOTAL NET ASSETS		291,377,051	294,606,214
EQUITY			
Retained earnings		(197,037,451)	(200,249,690)
Reserves - cash backed	8	(5,692,576)	(5,709,499)
Revaluation surplus		(88,647,025)	(88,647,025)
TOTAL EQUITY		291,377,051	294,606,214

This statement is to be read in conjunction with the accompanying notes.

SHIRE OF DANDARAGAN
STATEMENT OF COMPREHENSIVE INCOME by Nature or Type
as at 31 January 2021

	Note	Budget 2020/2021	Y-T-D Budget 2020/2021	Actual 2020/2021
		\$	\$	\$
Revenue				
Rates	6	6,300,242	6,301,235	6,326,369
Operating grants, subsidies and contributions		1,208,418	737,074	813,674
Fees and charges		2,315,079	1,877,651	1,958,056
Interest earnings		22,000	12,250	19,636
Other revenue		121,773	61,634	65,355
		9,967,512	8,989,844	9,183,090
Expenses				
Employee costs		(4,047,580)	(2,053,335)	(1,984,664)
Materials and contracts		(2,753,108)	(1,596,842)	(1,416,071)
Utilities		(459,742)	(264,498)	(238,843)
Insurance		(420,188)	(420,189)	(421,075)
Other expenses		(753,722)	(407,810)	(437,096)
Depreciation		(6,308,988)	(3,447,201)	(3,418,719)
		(14,743,328)	(8,189,875)	(7,916,468)
		(4,775,816)	799,969	1,266,622
Borrowing costs expense	4	(23,378)	(14,790)	(2,625)
Grants & Subsidies (towards non-operating activities)		7,193,247	5,490,593	1,965,165
Fair Value adjustment through profit and loss		0	0	0
Profit / Loss on Disposal of Assets	3	0	0	0
Net result		2,394,053	6,275,773	3,229,163
Other comprehensive income				
Changes on revaluation of non-current assets		0	0	0
Total other comprehensive income		0	0	0
Total comprehensive income		2,394,053	6,275,773	3,229,163

This statement is to be read in conjunction with the accompanying notes

SHIRE OF DANDARAGAN
STATEMENT OF COMPREHENSIVE INCOME by Department
as at 31 January 2021

	Note	Budget 2020/2021	Y-T-D Budget 2020/2021	Actual 2020/2021
		\$	\$	\$
Governance		78,168	16,527	12,759
General purpose funding		7,039,694	6,672,811	6,717,768
Law, order & public safety		405,503	399,601	384,057
Health		4,290	2,200	36,461
Education & welfare		10,500	0	0
Community amenities		1,359,940	1,149,039	1,151,254
Recreation and culture		427,586	249,332	278,238
Transport		276,093	258,907	281,438
Economic services		229,166	155,741	168,086
Other property and services		136,571	85,686	153,030
		9,967,512	8,989,844	9,183,090
Expenses excluding finance costs				
Governance		(634,346)	(309,914)	(305,466)
General purpose funding		(197,086)	(107,263)	(100,360)
Law, order & public safety		(1,343,921)	(720,187)	(737,918)
Health		(321,579)	(170,697)	(165,355)
Education & welfare		(106,984)	(35,586)	(31,920)
Community amenities		(2,262,988)	(1,304,894)	(1,257,101)
Recreation and culture		(3,142,356)	(1,880,126)	(1,727,976)
Transport		(5,397,208)	(3,137,972)	(3,145,908)
Economic services		(726,692)	(404,767)	(366,722)
Other property and services		(610,169)	(118,469)	(77,743)
		(14,743,328)	(8,189,875)	(7,916,468)
		(4,775,816)	799,969	1,266,622
Finance costs				
Governance		(8,413)	(4,798)	(1,495)
Law, order & public safety		(135)	(79)	(105)
Education & welfare		(3,375)	0	0
Recreation and culture		(2,378)	(1,475)	(699)
Transport		0	0	(98)
Other property and services		(9,076)	(8,438)	(228)
		(23,378)	(14,790)	(2,625)
Non- operating grants and subsidies				
Health		2,000	2,000	0
Recreation and culture		1,702,654	0	0
Transport		5,483,593	5,483,593	1,965,165
Economic services		5,000	5,000	0
		7,193,247	5,490,593	1,965,165
Profit / (loss) on asset disposal				
		0	0	0
Net result		2,394,053	6,275,773	3,229,163
Other comprehensive income				
Changes on revaluation of non-current assets		0	0	0
Total other comprehensive income		0	0	0
Total comprehensive income		2,394,053	6,275,773	3,229,163

This statement is to be read in conjunction with the accompanying notes

SHIRE OF DANDARAGAN
STATEMENT OF CHANGES IN EQUITY
as at 31 January 2021

Note	Retained Surplus	Reserves Cash Backed	Revaluation Surplus	Total Equity
	\$	\$	\$	\$
Balance as at 30 June 2020	197,037,451	5,692,576	88,647,025	291,377,051
Comprehensive Income				
Net result	3,229,163	0	0	3,229,163
Changes on revaluation of non-current assets	0	0	0	0
Total comprehensive income	3,229,163	0	0	3,229,163
Transfers from/(to) reserves	(16,923)	16,923	0	0
Balance as at 31 January 2021	200,249,690	5,709,499	88,647,025	294,606,214

This statement is to be read in conjunction with the accompanying notes.

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

2 DETAILED ACQUISITION

Description	FA#	LOCN	Schedule	Total	Land & Buildings \$	Plant & Equipment \$	Furniture & Equipment \$	Parks & Reserves \$	Roads \$	Other \$
Soft Conferencing additions		180009	Governance	7,107	7,200		7,107	7,200		
Community Noticeboard - Other - RenewalSLK-		130064	Governance	0	100,000					100,000
JBAdmin Emerg. lighting test circuit		150180	Governance	696	1,000	696	1,000			
Shredder			Governance	0	5,000					5,000
Switches / Antennas and Access Points			Governance	0	49,592					49,592
Generator - Wellness		160013	Health	0	7,000		7,000			
Dandaragan House (GROH)		150196	Education & Welfare	18,600	540,000	18,600	540,000			
JBFRCP ground remodel & refurb Wet area		150220	Education & Welfare	15,114	31,096	15,114	31,096			
Dand cemetery wing walls		130054	Community Amenities	5,136	4,000	5,136	4,000			
FRC Emerg. lighting test circuit		150182	Community Amenities	887	1,000	887	1,000			
FRC Softfall		150195	Community Amenities	11,472		11,472				
DandCRC Emerg. lighting test circuit		150187	Community Amenities	2,689	2,689	2,689	2,689			
CCC renewal -carryover		150129	Recreation & Culture	54,311	53,613	54,311	53,613			
key revision at CCC exist hall doors		150178	Recreation & Culture	314	14,796	314	14,796			
Civic Cnt. Emerg. lighting test circuit		150181	Recreation & Culture	320	320	320	320			
JSRC Emerg. lighting test circuit		150183	Recreation & Culture	1,205	1,064	1,205	1,064			
DCC Emerg. lighting test circuit		150184	Recreation & Culture	2,089	2,089	2,089	2,089			
BCC Emerg. lighting test circuit		150185	Recreation & Culture	437	1,000	437	1,000			
CCC Emerg. lighting test circuit		150186	Recreation & Culture	320	320	320	320			
BCC re-roof carryover		150193	Recreation & Culture	27,750	31,500	27,750	31,500			
CCRC noise / doors		150209	Recreation & Culture	0	40,000		40,000			
BCC roof support for solar panels		150218	Recreation & Culture	81	20,000	81	20,000			
Amphitheatre screen modifications		150221	Recreation & Culture	0	5,200		5,200			
2 York St - Budget Amendment 20200924 9.1.3		150225		17,390	23,630	17,390	23,630			
Fshore Pathways		110064	Recreation & Culture	74,896	200,000					74,896
Jurien Irrigation Project - Other - NewSLK-		120094	Recreation & Culture	3,947	104,183			3,947	104,183	
Badgingarra Tree Replacement - Other - RenewalSLK-		120096	Recreation & Culture	32,001	25,794			32,001	25,794	
Dand. Landscaping/fence etc		120097	Recreation & Culture	7,899	25,000			7,899	25,000	
JB Picnic Area		120098	Recreation & Culture	15,239	150,000			15,239	150,000	
Faunt. Power Upgrade		120099	Recreation & Culture	2,028	60,000			2,028	60,000	
Container Bar Platform		120100	Recreation & Culture	3,278	165,000			3,278	165,000	
Beschridge Swales - Other - RenewalSLK-		130041	Recreation & Culture	0	30,000					30,000
Dand. BMX Pump		130066	Recreation & Culture	0	100,000					100,000
Dand. Public Art		130067	Recreation & Culture	4,500	50,000					4,500
JB Youth Precinct		130068	Recreation & Culture	273,230	1,200,000					273,230
Badgingarra Cricket Nets		130069	Recreation & Culture	14,620	15,000					14,620
Ablution Pavillion		150208	Recreation & Culture	38,348	750,000	38,348	750,000			
COVID Community Building Program		150216	Recreation & Culture	26,081	74,559	26,081	74,559			
Fshore Playground		180007	Recreation & Culture	2,028	250,000		2,028	250,000		
C/O Cervantes TV-Replace tower and antenna		130060	Recreation & Culture	40,890	67,917					40,890
Coastal Fencing project - Other - RenewalSLK-		130063	Recreation & Culture	2,520	80,000					2,520
Civic Centre Fit-Out		180008	Recreation & Culture	7,715	29,755		7,715	29,755		
Casuarina Crescent - Other - NewSLK-		110057	Transport	24,983	37,080					24,983
Eucalypt Way - Other - NewSLK-		110058	Transport	39,043	48,720					39,043
Turquoise Way - Other - RenewalSLK-		110059	Transport	112,079	108,750					112,079
Turquoise Way - Other - NewSLK-		110060	Transport	146	150,000					146
JB Footpaths - Other - NewSLK-		110061	Transport	62,095	105,000					62,095
Cervantes Footpaths - Other - NewSLK-		110063	Transport	78,520	114,275					78,520
Bashford Street - Other - RenewalSLK-		110065	Transport	43	80,000					43
CCC Carpark - Other - RenewalSLK-		130061	Transport	62,797	156,725					62,797
Badgingarra Truck bay - Other - RenewalSLK-		130062	Transport	240,997	260,000					240,997
Munbinea Road Bridge - Other - RenewalSLK-		130073	Transport	0	394,000					394,000
Munbinea Road - Gravel ResheetSLK0-4		MGR004	Transport	0	109,555				109,555	
Cadda Road - Gravel ResheetSLK18.4-22.4		MGR009	Transport	0	109,555				109,555	
Kayanaba Road - Gravel ResheetSLK14.7-18.37		MGR034	Transport	0	69,778				69,778	
Wandawallah Road - Gravel ResheetSLK8-12		MGR045	Transport	0	109,555				109,555	
Black Arrow Road - Gravel ResheetSLK14.7-18.7		MGR052	Transport	0	95,555				95,555	
Wongonderrah Road - Gravel ResheetSLK11.2-15.2		MGR062	Transport	0	109,555				109,555	
Sandy Cape - ReconstructionSLK6.15-6.9		MGR127	Transport	0	170,000				170,000	
Airstrip Road - SealingSLK0-1		MUC148	Transport	0	29,000				29,000	
NorthWest Road - ReconstructionSLK-		RCR005	Transport	0	6,362				6,362	
Yerramullah Road - Gravel ResheetSLK-		RCR022	Transport	93,781	62,924			93,781	62,924	
Watheroo West Road - Other - NewSLK10.74-42		ROS008	Transport	8,117	93,780			8,117	93,780	
Watheroo West Road - Other - NewSLK0-8.11		ROS008A	Transport	0	24,330				24,330	
Jurien East Road - ReconstructionSLK14.5-23.5		ROS856	Transport	2,155,319	2,253,213				2,155,319	2,253,213

Cataby Road - ReconstructionSLK0-3	RRG001	Transport	98,624	448,953										98,624	448,953		
Cataby Road - ReconstructionSLK6-9	RRG001A	Transport	10,244	577,487										10,244	577,487		
Dandaragan Road - SealingSLK26-28.8	RRG002	Transport	8,168	101,250										8,168	101,250		
Jurien East Road - SealingSLK12-14.5	RRG856	Transport	0	102,220											102,220		
Cantabilling Road - Gravel ResheetSLK22.1-26.1	RTR047	Transport	0	146,454											146,454		
Cockleshell Gully - Gravel ResheetSLK13.8-15.9	RTR051	Transport	53,070	89,803										53,070	89,803		
Roberts Street - ReconstructionSLK0-0.25	RTR073	Transport	18,787	270,000										18,787	270,000		
Hansen Bay Road - SealingSLK0-1	RTR226	Transport	77,687	123,741										77,687	123,741		
Jurien East Road - ReconstructionSLK-	SBS856	Transport	0	70,000										0	70,000		
Jurien Bay EW Runway - Other - NewSLK-	I30065	Transport	30,888	650,000												30,888	650,000
Taxiways	I30072	Transport	9,824	80,000												9,824	80,000
Arrival Centre	I50215	Transport	0	177,071			177,071										
Dest.Market. Shire Entry Signs	I30070	Economic Services	0	14,000													14,000
Dest.Market. Jurien Townsite Precinct Signs	I30071	Economic Services	58,176	52,000												58,176	52,000
Total			3,958,527	11,920,008	223,240	1,774,947	0	7,000	16,850	341,547	64,393	529,977	2,523,797	5,173,070	1,130,247	4,093,467	

CAPITALISED 7,107
 WIP 3,951,420
 TOTAL 3,958,527

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

3 ASSET DISPOSAL AND CHANGEOVER

Description	Proceeds from Sale		Cost of Replacement		Net Cost for Change Over		Written Down Value		Profit/(Loss) on Disposal	
	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget
FA2995 - Wagon - Mazda CX5 Maxx DN016	\$	\$			\$	\$		\$	0	\$
FA3091 - Wagon - Mazda CX5 Maxx DN032		16,800						16,800	0	0
	0	33,600	0	0	0	0	0	33,600	0	0

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

4 INFORMATION ON BORROWINGS

(a) Borrowing repayments

Movement in borrowings and interest between the beginning and the end of the current financial year.

	Outstanding 1-Jul-20	New loans		Interest repayments		Principal repayments		Outstanding for the year ending 30 June
		2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	
Governance								
Loan 127	147,805	0	0	4,102	7,219	35,448	71,880	75,925
Education and Welfare								
Loan 136			540,000		3,375		25,432	514,568
Recreation and culture								
New loan - 137			750,000		7,746		15,238	734,762
	147,805	0	1,290,000	4,102	18,340	35,448	112,550	1,325,255
Self Supporting Loans								
Recreation and culture								
Loan 130	48,162	0	0	1,190	2,093	11,604	23,494	24,668
Loan 131	3,183	0	0	43	43	3,183	3,183	0
Loan 132	3,603	0	0	43	43	3,603	3,603	0
Loan 133	43,374	0	0	538	1,034	3,375	6,791	36,583
Loan 134	23,290		0	154	296	1,722	3,455	19,835
Loan 135		50,000	50,000		200		4,911	45,089
	121,612	50,000	50,000	1,966	3,709	23,486	45,437	126,175
	269,417	50,000	1,340,000	6,068	22,049	58,934	157,987	1,451,430
Cash Advance Repayment								
Recreation and culture								
Cervantes Bowling Club	2,076	0	0	0	0	2,076	2,076	0
	2,076	0	0	0	0	2,076	2,076	0

All borrowing repayments, other than self supporting loans, will be financed by general purpose revenue.

The self supporting loan(s) repayment will be fully reimbursed.

The self supporting loan(s) repayment will be fully reimbursed.

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

5. NET CURRENT ASSETS

	Note	2020	2021
		\$	\$
Composition of estimated net current assets			
Current assets			
Cash - unrestricted		1,954,791	3,689,709
Cash - restricted reserves	8	5,692,576	5,709,499
Receivables		1,015,028	1,105,113
Inventories		32,574	14,565
		<u>8,694,968</u>	<u>10,518,887</u>
Less: current liabilities			
Trade, other payables and provisions		(2,261,154)	(1,399,618)
Long term borrowings		(112,406)	(58,382)
		<u>(2,373,560)</u>	<u>(1,458,000)</u>
Unadjusted net current assets		6,321,408	9,060,886
Adjustments			
Less: Cash - restricted reserves	8	(5,692,576)	(5,709,499)
Less: Loans receivable - clubs/institutions		(42,602)	(21,950)
Add: Right of use lease liability		40,530	13,760
Add: Current portion of borrowings		112,406	58,382
Adjusted net current assets - surplus/(deficit)		<u>739,166</u>	<u>3,401,579</u>
Budget Adjustment			
Add: Provisions		673,805	452,362
Budget surplus/(deficit)		<u>1,412,971</u>	<u>3,853,942</u>

Reason for Adjustments

The differences between the net current assets at the end of each financial year in the rate setting statement and adjusted net current assets detailed above arise from amounts which have been excluded when calculating the budget deficiency in accordance with Local Government (Financial Management) Regulation 32 as movements for these items have been funded within the budget estimates. These differences are disclosed as adjustments above.

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

6 RATES AND SERVICE CHARGES

(a) Rating Information

RATE TYPE	Rate in	Number of properties	Rateable value	rate revenue	Budget 2020/2021			Actual 2020/2021		
					interim rates	back rates	total revenue	rate revenue	interim rates	back rates
	\$		\$	\$	\$	\$	\$	\$	\$	\$
General rate										
Gross rental valuations										
GRV - General	8.0156	1,884	31,764,066	2,528,082	0	0	2,528,082	2,546,082	10,621	2,556,703
Unimproved valuations										
UV - General	0.6955	520	405,363,396	2,836,184	0		2,836,184	2,836,184	2,662	2,838,846
Sub-Totals		2,404	437,127,462	5,364,266	0	0	5,364,266	5,382,266	13,284	5,395,549
Minimum	\$									
Minimum payment										
Gross rental valuations										
GRV - General	947	978	5,340,701	926,166	0	0	926,166	926,166		926,166
GRV - Lesser (Dandaragan & Badgingarra)	715	28	118,192	20,020	0	0	20,020	20,020		20,020
Unimproved valuations										
UV - Mining	894	77	1,612,271	68,838	0	0	68,838	68,838		68,838
UV - Lesser	715	223	17,484,600	159,445	0	0	159,445	159,445		159,445
Sub-Totals		1,306	24,555,764	1,174,469	0	0	1,174,469	1,174,469		1,174,469
		3,710	461,683,226	6,538,735	0	0	6,538,735	6,556,735		6,570,018
Discount refer (note 1 (c))							(240,000)			(243,650)
Total amount raised from general rates							6,298,735			6,326,368
Ex Gratia Rates							1,507			0
Total rates							6,300,242			6,326,368

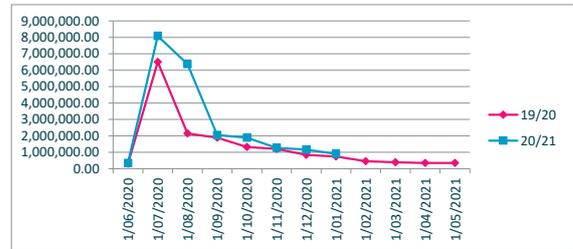
NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

7 CASH, INVESTMENTS & RECEIVABLES

Note	2020	2021
	\$	\$
Cash And Cash Equivalents		
Unrestricted	1,653,919	3,689,709
Restricted	5,821,414	5,709,499
	<u>7,475,333</u>	<u>9,399,208</u>
Receivables		
Rates outstanding	352,891	907,632
Sundry debtors	428,031	176,867
GST receivable	(0)	(0)
	<u>498,715</u>	<u>1,084,498</u>

Rates Outstanding

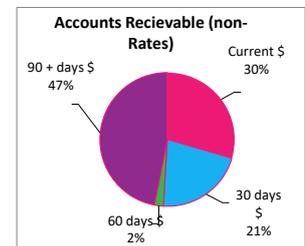
	YTD	30-Jun-20
Opening Arrears Previous Years	352,891	274,006
Levied this Year	7,763,596	7,762,858
Less Collections to date	- 7,208,856	- 7,683,973
Equals Current Outstanding	907,632	352,891
Net Rates Collectable	907,632	352,891
% Collected	88.82	95.61



Sundry Debtors

	Current	30 days	60 days	90 + days
	\$	\$	\$	\$
Receivables General	52,261.90	37,810.72	3,797.99	82,995.95
Total Receivables General Outstanding				<u>176,866.56</u>

Amounts shown above include GST (where applicable)



NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

8 CASH BACKED RESERVES

(a) Cash Backed Reserves - Movement

	Opening Balance	Budget Transfer to	Transfer (from)	In Use Adjustment	Closing Balance
	\$	\$	\$		\$
Plant Reserve	254,398	756			255,155
Building Renewal Reserve	790,929	2,351			793,280
Rubbish Reserve	434,007	1,290			435,297
Community Centre Reserve	387,494	1,152			388,646
Television Services Reserve	97,728	291			98,019
Information Technology Reserve Reserve	57,018	170			57,187
Land Development Reserve	70,662	210			70,872
Parking Requirements (Lot 1154 Sandpiper Street) Reserve	11,405	34			11,439
Parks and Recreation Grounds Development (Seagate) Reserve	376,292	1,119			377,410
Sport and Recreation Reserve	310,643	924			311,567
Landscaping Reserve	2,647	8			2,655
Aerodrome Reserve	129,177	384			129,562
Public Open Space Renewal Reserve	558,221	1,660			559,880
Infrastructure Renewal Reserve	811,987	2,414			814,401
Public Open Space Construction Reserve	112,904	336			113,240
Infrastructure Construction Reserve	62,338	185			62,523
Building Construction Reserve	116,191	345			116,537
Leave Reserve	260,204	774			260,978
Economic Development Initiatives Reserve	794,068	2,361			796,429
Turquoise Way Path Reserve	51,766	154			51,920
Cash in lieu of landscaping – Lot 1146 Sandpiper Street Reserve	2,495	7			2,502
	5,692,576	16,923	0	0	5,709,499

**NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021**

9 TRUST FUNDS

Funds held at balance date over which the local government has no control and which are not included in the financial statements are as follows:

Trust Fund

Detail

Cash In Lieu POS - L9000 Valencia

	Balance	Movements		Balance
	30-Jun-20	Inwards	Outwards	as at 31 January 2021
	\$	\$		\$
	200,277			200,277
	200,277	0	0	200,277

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

10 BUDGET AMMENDMENTS

Description	Council Resolution	Schedule	Classification	Non-Cash		Amended Budget Running Balance	
				Adjustment	Increase in cash available		
Budget Adoption						Opening Surplus	9,068
Permanent Changes							
Staff housing refurbishment - 2 York St Jurien Bay	20200824 9.1.3	Building Reserve	Balance Sheet	23,630			
Jurien Sport & Recreation roof repairs	20201022 9.1.2	Building Reserve	Balance Sheet	50,000			
Jurien Bay Golf Club Irrigation Project	20200827 9.1.3						
				73,630	0	0	
						0	

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

11 GRANTS & CONTRIBUTIONS

Program / Details	Grant Provider	In Advance payments	Budget 2020/21	2019 / 20 Budget Amendments	Received	Recoup Status		
						Revenue/ Expenditure	Liability	Not Received
						\$	\$	\$
Operating								
Other General Purpose Income								
Grants Commission - General	WALGGS	351,640	357,330		181,127	181,127		176203.50
Grants Commission - Roads	WALGGS	685,664	350,822		179,110	179,110		171712.50
Fire Prevention								
ESL Operating Grant	FESA		50,000		42,493	35,441	7,052	7507.50
Other Welfare								
Spray the Grey Grant Estimate	Healthway		10,500		10,500		10,500	0.00
Swimming Areas and Beaches								
CHRMAP			30,000					30000.00
Streets Roads Bridges Depots Maint								
MRWA Direct Grant	MRWA		249,865		249,865	249,865		0.00
Street Light Subsidy			3,400		3,538	3,538		-137.56
Tourism & Area Promotion								
Dest.Market Indust Contribution to website			10,000					10000.00
		1,037,304	1,061,917	-	666,631	649,080	17,552	395,286
Non-Operating								
Other Health								
Generator - Practice contribution			2,000					2,000
Other Recreation and Sport								
Badgingarra Cricket Nets BCA contribution			5,000					5,000
JB Youth Precinct	LotteryWest Grant		1,127,654					1,127,654
Dand. Landscaping/fence etc	Federal Drought		25,000					25,000
JB Picnic Area	Federal Drought		150,000					150,000
Faunt. Power Upgrade	Federal Drought		60,000					60,000
Dand. BMX Pump	Federal Drought		100,000					100,000
Dand. Public Art	Federal Drought		50,000					50,000
Badgingarra Cricket Nets	CSRFF Grant		40,000					40,000
Public Halls & Civic Centre								
CCRC noise / doors	Federal Drought		5,000					5,000
Television and Radio Rebroadcast								
Coastal Fencing Project	Planning Commission		40,000					40,000
Streets Roads Bridges Depots Maint								
Regional Road Group RRG	RRG		642,968		257,721	117,036	140,685	385,247
Commodity Route Funding	SCR		93,127		43,687	43,687	-	49,440
SBS Grant	SBS		115,334					115,334
RED Grant	RED		100,000					100,000
DoT Dual Use Path	DoT		141,750		28,350	28,350	-	113,400
WALGGC - Special Projects	WALGGS		394,000		394,000		394,000	-
WSFN	WSFN		2,203,569		1,671,466	1,671,466	-	532,103
RTR Grant	RTR		554,113		73,739	73,739	-	480,374
JB Footpaths	Federal Drought		150,000					150,000
CCC Carpark	Federal Drought		150,000					150,000
Badgingarra Truck bay	Federal Drought		235,000					235,000
Aragon Street Design	Federal Drought		40,000					40,000
Airfields								
RAP Grant	RAP		172,803		19,975		19,975	152,828
Local Roads and Comm Inf			590,929		295,465	30,888	264,578	295,464
Tourism & Area Promotion								
Dest.Market Indust Contribution to website			5,000					5,000
		7,193,247	7,193,247	-	2,784,403	1,965,165	819,238	4,408,844
		1,037,304	8,255,165	-	3,451,034	2,614,245	836,789	4,804,130.30

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

12 VARIANCES

Reporting Program	Var \$	Var %	Var	Timing / Permanent	Explanation of Variance
Operating Revenue					
Governance	(3,768)	77%	▼		
General Purpose Funding	19,823	105%	▲		
Law, Order & Public Safety	(15,544)	96%	▼		
Health	34,261	1657%	▲	Permanent	Unbudgeted Increase in Home Occupations, Lodging Houses & Food Reg's, Health Services to third parti
Education and Welfare	0	100%	▲		
Community Ammenities	2,215	100%	▲		
Recreation and Culture	28,906	112%	▲	Permanent	Unbudgeted Insurance claims
Transport	22,531	109%	▲		
Economic Services	12,345	108%	▲		
Other Property and Services	67,345	179%	▲	Permanent	Private works - Seal Lake Thetis Road
Operating Expenses					
Governance	7,751	98%	▲		
General Purpose Funding	6,904	94%	▲		
Law, Order & Public Safety	(17,757)	102%	▼		
Health	5,342	97%	▲		
Education and Welfare	3,666	90%	▲		
Community Ammenities	47,792	96%	▲		
Recreation and Culture	152,926	92%	▲		
Transport	(8,033)	100%	▼		
Economic Services	38,045	91%	▲		
Other Property and Services	48,937	61%	▲	Permanent	Private works - Seal Lake Thetis Road



COMMERCIAL IN CONFIDENCE

15 February 2021

The CEO
Shire of Dandaragan
PO Box 676
JURIEN BAY WA 6516

Attention: Mr Brent Bailey

Dear Sir

RE: TURQUOISE COAST TRAIL – HILL RIVER BRIDGE UPDATE

Further to our recent discussions we would like to provide you with a summary of the current position with respect to the construction of the Hill River bridge on the Turquoise Coast Trail, which is a State Government grant funded project under the Regional Economic Development Scheme (REDS).

Three tenders were received and considered by the Chamber which emanated from bidders who are considered domiciled within the Shire of Dandaragan locale.

The construction and installation of the proposed bridge is ideally timed to commence immediately following the Easter school holidays in late April 2021.



PO Box 753 Jurien Bay WA 6516
email. chamber@jurienbay.net

The Jurien Bay Chamber of Commerce has insufficient bank funds to fund the shortfall, especially if the contingency is required and expended, so it is not currently able to award a contract for the works.

The following shortfall funding options have been considered, and dismissed:

1. Borrow the remaining funds – the Chamber has no collateral to secure a bank loan and limited sources of funds at its disposal to repay based on a membership base of 40 members paying \$100 per year.
2. Crowd-funding – time consuming and high administration costs to process, with an unknown chance of success.
3. Wheatbelt Development Commission – a follow up with Grant Arthur and Dan Waterhouse about the possibility of funds not being used by other REDS grant recipients was not met with an encouraging response.

To be able to comply with REDS Grant Agreement conditions, works should not be unduly delayed.

The Chamber is therefore seeking Shire assistance to jointly fund the shortfall on this community asset with ratepayer funds, on the following basis:

- A. Cash payment of \$7,018 (ex. GST) payable at the Contract Award Date.
- B. Provision be made for a further payment of up to \$15,000 (ex. GST) for 50% of any variation to the Contract, only if required and properly certified as a bone fide variation to the Contract by the Contract supervisor (The Civil Group). The Jurien Bay Chamber of Commerce will contribute the balance of the variation amount.
- C. A short term interest free loan of up to \$35,100 to cover the GST on the total contract amount, repayable by the Chamber upon receipt of returned funds from the Australian Taxation Office.

The Chamber is already bound to provide a full acquittal to the WA Government on the \$100,000 REDS grant and will do the same for the Shire of Dandaragan to ensure full transparency is maintained throughout the Contract.

We understand a decision by Council is required for the accession of this request at the February Shire Council meeting and the Chamber is prepared to assist through the provision of any further information that would be required by Councillors to make their decision.





PO Box 753 Jurien Bay WA 6516
email. chamber@jurienbay.net

In closing, given the multiple contributors to this project, we would very much prefer not to hand the REDS grant money back and not proceed with the project at this time. The construction of the bridge is crucial to making a case for funding the balance of the Turquoise Way trail to Cervantes.

We look forward to discussing this matter with you further at your earliest convenience.

Yours faithfully

A handwritten signature in black ink, appearing to read "C. Strugnell", is written over a faint, light-colored circular stamp or watermark.

Clinton Strugnell
Chair
Jurien Bay Chamber of Commerce Inc.



COMMERCIAL IN CONFIDENCE



Environmental Assessment

Coalara Feedlot Development – “Sendem Downs”



Prepared by Sustainable Beef Systems Pty Ltd

11 December, 2020

Development Proponents:

Central Stockcare Pty Ltd

Coalara Feedlot, “Sendem Downs”, 2530 Coalara Road, Badgingarra,
WA

██████████
██
██
██

Coalara Feedlot Document Control

Project code: 20200730
Issued by: Dean Ryan
Date of Final Doc: 11 December 2020
File Name: CoalaraEA2019Rev0

Disclaimer

Care is taken to ensure the accuracy of the information contained in this document. However, SBS has been supplied with certain information by the proponent and therefore does not accept responsibility for the accuracy or completeness of information contained in the document.

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Abstract

This Environmental Assessment is the principle document in support of a proposal by Central Stockcare Pty Ltd (CSC hereon) to establish an 8000 'Standard Cattle Units' (SCU hereon) feedlot on the property "Sendem Downs", 2530 Coalara Rd, Badgingarra, Western Australia.

This assessment addresses the Department of Water and Environmental Regulations 1987 (DWER) requirements in respect of licencing and the works approval application to gain necessary approvals and licences to construct and operate a feedlot on the "Sendem Downs" property. The feedlot will be named "COALARA Feedlot".

The climate and physical assets of the site were found to be suitable to sustain a feedlot of the scale proposed by the proponent.

The proponent has been issued a DWER groundwater licence to take 2,250,950kL from the Jurien Perth – Leederville - Parmelia resource.

The groundwater licence number is GWL205125(1) and authorises, among other things, the activity of intensive stockwatering and dust suppression for earthworks and construction purposes.

The proponent is lodging a Works Approval Application seeking a Works Approval under the following category of the EP Act 1986:

- Category 68 – Cattle feedlots; 500+ head and more than 100 m from watercourse

The proponent seeks Works Approval for a staged development over 60 months (5 years).

At the completion of construction of each stage and having achieved compliance with the Works Approval, the proponent will seek an operating licence under EP Regulation 1987, Category 68, to operate the facility at the capacity of the completed stage. The staging proposal is:

- Stage 1: Licence to stand up to 4,000 SCU in 24 months from Works Approval
- Stage 2: Licence to stand up to 6,000 SCU in 36 months from Works Approval
- Stage 3: Licence to stand up to 8,000 SCU in 60 months from Works Approval

The proponent proposes exemption from licencing under the following category of the EP Act 1986:

- Category 67A – Commercial compost or blended soil; 1000+ tonnes stored on premises

The proponent has sufficient crop land on the premises and associated adjoining agricultural holdings to sustainably utilise all manure/compost produced in the feedlot operations. No sales of manure or compost will be necessary to sustain the feedlot operations. Therefore, "commercial" quantities of manure or compost will not apply to the premises even though it is calculated that the design capacity of the category will be exceeded.

Executive summary

This Environmental Assessment is the principle document in support of a proposal by Central Stockcare Pty Ltd (CSC hereon) to establish an 8,000 SCU feedlot on the property "Sendem Downs", 2530 Coalara Rd, Badgingarra, Western Australia.

This assessment addresses the Department of Water and Environmental Regulation (DWER) requirements in respect of licencing and works approvals to gain necessary approvals and licences to construct and operate a feedlot on the "Sendem Downs" property.

A significant number of alternative properties and existing feedlots were considered by CSC prior to settling on developing a proposal for a feedlot on the "Sendem Downs" property.

The climate and physical assets of the site were assessed by soil, water and feedlot operation experts and the site was found to be suitable to sustain a feedlot of the scale proposed by the proponent. The remoteness of the site with large separation distance to receptors made the assessment of environmental defensibility less complex than for many other feedlot developments.

The original proposed site for the feedlot was set 200 metres to the south of the layout detailed in this Environmental Assessment (EA hereon). Based on research conducted in the construction of 6 soil pits on the proposed premises, the feedlot feedyard footprint was moved to the north, and length of rows was reduced, to avoid areas of sand revealed in test pits 1 & 2. All other test pits encountered solid subgrade at less than 1.2 metres.

Possible impacts of the feedlot were modelled and mitigations to meet current guidelines and regulations were developed where relevant and as required.

Matters of significant environmental importance considered in the process of this assessment were:

- Proximity to neighbours
- Risk to groundwater

The features of the selected site deliver natural defensibility for several key areas of potential environmental hazard. Consequently, this Environmental Assessment does not labour the point for low-risk aspects of the proposed development.

A beef feedlot is a beef (meat) supply management system designed to take the cropland energy and protein harvested in two (2) months of the year (November and December in Australia) and meter that nutrient out over the other ten (10) months of the year. The system delivers thriving cattle at optimal age for slaughter that produce repeatable, high eating quality meat all year around.

The primary purpose of this feedlot will be for growing and finishing prime beef cattle for slaughter in Western Australia. A feedlot of this size will generate gross sales exceeding \$50m/annum and value-add cattle and feedstuff produced in WA. Thirteen (13) people will be directly employed on a fulltime basis. Research indicates that the multiplier effect of a feedlot business on a state basis has been estimated at 3.8 to 1 for value-add and 5.6 to 1 for employment. Therefore, the feedlot will directly and indirectly create 73 jobs and generate turnover of \$190m/annum for the state of Western Australia.

Approximately \$12m of feedstuffs will be required per annum most of which will be produced in the local area.

Approximately \$30m of feeder cattle will be required per annum. All these cattle will be sourced in Western Australia.

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1 Introduction

1.1 Background

Central Stockcare Pty Ltd (CSC) is the owner of the property “Sendem Downs”. The property is 3035 hectares in area and is located 25 kilometres as the crow flies to the north-east of Badgingarra WA.

CSC operated a beef feedlot on the property “Springfield” in the Gingin Shire WA for more than 10 years. “Springfield” was sold to mining interests in 2019. CSC reached agreement to lease back the feedlot on “Springfield” from the mining company for a limited period.

CSC have planned to expand beef cattle feeding operations to produce slaughter cattle over the past 2 years and to that end commenced the search for a suitable feedlot site in 2018. Several properties and existing feedlots were considered prior to CSC settling on a location within the “Sendem Downs” property as the selected site for a feedlot development.

The proponent has retained the services of the consultant to design the feedlot and generate the documents required to gain approval to construct and operate the feedlot. The consultant has significant experience in the industry and the credentials of the officers of the consultant are listed in Appendix 1. The proponent has consulted widely with the Shire of Dandaragan officers and representatives of the key government agencies to generate the documentation required to gain approval for the development.

1.2 Applicant and property details

The details of the applicant are listed below and detailed in the ASIC registration in Appendix 15.

Name:	Central Stockcare Pty Ltd as Trustee for The Ryan Family Trust
ABN:	67 548 177 945
Property:	“Sendem Downs”
Address:	2530 Coalara Rd, Badgingarra, Western Australia

The land details on which the development is proposed are listed below and illustrated in Figure 2: Development site land area identification.

Premises Land Area:	15,497,886 m ² (1,550 hectares)
Shire Area:	Shire of Dandaragan
Locality:	BOOTHENDARRA
Land District:	Victoria
Lot:	10331
Deposit Plan:	206634

The central point GPS reference of the feedyard development is:

Zone: 50 J	Easting:	381605.02 m E
	Northing:	6654285.60 m S

The site elevation is:

Highest elevation:	300 m
Lowest elevation:	270 m

The applicants postal address and email are listed below.

Postal Address: "Echuca", Lot 43, Stock Road, BULLSBROOK, WA 6084
 Email Address: admin@centralstockcare.com
 Telephone: 08 95712946

The feedlot will be located on the northern half of the 3,035hectare "Sendem Downs" Property. The premises will be on the eastern side of the Coalara Road and the northern side of the Boothendarra Road. The subject land is currently zoned 'Rural' in accordance with the Shire of Dandaragan Town Planning Scheme. Beef cattle lot-feeding is permitted within this zone.

The area to the north, south and east is zoned Parks and Recreation (Watheroo National Park). Immediately to the west of the proposed site land is zoned "Rural".

1.3 Objectives of the development

The primary purpose of the feedlot will be for growing and finishing prime beef cattle for slaughter in Australia to be consumed on local and export markets.

A feedlot of this size will generate gross sales of more than \$40m/annum and value add cattle and feedstuff produced in WA. Thirteen (13) people will be directly employed on a fulltime basis. Research indicates that the multiplier effect of a feedlot business on a state basis has been estimated at 3.8 to 1 for value add and 5.6 for employment. (Yates, Sparke, Morison & Hughes 2002) Therefore, the feedlot will directly and indirectly create 73 jobs and generate additional economic activity of \$190m/annum in the State of Western Australia.

1.4 Feedlot site options considered and final selection

The proponent has fed cattle on the property "Springfield" at Gingin for 11 years. Experience gained at the Gingin feedlot has allowed the proponent to succinctly define the site and situation requirements for the new Central Stockcare (CSC hereon) operation.

Options considered prior to settling on Sendem Downs as the most suitable development site for CSC are listed below.

- Upgrade of "Springfield" feedlot to 8000 SCU – the maximum potential development capacity was deemed too small.
- Kalimpa Park Feedlot, Warradarge WA – constructed feedyard surfaces appeared to be not in accordance with The Guidelines or best practice.
- Mirambee Feedlot, Dubbo NSW – moving interstate did not best suit the business model.

1.5 Current land-use on Sendem Downs

The land on which the feedlot development is proposed is currently used for dryland cereal grain cropping, beef cattle breeder grazing on pasture and backgrounding of trade & live export cattle.

The Sendem Downs property contains a rural residence and associated farm infrastructure appropriate to current farming and grazing activity. The defined premises land area proposed

for the development (a sub-set area of Sendem Downs) has no rural residence and virtually no infrastructure, except for stock water supply and water tanks.

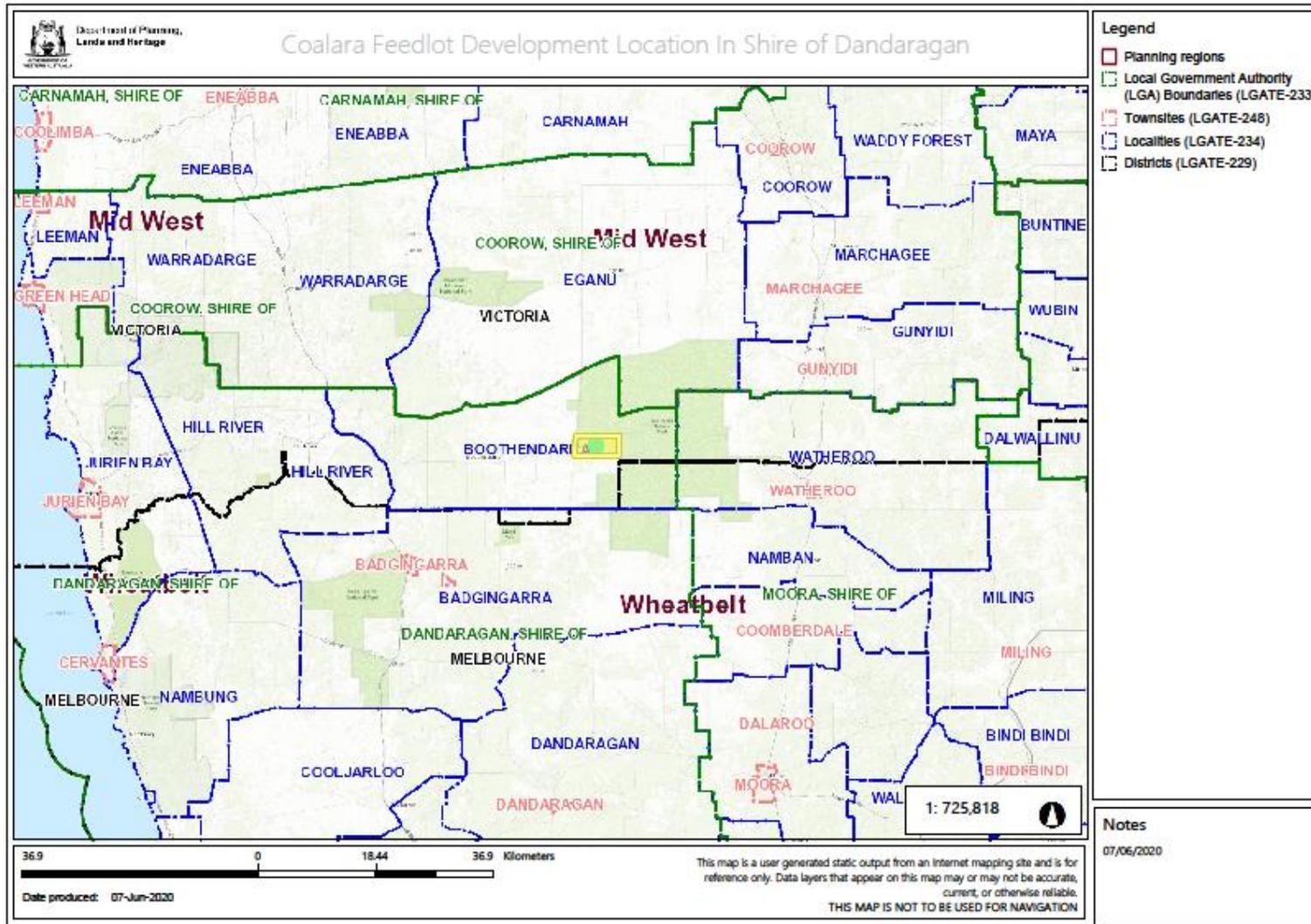


Figure 1: Proposed feedlot development locality

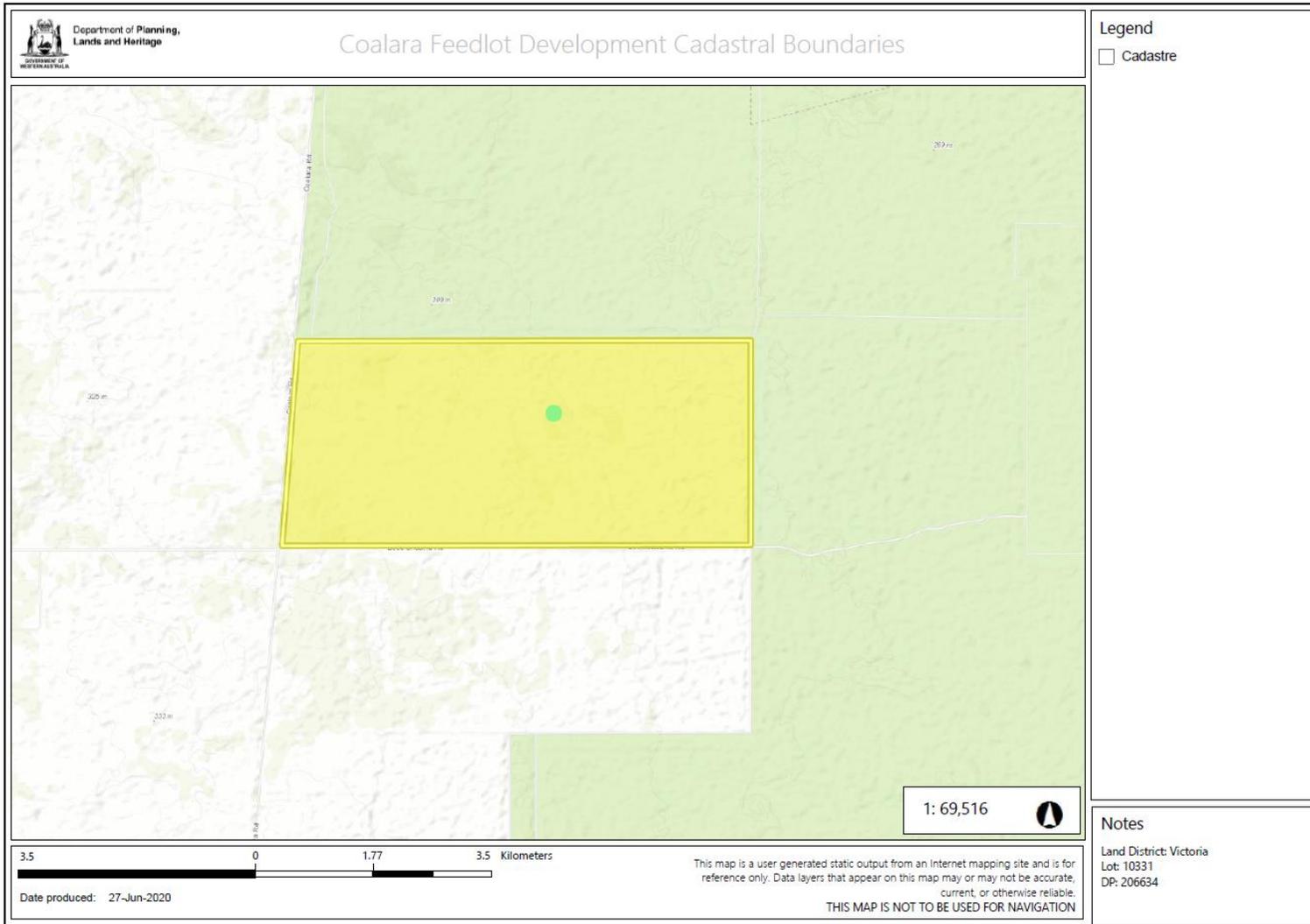


Figure 2: Development site land area identification

1.6 State & Local Government consultation

The proponent met with officers of the Shire of Dandaragan (SOD hereon) on 24 May 2019.

Those in attendance at the meeting were Brent Bailey CEO – Shire of Dandaragan, David Chidlow (Manager Planning SOD), Rory Mackay (Planning Officer SOD), Dean Ryan CSC and Peter Paradise SBS.

The scope of the proposal was outlined to the meeting and advice was sought on processes and procedures to be followed to have the development assessed and reach a decision for approval or otherwise.

The proponent advised Shire officers that the scale of the proposed feedlot development was 6,000 SCU (this was increased to 8,000 SCU by the proponent after this initial meeting) with a capital development budget of more than \$2m but less than \$10m.

Officers advised that on this basis the Shire of Dandaragan may decide the matter or refer it to a Joint Development Application Process which would be made up of the appropriate council officers and 3 to 4 invited experts in beef cattle feedlots.

The proposed feedlot site is in a location which falls under Category 68 of the Department of Water and Environmental Regulation (DWER hereon) Environmental Protection Regulations 1987 covering feedlots greater than 500 SCU with a greater distance than 100 metres from a defined watercourse.

Shire of Dandaragan will refer the proposal to other agencies for advice. The primary State Government referral bodies are:

- Department of Water and Environmental Regulation;
- Environmental Protection Authority;
- Department of Biodiversity, Conservation and Attractions;
- Department of Health; and
- Department of Primary Industries and Regional Development.

In addition to the meeting with officers of the Shire of Dandaragan (outline above) a feedlot scoping meeting (on Zoom due to Covid19) for the Coalara Feedlot was held by CSC representatives with Officers of DPIRD and the Wheatbelt Development Commission. Details of the meeting are tabled below.

Attendees to the meeting at Midday on 1st April 2020 were:

Claire Coffey – Development Officer - DPIRD
 Pat Page – Feedlot Specialist – Development Officer - DPIRD
 Daniel Waterhouse – Senior Regional Officer - Wheatbelt Development Commission
 Dean Ryan – CSC principal and proponent of Coalara Feedlot
 Peter Paradise – SBS feedlot advisory services

The participants exchanged contact details.

Key contacts to assist with Feedlot Development processes in DWER were identified. The key person in the feedlot area was identified as Caron Goodbourn – Manager, Process Industries, Regulatory Services, Bunbury.

Dean Ryan outlined the feedlot proposal and the scale and scope of the Coalara Feedlot development. The meeting was advised that the feedlot development was to be a maximum of 8000 SCU's.

DR outlined that the development would be staged with the initial establishment of 2 to 4000 SCU in stage 1, 6000 SCU in stage 2 and 8000 SCU in stage 3.

Site characteristics, general feedlot layout, cattle shade, milling options and the feed production irrigation element of the business model were outlined.

Claire Coffey of DPIRD outlined the process of completion of a Works Approval Application to DWER and the elements required to gain approval.

It was noted that an Environmental Assessment would be required and that the Environmental Assessment should be framed and informed by the requirements of the Works Approval Application form.

DPIRD advised that the Works Approval Application form had been recently updated and that the revision dated April 2020 form IR F09 was the appropriate form to complete.

Utilisation/disposal of the wastewater effluent was discussed. DPIRD advised that for the chosen site, evaporation ponds were the preferred effluent disposal option.

DPIRD outlined at length the key requirement to ensure that the evaporation ponds were lined with clay or an artificial liner to meet the National Feedlot Guideline Standards for infiltration of 1×10^{-9} m/s.

Options to achieve this objective were discussed in detail.

DPIRD advised that, if a pre-lodgement meeting was arranged with DWER to go through all the documentation and if all elements were covered, then the time from lodgement to completion of Departmental assessment would be 60 working days. Claire Coffee offered to email the key contact details in DWER to the proponent.

The proponent initiated and attended an online, pre-lodgement meeting with DWER and DPIRD representatives on 5th November 2020.

2 The application process

2.1 Documentation requirements

Environmental assessment documentation is framed by the DWER publications “Guidance statements – Decision-making” and “Guidance statements - Risk Assessments”. It is noted in guidance documentation that the DWER considers the National Guidelines for Beef Cattle Feedlot in Australia (MLA 2012) and the National Beef Cattle Feedlot Environmental Code of Practice (MLA 2012) are the most appropriate guidelines to inform its assessment of feedlot development applications.

This environmental assessment uses these documents to address the primary elements requiring explanation for the proposed development. In addition, the listed elements in the DWER Works Approval Application guided the format and layout of this environmental assessment document.

2.2 State regulations relevant to feedlot development

The Western Australian Government has streamlined its planning instruments in recent years. The primary regulations relating to feedlot developments are now:

- Environmental Protection Act 1986 (EP Act hereon)
- Environmental Protection Regulations 1987 (EP Regulations hereon)

The DWER EP Regulations schedule under which the feedlot operation falls is defined in the following Act:

- Rights in Water and Irrigation Act 1914.

Other Acts may be relevant however in addressing the requirements of the Acts listed above the requirements of other State law will be met.

2.2 Works Approval, Registration and Licence

Following approval and prior to commencement of the development, DWER will issue a works approval for construction, a registration of development and, after construction of works to the certified standards, a licence to operate under part V of the EP Act 1986.

3 Proposed feedlot development description

The feedlot will generally be constructed in accordance with the key industry guidelines:

- National Guidelines for Beef Cattle Feedlots in Australia 3rd ed (MLA 2012)
- National Beef Cattle Feedlot Environmental Code of Practice 2nd ed (MLA 2012)

3.1 Scope, size and scale of proposed feedlot development

Listed below are the general specifications for the Coalara Feedlot.

- 8,000 standard cattle units (SCU) (maximum design capacity)
- Stocking density 10.8 m²/SCU (maximum stocking density)
- Approximately northwest-southeast row alignment @333°
- Terraced layout with cut and fill to create effective drainage
- Head to toe feed alley-drainage configuration
- Approx. 3.0% "in pen" slope from bunk-line to drainage lines
- Approx. 0.5% to 1.0% south to north fall in drain reserve and feed roads

3.2 Staged development of the proposed feedlot

It is proposed that the development will take place in stages. The 3 stages of development are listed below and depicted in Appendix 2.

- **Stage 1** – Set up stock water supply, access roads, earthworks for 32 pens (2 rows) and construction (erection) of 32 pens (A & B Rows including all bunks, feedroads, cattle alleys, drains, 3 sed basins and stage 1 effluent holding pond.). Cattle receival-dispatch facilities will be constructed. A mill area concrete pad will be laid on the edge of where the Stage 3 shed will eventually stand. Silos, mill equipment and mobile plant will be relocated from Springfield to Sendem Downs. Facilities to feed up to 4,000 SCU will be established. Shade will be erected.
- **Stage 2** – Civil works, water supply extensions and erections for another 16 pens (C Row) will be undertaken including shade. The feedlot stocking capacity will be expanded to 6,000 SCU. Stage 2 effluent pond and stage 2 manure pad will be constructed.
- **Stage 3** – Civil works, water supply extensions and erections for another 16 pens (D Row) will be completed. Stocking capacity will be expanded to 8,000 SCU. Tempering configuration will be established for the mill and a commodity shed including bays will be constructed. Shade structures will be set up in feedlot feeding pens as construction of each row is completed.

The proposed staged development time frames are detailed below.

- Stage 1 – To be completed by 24 months from approval
- Stage 2 – To be completed by 12 months from completion of Stage 1
- Stage 3 – To be completed by 24 months from completion of Stage 2

Conceptual layouts of the staged development and the final feedlot are detailed in Appendix 2.

3.3 Pens and drainage layout

- The 8,000 SCU feedlot will be laid out in 4 rows using a terraced configuration in accordance with the National Guidelines for Beef Cattle Feedlot in Australia 2012 (The Guidelines hereon), page 3, Figure 1.1.
- Appendix 2 tables conceptual design for the feedlot in accordance with The Guidelines.
- The alignment of the rows of pens detailed in Appendix 2 will be pushed as far as achievable to a north-south alignment based on the information supplied by the detailed survey.

3.4 Earthworks, borrow pits and ponds

- Topsoil will be stripped from the development site and stockpiled.
- All slopes in the controlled drainage area will be constructed by either cut or fill.
- Pen & yard surfaces and cattle alleys will be capped and compacted at optimum moisture with local subgrade materials to achieve the prescribed standards. The clay material analysed and reported in Appendix 8 will be used without fortification in construction of most of the “dry” surfaces around the feedyard. The material will be applied by elevating scrapers in a series of 150mm layers to achieve 95% standard compaction at optimum moisture ($\pm 2\%$) added by watercart. The Guidelines (page 57) state that “Because of the formation of a low permeability soil-manure interface layer, clay lining is not generally required for feedlot pen and yard areas.” In this respect the development will exceed the prescription in The Guidelines.
- Clay materials, located in the vicinity of the development and designated for use in construction of the facility have been tested against The Guideline recommended infiltration limit of 1×10^{-9} m/s for effluent catch drains, sedimentation basins, holding pond floors and manure storage. Clay Pit 1 subgrade material as tested achieved 7.941×10^{-9} m/s (Appendix 8) and subsequent testing with bentonite addition indicates it is possible to fortify the local clay to meet The Guidelines for the “wet” surfaces in the development. The material will be applied by elevating scrapers in a series of 150mm layers, tined and compacted to achieve the required standard compaction (to achieve required permeability of 1mm/day) at optimum moisture ($\pm 2\%$). Water will be added as required by watercart.
- The holding pond natural subgrade is not expected to yield material suitable for use as a geotechnical seal for drains and ponds for the development. It is expected that material for sealing the key surfaces of the development will be borrowed from an area to the north or west of the feedlot site. The material will be applied by elevating scrapers in a series of 150mm layers, tined and compacted to achieve the required standard compaction (to achieve required permeability) at optimum moisture ($\pm 2\%$). Water will be added as required by watercart. If the guideline rate of infiltration of 1×10^{-9} m/s cannot be achieved with local clay (with or without bentonite additions), then a polymer plastic seal will be used to line the holding pond floors.

3.5 Feedroad, bunkline and manure haulage

- Roads and feed alleys will be constructed in accordance with the local council standards for gravel roads and of similar material to that used in construction of the Coalara Road.
- Maximum load vehicle traffic will be 20 tonne (loaded) delivery wagon with dual wheels. The wagon will be tractor drawn.
- Feed wagon turning circles at the south of the feedyard will be gravelled and the cattle alley crossing areas will be concreted.
- There will be a 30m gap between the last pen and cross cattle alley to the north of yards to allow for the feed alley turning circle.
- There will be 1920 m bunk length for the feedyard proper + arrival/dispatch + hospital pens = 2064m.
- The feedroad configuration will be up and back feeding alley roadway – with end of row turning circles.
- Manure trucks will access cattle alleys from the south entering the cattle alley behind the southern end of each top pen (A1 etc.). Trucks will park in the cattle alley and be loaded over the pen fence with front end loader.
- The loaded manure trucks will progress to the north (assisted by the 0.75% slope and exit the alley immediately south of the lowest pen in each run (ie A16). There will be a recessed fence line for 5 metres before the southern exit truck gate which will open into the turning circle reserve.

3.6 Water supply, troughs and trough wastewater

- Water will be supplied to the feedlot from the irrigation production bore (SDPB1 noted in Appendix 2) at a rate of 16 L/s. The backup stock bore with the capacity to deliver at least 6 - 15 litres/second will be constructed close to the main tank storage. The bores will be linked so that either one or the other can be used to push water through the main delivery line to the storage tanks.
- At full capacity of 8,000 SCU, the main bore will run for up to 6 hours per day to deliver the required water.
- In peak summer demand periods' the main bore will need to run for 8.25 hours per day to keep up with demand. In the case of the main production bore continuously supplying irrigation water the stock bore will need to run from 9 – 22 hours per day to supply water to the cattle.
- CSC has been issued a licence to take 2,250,950kL of groundwater from the PLP aquifer for irrigation, intensive stockwatering, dust suppression and (extensive) stock watering. The 5C groundwater licence is Instrument No. GWL205125(1).
- 2 X 150,000litre steel water tanks will be constructed on an earthen mound to provide at least 7 metres of head to the troughs at the highest altitude.
- All water troughs will be gravity fed with a minimum flow rate to each trough of 0.6 litres per second. A pressure pump may be fitted to deliver water at a rate of up to 0.7 litres per second for peak hourly demand that may be experienced in summer.
- Underground drain lines will join single drainage line angled from directly below the highest trough in each row (ei A1) to exit in line with the edge of the cattle alley line. (This angle will give more fall to the drain line than 0.5%.) Piping will be configured to ensure the ability to pressure flush the wastewater lines by opening valves at the south end of each row.
- The overflow and trough flush wastewater flows will exit to the north end of the feedlot rows to join a main waste pipeline flowing east at 3% fall into the sedimentation basins.

3.7 Row configurations

- The feedlot layout is tabled in Appendix 2.
- There will be four rows - designated A to D.
- The standard row configuration will be 16 pens x 30m bunk x 45m deep = 480 metres of bunkline per row.

3.8 Shade in cattle pens

- Shade (3 m²/SCU) will be provided in all cattle feeding pens.
- It is planned to installed shade at each stage of development or soon after the completion of each row of pens.

3.9 Dust control

- Provision for dust control will be with a water cannon mounted on a semi-trailer traversing cattle alleys. Feed alley dust will be controlled with a mobile tanker with spraybar.
- Sprinklers will be mounted on the perimeter of the processing barn to suppress dust in high traffic areas around receival/dispatch area.
- Only fresh water from the licence bores will be used in dust suppression activities.

3.10 Hospital facility

- Space will be left for a future hospital facility and chute to be located at the back of the 2 hospital pens in Receival/Dispatch row.
- Hospital facility will consist of 2 feed pens with shade cover.
- Receival & dispatch processing operations will be covered by a shed with design for good airflow in summer and ability to close it up in winter.

3.11 Processing shed

- The processing shed and "supply and take" races and holding pens will incorporate a 4-way sort.
- The cattle processing chute will be set up with minimum capacity for induction of 100 SCU per hour.

3.12 Arrival and dispatch

- An over and under dispatch ramp will be constructed for arrivals and loadouts.
- Cattle trucks for unloading and dispatch will line up looking WSW.
- The trucking area will have provision for B/D backloading, road trains and side loading/unloading configurations.
- Truck turning area will be an area of about 100m X 100m.
- Truck turning area will be gravel sealed to local road surface all weather standard.
- The processing shed will be located to the north-east of the over and under ramp.
- Arrival and dispatch will be connected to pens with bunk lines in the vicinity to the north of the processing barn.

3.13 Feedmill

- The feedlot feedmill will be used to manufacture or process animal feed only for use on the premises and therefore prescribed premises Category 23 does not apply to this application.

- As a principle the company plans to use as much existing infrastructure and mobile plant as possible. Grain storage and mill elements and mobile plant will be moved from the existing feedlot on the property “Springfield” at Gingin to “Sendem Downs”.
- The mill will be set up at the south west corner of the feedlot pens. Feedroads will feed in from the southern end of the feedpens with turning circles at the north end of pen rows.
- At normal operating capacity in Stage 3 of the development (80% of 8,000 SCU) the feedmill will process approximately 64 tonnes of grain per day as a sub-set of 84 tonnes of mixed ration delivered to cattle.
- Appendix 14 details a conceptual layout for the feedmill.
- Grain receipt will be via a drive-over, flatbed grain dump. Grain will transfer to enclosed elevators and thence to silo storage.
- A negative pressure, fully enclosed grain scalper and aspirator will extract large particles and condense dust in the grain cleaning process. Minimal dust emission will emanate from grain cleaning.
- All augers and elevators are fully enclosed facilitating minimal dust emissions.
- Grain processing will initially be setup for dry rolling in stage 1 and developed over time to a tempering system in stage 3.
- Grain will be processed through a new generation, electrically powered, side roll mill with low noise generation.
- Lupins will be received, stored and processed as for cereal grain.
- Premix pellets will be used to deliver micro elements to the cattle rations. Pellets will be inload in the grain receipt system and delivered direct to storage silos via enclosed elevators.
- In the outloading sector of the mill, augers from the “prepared ingredient” detention silos will be used to transfer the stored ingredients of grain, lupins and pellets to a batch bin before being conveyed to the ration mixer wagon.
- Hay and straw required for the fibre component of the ration will be cut to the specified chop length in the bale pressing process at the time of haymaking. This will remove the need for hay processing at the feedmill which can be dusty and noisy work.
- The feedmill concept is to provide a quiet and clean work environment on the premises. The closest neighbouring receptor residence is at a distance of 6 kilometres and was unoccupied at the time of writing this assessment).

3.14 Mobile plant and equipment

- Feed ingredients will be marshalled in silos from which they are transferred by auger into the batch bin and then the feed mixer. High fibre ingredients will be added with a front-end loader prior to loading with concentrates.
- Feed will be mixed and delivered to the feed-bunks in a mobile tractor drawn feed mixer wagon – mobile mixing bin (existing CSC plant).

3.15 Office & weighbridge facilities

The office and weighbridge will be located on the feedlot access road. (See location in Appendix 2.)

All traffic, coming and going will pass the office either across the weighbridge or via the pass lane.

The office and weighbridge will have the following features.

- The office will be a prefab ex-mining admin building but will be set up on piers to be elevated to a second story level. Operations will be on the second floor as per a grain testing stand with an open deck and offices.
- The operations floor of the building will have an office, a meeting room and a reception-laboratory room where clerical functions and commodity testing can take place.
- The ground floor will comprise a storeroom for holding stocks of vet chemicals, tags and other supplies awaiting issue to operational centres.
- The office will have a safety fenced veranda standing beside the weighbridge so that top deck cattle can be seen coming and going and grain/commodity trucks, once un-tarped can be visually assess from the office bridge control deck.
- An auto-spear grain tester will be installed above the weighbridge so that operators do not need to mount the trucks to take grain samples.
- All office weigh operations will be linked to a weighbridge computer program to be integrated with the feedlot program. The road configuration passing the office will be set up in such a way, that in the future, electronically controlled barrier gate/s could be effectively installed if it is determined that such a control was required.

4 Feedlot management

CSC is committed to gaining accreditation under the AUS-MEAT administered National Feedlot Accreditation Scheme (NFAS hereon). The requirements of this accreditation will inform and frame the management systems of the feedlot.

4.1 Livestock

Purchased feeder cattle will be inspected on receipt for fitness to specification and health.

Cattle will be visually identified with an eartag with linkage to National Livestock Identification System (NLIS) button and inducted according to the beef production program specifications supplied by the destination customer.

Cattle will be grouped into feeding lots and initially started on high fibre rations, transitioning over 3 weeks to a nutrient dense finisher ration. Rations are prepared and fed daily according to the appetite of the pens lots on feed.

Cattle are inspected daily for animal health. Sick or injured cattle are removed and treated according to ailment. Cattle in unrecoverable distress will be euthanised under the instruction of the feedlot manager as soon as detected.

4.2 Animal welfare

Appendix 9 details the Animal Care Statement (ACS hereon) for the Coalara Feedlot.

The ACS is derived from the requirements of the relevant DPI Animal Welfare Code of Practice - Cattle (2004) as published by CSIRO.

Animal welfare on the site will be managed in accordance with the attached ACS which is an integral component of the independently audited NFAS accreditation.

It is expected that the business will experience 100 head of deaths per annum which is a death rate of 0.5% on total turnover of cattle per annum. Dead cattle carcasses will be composted at the manure storage area in accordance with industry guidelines for the practice.

4.3 Feedstuff and rations

Feed rations will be generated in accordance with the National Feedlot Accreditation Scheme Standards (NFAS hereon).

Cattle are initially started on high fibre rations, transitioning over 3 weeks to a nutrient dense finisher ration. Rations are prepared and fed daily according to the demand appetite of the pen lots on feed.

4.4 Manure and pen floor management

Penned cattle excrete significant amounts of manure which accumulates on the feedlot pen floor.

Pens will be cleaned regularly and in any event in accordance with the guidelines laid out in the National Beef Cattle Feedlot Environmental Code of Practice (The Environmental Code – hereon).

Manure management is discussed in more detail in Section 6.

4.5 Effluent

Runoff effluent from all manured surfaces and trough wastewater is contained within the controlled drainage area. All effluent is directed to the sedimentation system for settling of solids prior to transfer for storage, compost production and evaporation in the main holding ponds.

4.6 Heat risk analysis and managing heat load

The Coalara feedlot will be constructed and operated as an industry Class 1 feedlot.

The standard cattle to be fed at Coalara feedlot will have a pre-mitigation heat load threshold rating of 86. With the mitigations of wet manure removal, heat load rations and deployment of extra water troughs the standard cattle fed at Coalara will gain a heat load threshold of 91.

The MLA Cattle Heat Load Toolbox for Morawa WA found that with mitigations of wet manure removal, use of heat rations and deployment of extra troughs the frequency of extreme heat events fell to 0 days of extreme risk in a 22year period. This risk ranking falls in the zone of acceptable risk for the operation of a feedlot for the selected cattle types to be fed at this feedlot.

The MLA “Cattle Heat Load Toolbox” risk assessment for the site is tabled in Appendix 10.

4.7 Power & Energy

Electricity to the feedlot will be provided by a diesel fuelled generator. Electricity supply will be required to enable water pumping, feed preparation and handling on the site. Electricity will also be required for provision of power and light in buildings and ancillary structures on the site.

Electricity will be provided to the existing farm shed on the eastern side of the property. Diesel fuel will be utilised by machinery used in and around the feedlot, such as vehicles, feed trucks, tractors, loaders and scrapers (during construction).

The economics of solar panel energy capture as a boost to power requirements will be investigated during the development of the feedlot. The technology will be adopted and applied if and as it makes good economic sense.

5 Existing environment

A search of the WA Department of Planning, Lands and Heritage provided the information listed in Section 8.5 – Appendix 5.

This search did not uncover any apparent State or Local Government impediments to the development.

5.1 Climate

The feedlot site is in a Mediterranean climate zone with warm to hot dry summers and mild damp winters. The following charts and graphs inform the average monthly climate data for the Coalara Feedlot site.

Moora weather station (now closed), at 50 km distance, is/was the closest BOM station with a comprehensive data set. Evaporation rates relevant to the development site are of significant interest as the effluent disposal system is based on evaporation processes.

Historic data from Three Springs and Moora was used to derive expected “Dam Evaporation” rates for the Premises noted as “CoalaraDamEstimated” in Figure 3.

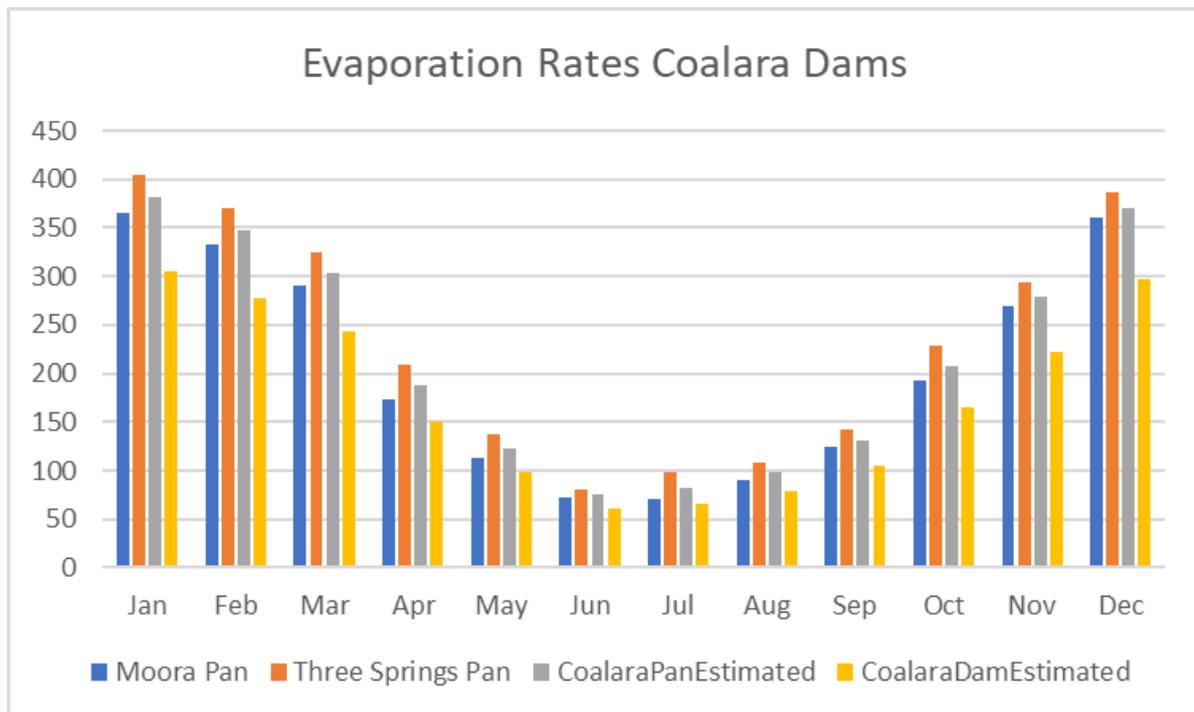


Figure 3: Monthly evaporation averages and site estimate (Source BOM data & calculations)

The following BOM charts and graphs illustrate the nature of the local climate experienced at the feedlot development site.

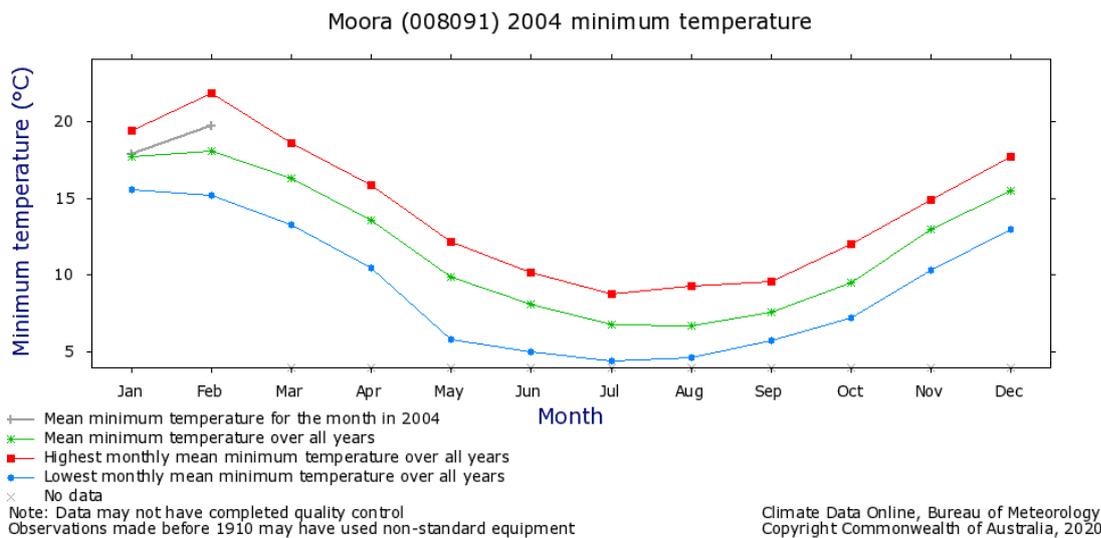
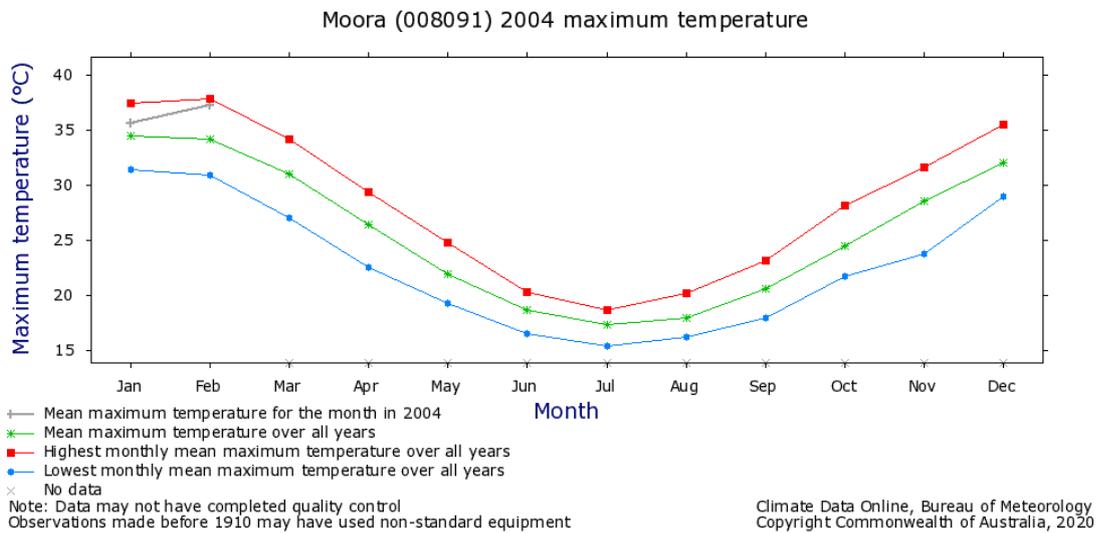
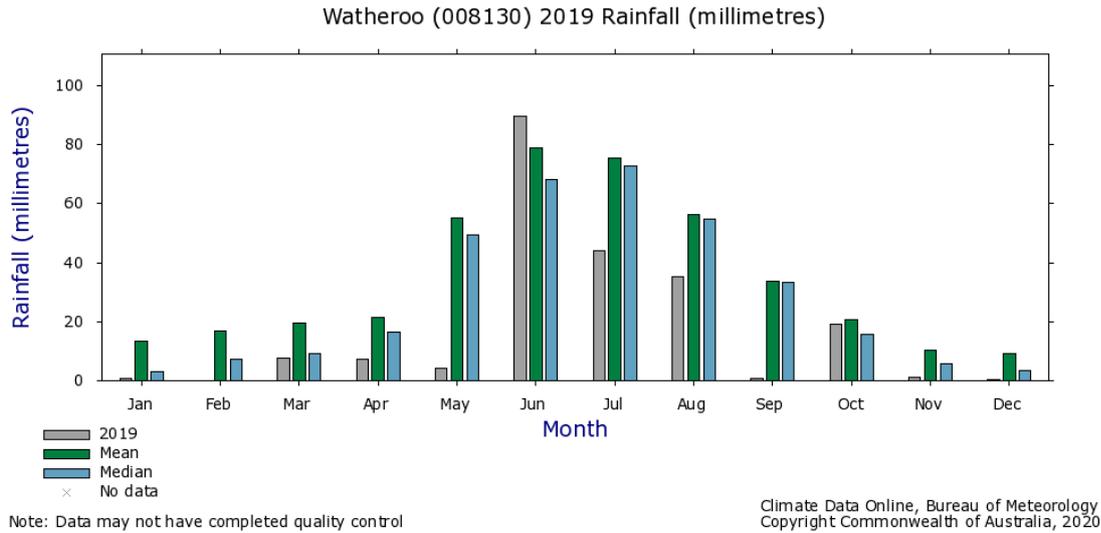


Figure 4: Long-term rainfall and temperature graphs – Watheroo & Moora

5.1.1 Temperature

Tabled below is the annual minimum and maximum temperatures for Moora from 1897 - 2004.

Maximums													
Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	34.4	34.1	31	26.4	21.9	18.7	17.3	17.9	20.6	24.5	28.5	32	25.7
Lowest	31.4	30.9	27	22.5	19.3	16.5	15.4	16.2	17.9	21.7	23.7	28.9	24
5th %ile	32.2	31.4	28.6	23.8	19.9	16.9	15.8	16.7	18.4	22	25.5	29.8	24.5
10th %ile	32.5	31.5	29.6	24.5	20.4	17.1	16.4	16.9	19.1	22.6	26.2	30.4	24.6
Median	34.2	34.2	30.8	26.4	21.6	18.8	17.4	17.9	20.6	24.4	28.8	31.7	25.7
90th %ile	36.4	36.4	32.6	27.7	24.4	20	18.4	19	22.2	26.3	30.5	34	26.6
95th %ile	36.8	37.2	33.2	29.1	24.6	20.2	18.5	19.4	22.6	26.8	31	34.6	26.6
Highest	37.4	37.8	34.1	29.4	24.8	20.3	18.7	20.2	23.1	28.1	31.6	35.5	27.2
Minimums													
Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	17.7	18.1	16.3	13.6	9.9	8.1	6.8	6.7	7.6	9.5	13	15.5	11.9
Lowest	15.6	15.2	13.3	10.5	5.8	5	4.4	4.6	5.7	7.2	10.3	13	10.8
5th %ile	15.7	15.9	14.2	11.4	8.1	5.7	4.9	4.8	6	7.6	10.7	13.7	11
10th %ile	15.9	16.3	14.9	12.3	8.3	6.8	5	5.2	6.6	8.1	11.4	14.4	11.1
Median	17.9	18.2	16.7	13.6	10.1	8.3	6.9	6.8	7.6	9.7	12.9	15.2	12.1
90th %ile	18.8	19.7	17.7	15	11.7	9.7	8.3	8	8.7	10.8	14.2	16.9	12.6
95th %ile	19	20.2	18.1	15.1	12	9.8	8.6	8.7	9.2	11.1	14.6	17.3	12.6
Highest	19.4	21.9	18.6	15.9	12.2	10.2	8.8	9.3	9.6	12	14.9	17.7	12.6

Figure 5: Moora (Station No. 008091) Temperature averages 1897 – 2004 (Source BOM data)

5.1.2 Rainfall and evaporation

The feedlot site is in the same band of rainfall and evaporation as the towns of Moora and Watheroo. 107 years of historical rainfall data from Moora, and 120 years of rainfall data from Watheroo, has been used to model expected conditions at the Coalara feedlot site.

The mean annual rainfall for Watheroo from 1899 - 2020 was 410 mm.

The 90th %ile rainfall year for Watheroo was 522mm and the 95th %ile was 577mm over the same period.

The mean annual evaporation for Moora as reported by DPIRD is 2456mm. (Luke et al. 1987)

The mean annual evaporation for Three Springs is 2781mm. (Luke et al. 1987)

Evaporation exceeds rainfall in this zone by approximately 2 metres per year.

Tabled below is the average monthly rainfall and evaporation data for Moora (1897 – 2004).

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	11	14.3	19.8	25.4	60.9	90	88.6	63.8	38.6	24.9	12.8	9.6	461.4
Lowest	0	0	0	0	0.6	21.4	21.4	8.8	4.6	0.8	0	0	203
5th %ile	0	0	0	0.9	12	39.3	41.2	24	11.3	5.4	0.1	0	306.5
10th %ile	0	0	0.3	2.8	19	44.7	46.8	31.5	16.2	6.8	0.8	0	335.5
Median	2.3	3.8	9.2	19.8	57.2	85.4	84.4	60.2	35.4	22.7	8.3	3.8	453.3
90th %ile	33.4	37.7	57.1	53	105	141.6	138.6	99.8	66.3	44.8	30.4	30.6	596.9
95th %ile	46.4	62	71.8	60.6	134.2	162.8	162.4	121.6	80	48.4	39.4	41.7	644.8
Highest	89.8	230.4	145.2	128.6	160.5	230.7	244.9	137.3	99.6	86.2	55.9	70.6	790.1
Mean Evap	366	333	291	173	113	73	70	91	124	193	269	360	2456
Net Precip	-355	-318.7	-271.2	-147.6	-52.1	17	18.6	-27.2	-85.4	-168.1	-256.2	-350.4	-1996.3
Dam Evap	289	263	229	136	89	57	55	71	97	152	212	284	1934

Figure 6: Moora (Station No. 008091) Rainfall and evaporation 1897 – 2004 (Source BOM data)

Tabled below is the average monthly rainfall data for Watheroo (1899 – 2020). There is no BOM evaporation data for Watheroo. Coalara Feedlot pond evaporation for effluent modelling has been derived using evaporation gradient differentials between Moora and Three Springs and the pan vs dam by zone information by Luke, Burke and O’Brien 1987.

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	13.3	16.7	19.4	21.5	55	78.8	75.6	56.3	33.6	20.5	10.3	9.3	410.3
Lowest	0	0	0	0	1.3	11.2	9.4	6.6	0.6	0	0	0	181.1
5th %ile	0	0	0	0.6	8.6	23.5	30.4	18.6	9.2	2	0	0	232.1
10th %ile	0	0	0	1.6	14.8	30.1	37.3	25.8	12.3	3.9	0	0	300.5
Median	3.2	7.1	9	16.6	49.5	68	72.9	54.6	33.3	15.6	5.6	3.6	
90th %ile	43.4	48.7	48.8	47.9	102.2	141	113.5	90.6	56.1	40.5	31.9	25	521.6
95th %ile	58.9	63.6	69.9	59.4	114.9	164.1	131.5	103	62.8	48.6	35	34	576.6
Highest	99.1	120.6	188.2	108	182.7	225.9	174.1	141.3	85.1	73.9	50.2	62.8	716.1

Figure 7: Watheroo (Station No. 008130) Rainfall data 1899 – 2020 (Source BOM data)

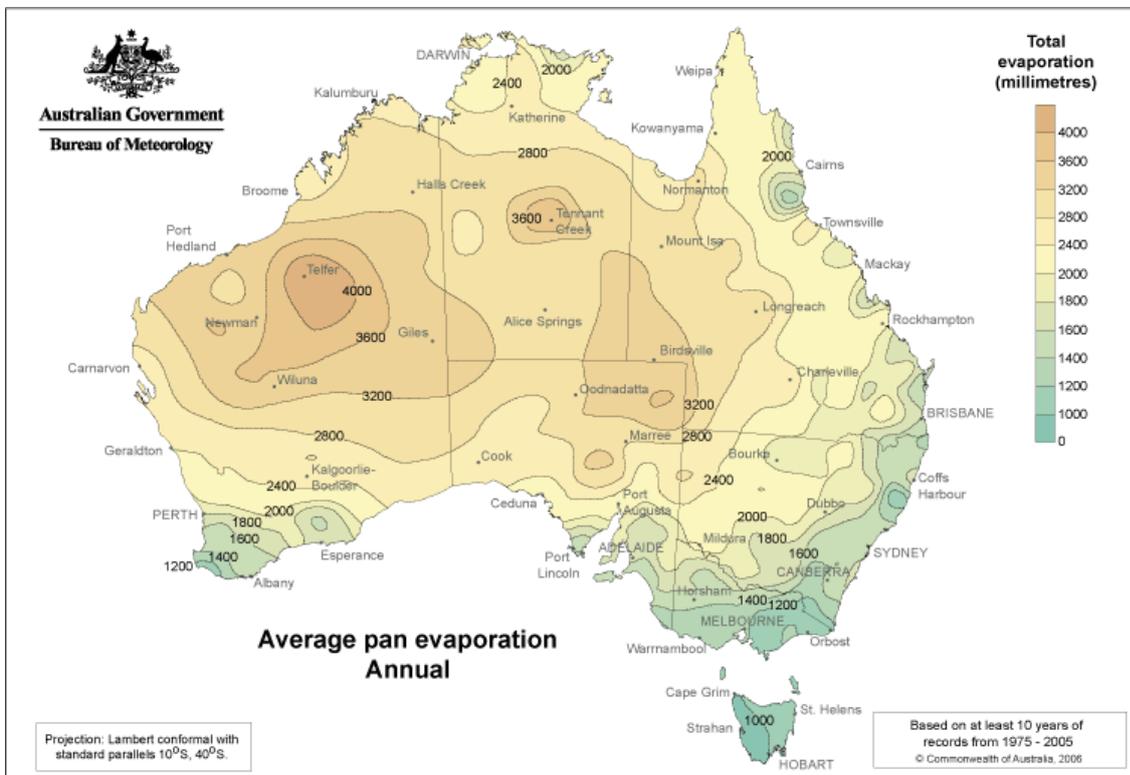


Figure 8: Australian annual average pan evaporation (Source BOM data)

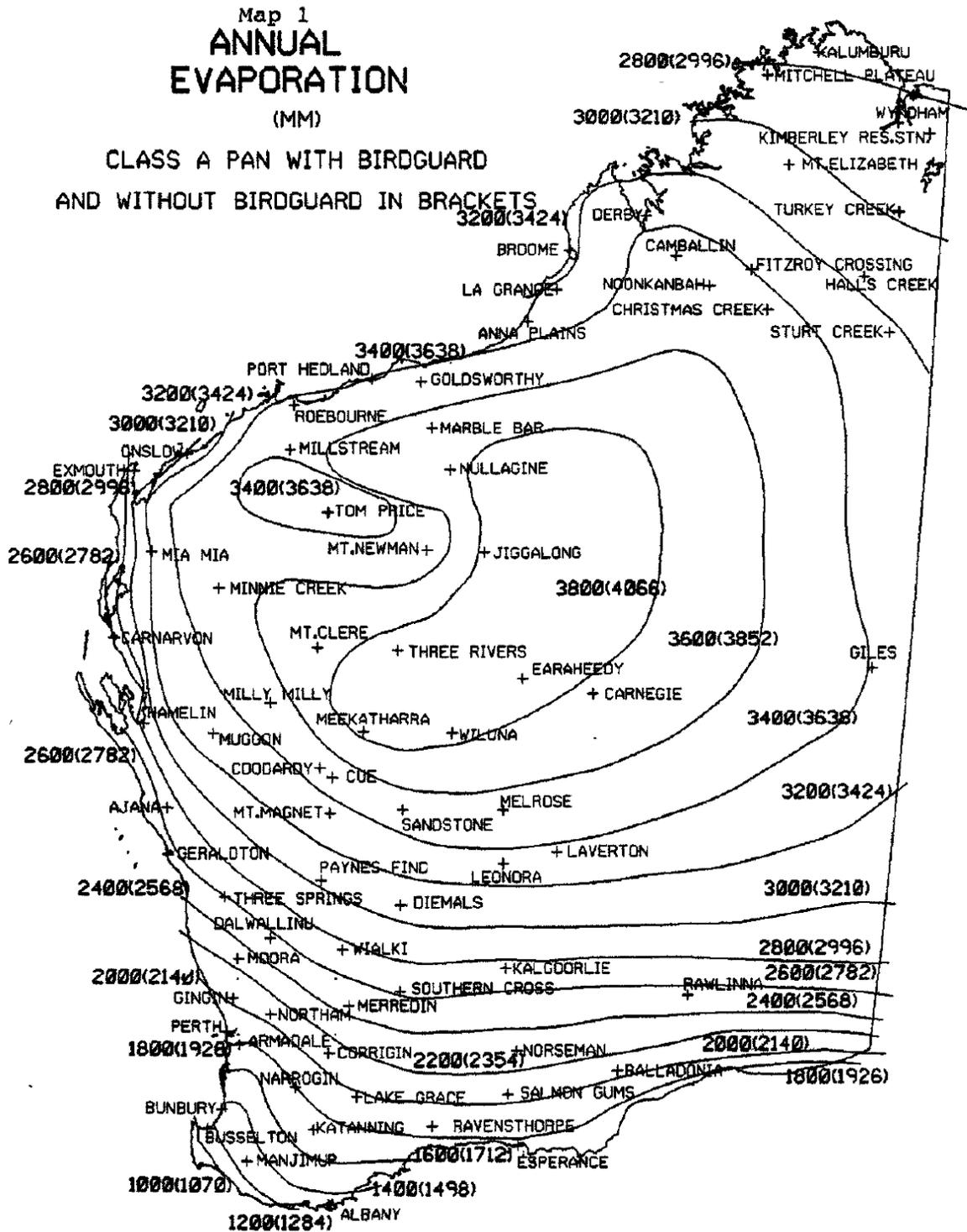


Figure 9: Western Australian annual average pan evaporation (Source Luke et al. DPIRD 1987)

5.1.3 Wind strength and direction

Figure 8 below is the 9am wind rose for Southern Cross over a period of 60 years to 2007.

Rose of Wind direction versus Wind speed in km/h (01 Jan 1957 to 30 Nov 2007)

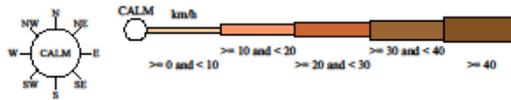
Custom times selected, refer to attached note for details

SOUTHERN CROSS

Site No: 012074 • Opened Jan 1889 • Closed Dec 2007 • Latitude: -31.2319° • Longitude: 119.3281° • Elevation 355m

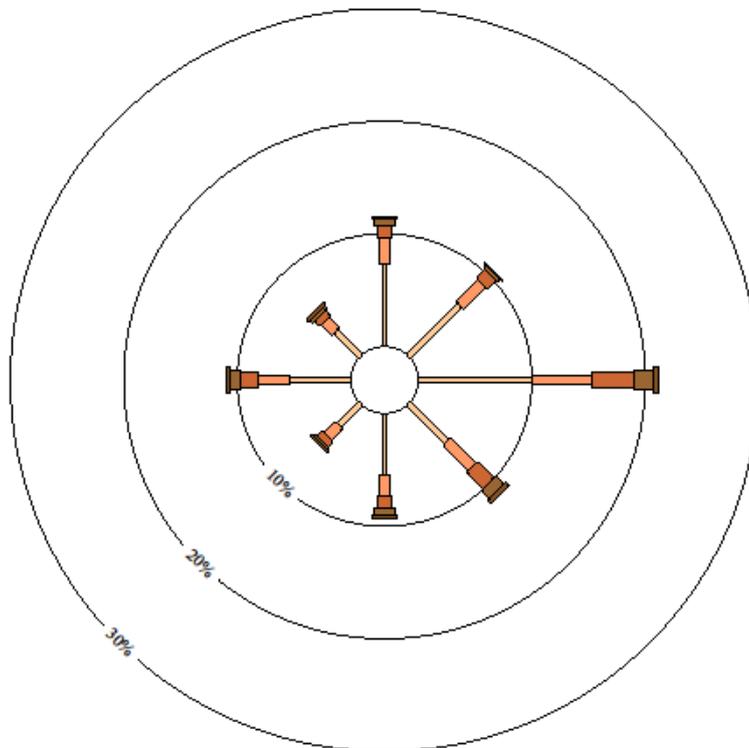
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am
18267 Total Observations

Calm 15%



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Figure 10: 9am wind rose for Southern Cross (Source BOM data)

Figure 9 below is the 3pm wind rose for Southern Cross over a period of 60 years to 2007.

Rose of Wind direction versus Wind speed in km/h (01 Jan 1957 to 30 Nov 2007)

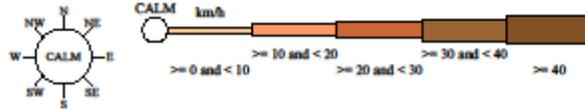
Custom times selected, refer to attached note for details

SOUTHERN CROSS

Site No: 012074 • Opened Jan 1889 • Closed Dec 2007 • Latitude: -31.2319° • Longitude: 119.3281° • Elevation 355m

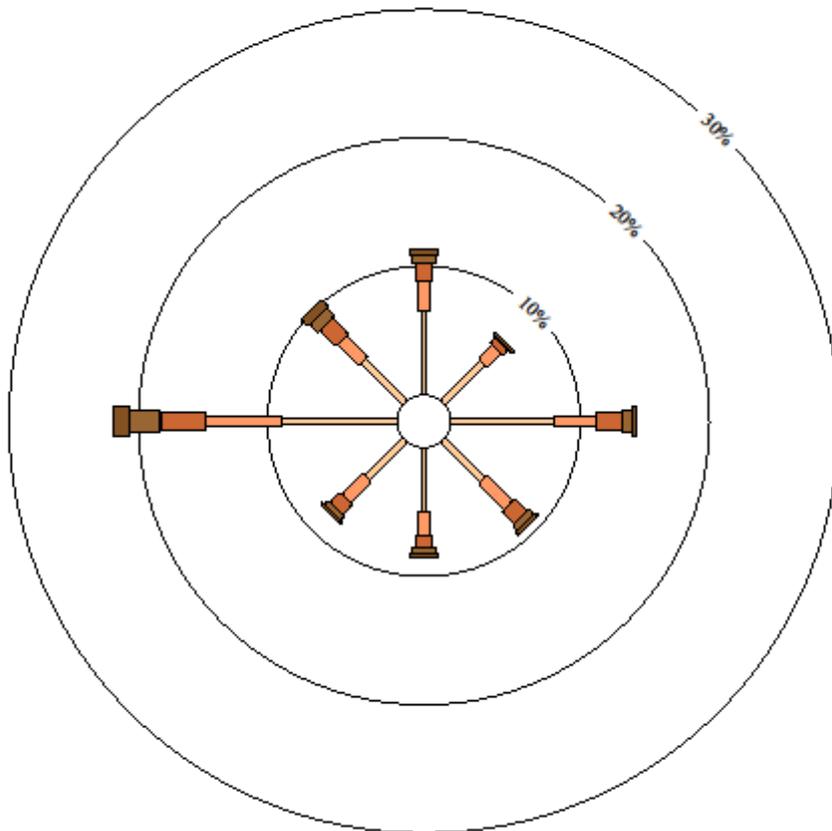
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
18021 Total Observations

Calm 10%



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Figure 11: 3pm wind rose for Southern Cross (Source BOM data)

5.2 Landform

The site is located at the middle of the Dandaragan Plateau. The landform is undulating. Maximum slopes on the property are no more than 5%. The average slope of the feedlot site selected is 3% fall to the east and 1% fall to the north.

“The Dandaragan Plateau has similar characteristics to the Arrowsmith Region but is less dissected by streams. Most watercourses are sporadic and ephemeral, except in the southern portion of the Dandaragan Plateau where there are a number of perennial groundwater-fed brooks (eg; Gingin and Lennard Brooks). The Dandaragan and Gingin Scarps form the western boundary and the Darling Scarp marks the eastern boundary of the plateau. The western edge of the Dandaragan Plateau is coincident with subcrop of the Otorowiri Member of the Parmelia Formation along the Dandaragan Scarp.” (Hydro-Concept 2015)

5.3 Hydrogeology

As noted in the previous section the proposed feedlot site is in the middle of the Dandaragan Plateau and sits on the Parmelia/Leederville Parmelia Aquifer. The site is located due north west of the Midlands “Dinner Hill” groundwater prospective area. The underlying geology and hydrogeology are revealed in the Agaton 12 bore log that is on the southern perimeter of the premises approximately 1.5 km from the feedlot site. The detailed bore log is tabled in Appendix 6.

The local hydrogeology is well described in the Hydro-Concept Hydrogeological Report 2015 of groundwater prospective resources in the quote below.

“Dinner Hill

Characteristics: This area is positioned in the eastern Dandaragan Plateau, to the north of Moora and Dandaragan (Fig. 13). There has a range of horticultural developments in the area with most substantial being olive production at Dandaragan Estate (Dandaragan Olives) just across the southern boundary in the former Victoria Plains subarea.

Aquifer: Leederville-Parmelia; possibly Mirrabooka.

Allocation status: To be confirmed – the Leederville-Parmelia Aquifer is possibly fully allocated; however, most allocation is associated with Dandaragan Estate which is present in the southwest corner of the Dinner Hill subarea and suggests other allocation may be considered in the north of the subarea.

Depth to water: Shallower near Minyulo Brook being less than 30 m bgl but increasing to the east.

Salinity Some areas of less than 500 mg/L TDS but mostly 500 to 1000 mg/L TDS

Bore yield: Very high

GDE constraints: Springs along Minyulo Brook (Muthawandery Spring) associated with discharge from Leederville aquifer”

References for greater detail on the local hydrogeology include studies by Balleau 1972, Briesse 1979 and Harley 1975.

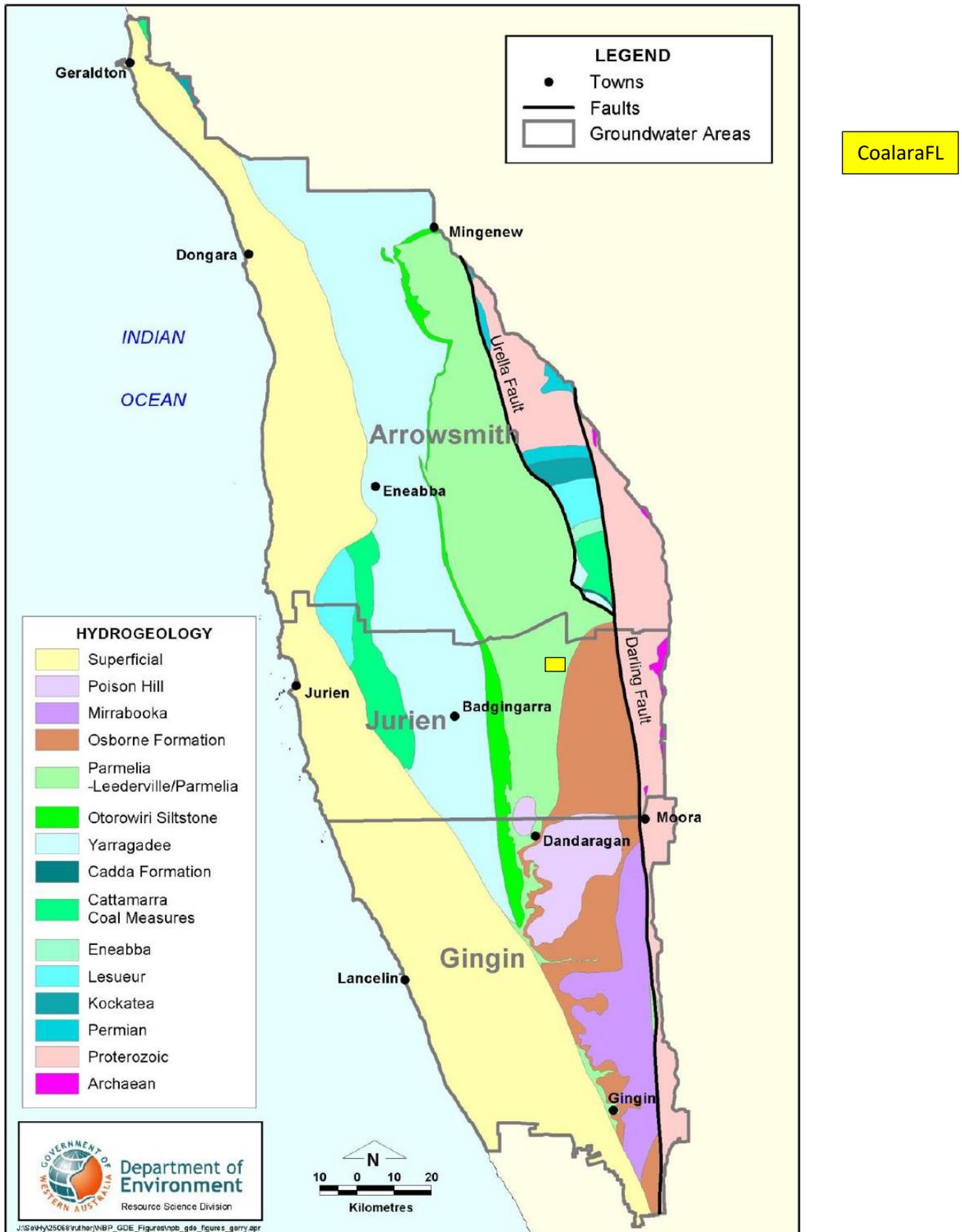


Figure 12: WA Midlands hydrogeological map with approximate location of Coalara Feedlot

The site hydrogeology of the area is well documented in many other studies.

The proponent has been granted a water licence to access the P/LP aquifer and abstract 2.25 GL/annum.

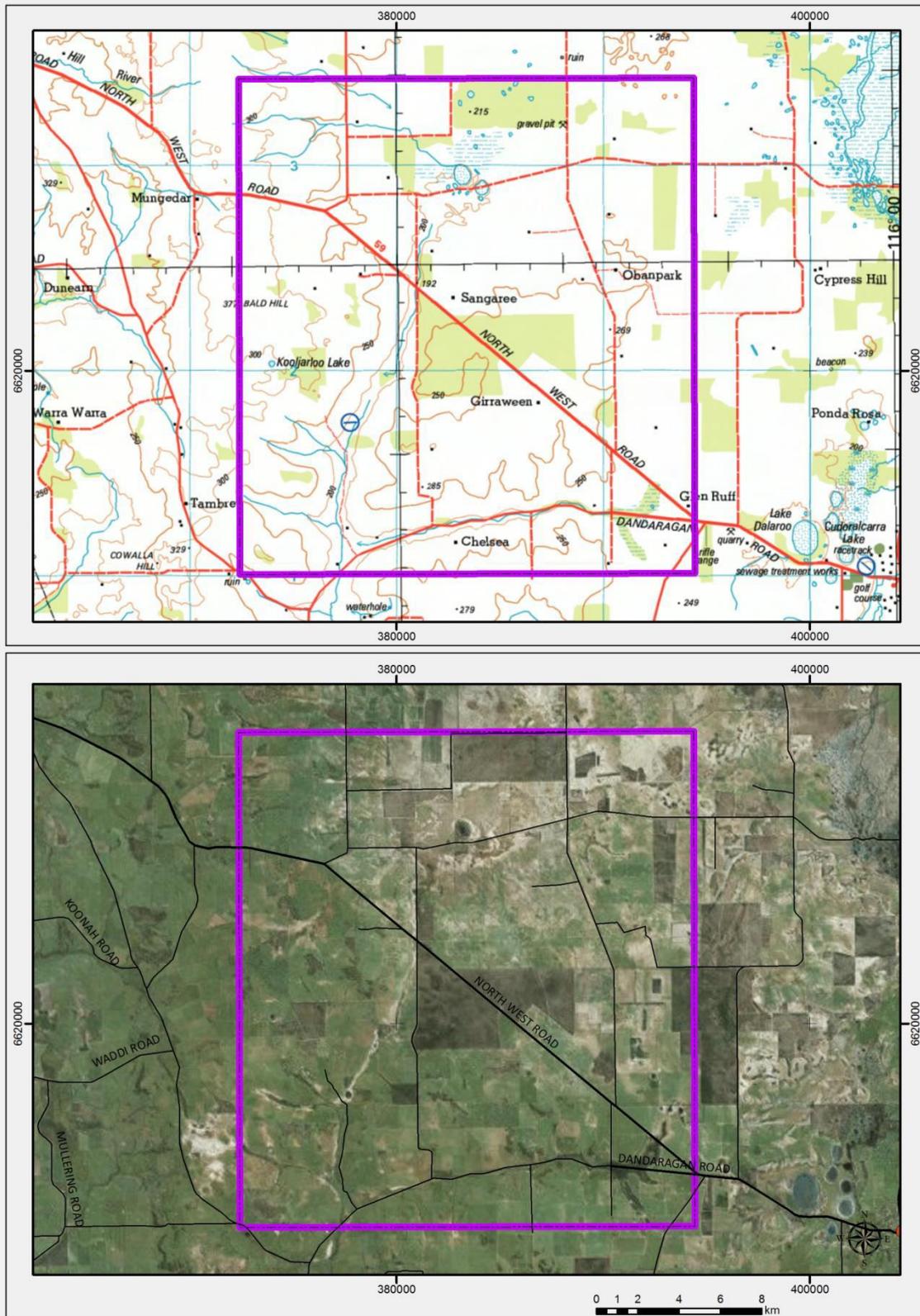


Figure 13: Location setting of Dinner Plain prospective groundwater resource area

5.4 Geology

The geology of the area has been described in many previous reports and published papers, with regional stratigraphic overviews presented by Playford et al. (1976), Backhouse (1984), and Mory and Iasky (1996).

The site is located on slope deposits; includes colluvium and sheetwash. To the east of the premises is sandplain, mainly aeolian with some residual deposits.

5.5 Groundwater

The site sits above a high-quality groundwater resource. The underlying hydrogeology and groundwater resource are revealed in the Agaton 12 bore log that is on the southern perimeter of the premises approximately 1.5 km from the feedlot site. The detailed bore log, water quality characteristics and yield data is tabled in Appendix 6.

The groundwater resource and the licence to access the Parmelia/Leederville Parmelia aquifer for irrigation is a key asset for the proponent and business operator.

Protection of the groundwater resource from nutrient accessions and degradation is a fundamental success factor for the feedlot operation.

5.6 Soil and subgrade

Soil on the premises is generally a loamy sand. All past excavations on the premises area revealed that at about 1 metre depth the subgrade underlying the soil is gravel with varying clay content.

Appendix 7 details the key information in respect of the Premises soils and subgrade information.

On the feedlot and pond areas the loamy sand is underlain with mottled red clayey gravel. This red material is underlain by yellow clayey gravel.

The paddocks on the premises will be managed to maintain sufficient ground cover to ensure that wind and water erosion of soil does not occur.

The soils on the property are low in organic matter and will benefit from the addition of carbon in the form of composted cattle manure. The resulting ionic charge will enhance water holding capacity in the root zone which is central to crop yield improvement in this region.

5.7 Biodiversity

The search of the DPLH interactive website for the development project land area did not generate any indication that the land area is a sensitive hotspot of biodiversity. (On that basis no specialist biodiversity research project was commissioned.)

The Premises have been cleared except for scattered remnant trees. Much of the land on the premises has been cropped for winter cereals. **All** the land that the development is to take place on has been regularly cropped for winter cereal production.

The proponent met with Ms Alison Donovan, District Officer of the Dept. of Biodiversity, Conservation and Attractions (DBC&A hereon) at Jurien Bay on 24 May 2019. The proponent answered a series of questions to provide an understanding of the potential impact on biodiversity and local water ways, wetlands and proximity to the Watheroo National Park boundary. After discussion relating to the site and situation of the proposed development Ms Donovan advised that she could not foresee any material impacts on animals, vegetation and other aspects of interest to The Department in the vicinity of the development.

Key notes in respect of the site are:

- the site area has been modified by land clearing and has a long history of cropping and livestock grazing
- no threatened flora or fauna species are known by DBC&A to exist on the site
- no threatened ecological communities are known to be located on the site
- the premises of the proposed feedlot is bordered on two sides (north and east) by the Watheroo National Park and to the south and west by properties owned by CSC
- the site contains no suitable habitat for threatened species and the likelihood of threatened species using the site is low
- given the characteristics of the site the development is unlikely to require referral to the Minister for the Environment for assessment under the Commonwealth EPBC Act.

5.8 Road and transport infrastructure

The site is serviced by an excellent network of local roads constructed from local subgrade material.

The key arterial roads leading to the eastern sector of the Boothendara Road are Coalara Road, Watheroo Road and Coorow Green Head Road. This road network is connected to the Brand Highway which is 31 kilometres from the Sendem Downs entrance via Coalara Road and then Watheroo Road.

5.9 Aboriginal cultural heritage and native title

The proposed Premises are within a regional Native Title Claim, YUED, NNTT Number 30 that was filed on 22/08/1997. The Premises is not within a Native Title Determined Area.

Indigenous Land Use Agreement WI2015/009 was identified as encompassing the premises land area. Figure 14 details the geographical extent of the Agreement.

Listed below are some details of the Agreement as an extract from the Register of ILUA's.

Extract from Register of Indigenous Land Use Agreements

- NNTT number WI2015/009
- Short name Yued Indigenous Land Use Agreement
- ILUA type Area Agreement
- Date registered 17/10/2018
- State/territory Western Australia
- Local government region City of Wanneroo, Shire of Chittering, Shire of Coorow, Shire of Dalwallinu, Shire of Dandaragan, Shire of Gingin, Shire of Goomalling, Shire of Moora, Shire of Toodyay, Shire of Victoria Plains, Shire of Wongan-Ballidu
- The agreement area covers about 26,000 sq km and is located approximately 60 km north of Perth and extends north of Jurien Bay, east to Dalwallinu and seaward to the 3 nautical mile limit.

Given the location of the proposed feedlot in an area of significant disturbance and modification it is considered a low risk for issues of aboriginal cultural heritage to arise or artifacts to be discovered.

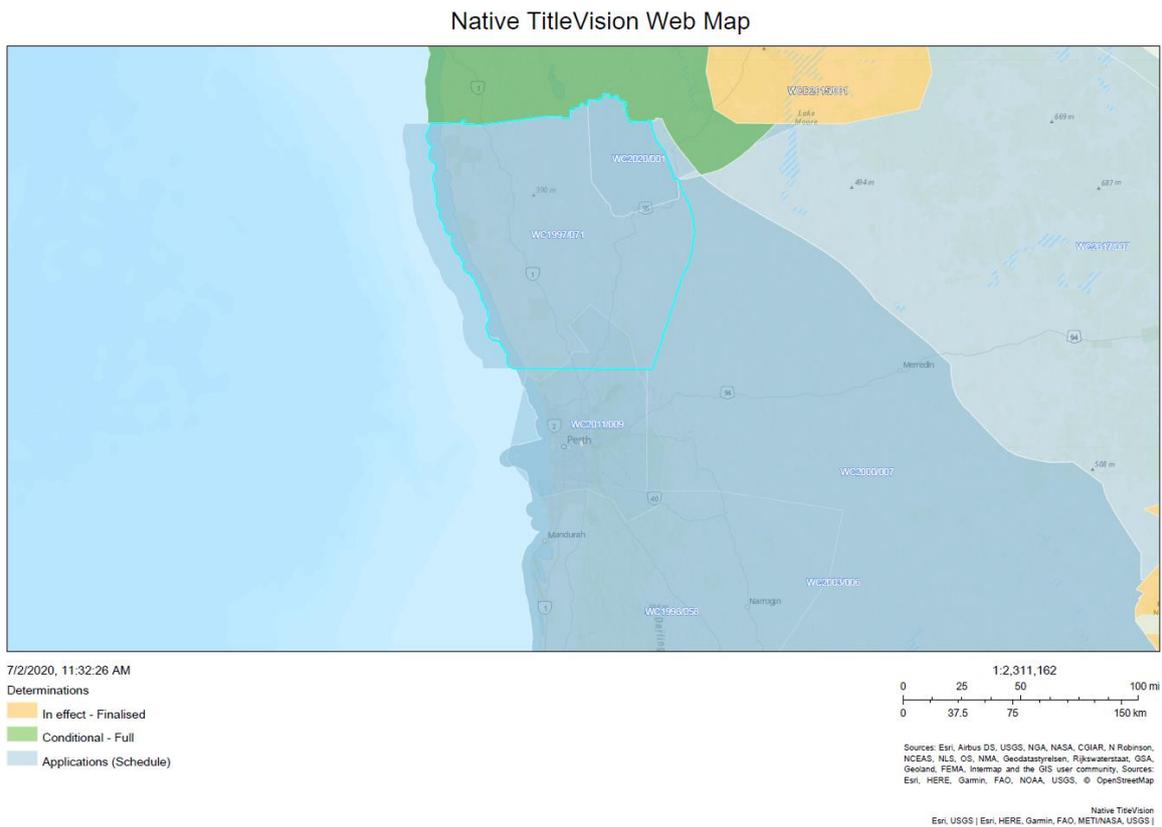


Figure 14: Yued Indigenous Land Use Agreement WI2015/009

6 Environmental risk management

6.1 Odour and dust

6.1.1 Odour generation

Feedlots generate odour from several sources.

Common odour sources are the feedyard surfaces, effluent drains and holding ponds. Environmental conditions and management can exacerbate or mitigate odour generation.

6.1.2 Odour mitigation

Odour management strategies will be implemented on the site.

Separation distance between odour source and receptor is the key determinant of odour impact of a development.

While special odour mitigation measures for impact on receptors is not necessary under The Guidelines, due to the remote location and large separation distances, the management of the business will operate the business according to the Environmental Codes of Practice. In addition, the provisions of the NFAS require compliance with environmental management systems which aid in the reduction of odour.

Timing operations to coincide with favourable weather conditions at times of manure harvest and shipment and spreading is important as is management to ensure minimisation of anaerobic processes. These are the key strategies to achieve good odour management. Appendix 11 details a comprehensive odour management plan for the feedlot.

6.1.3 Odour receptors

The proposed development site has a separation distance of approx. 6 kilometres to the nearest farmstead residence, Lot 2297, Coalara Road, Boothendara. This house is noted as R1 in Figure 25. This residence was unoccupied at the time of writing. The advised separation distance calculated under the guidelines for the characteristics of the site and location is approximately 2 kilometres to this class of receptor.

Coalara Feedlot will have a separation distance of approximately 28 kilometres to the nearest small towns of Watheroo (28 km) and Badgingarra (30 km). The required separation distance to a small town estimated using The Guidelines is approximately 6.9 kilometres.

6.2 Noise

Remoteness and separation distance from receptors ensure that noise is not an environmental issue for this operation. Due to the site characteristics it was deemed unnecessary to conduct any detailed study into this listed environmental hazard.

6.3 Manure

The proponent proposes exemption from licencing under the following category of the EP Act 1986:

- Category 67A – Commercial compost or blended soil; 1000+ tonnes stored on premises

Category 67A is described as “..premises on which organic material (excluding silage) or waste is stored pending processing, mixing, drying or composting to **produce commercial quantities** of compost or blended soils.” The production or design capacity for Category 67A is 1000 tonnes or more per year.

The proponent has sufficient crop land on the premises and adjoining agricultural holdings to sustainably utilise all manure/compost produced in the feedlot operations. No sales of manure or compost will be necessary to sustain the feedlot operations. Therefore, **commercial** quantities of manure or compost will not be generated on the premises.

6.3.1 Manure generation

Tucker et al. 2015 (Section 1, pages 6/7) calculated that the Total Solids (TS hereon) manure harvest yield could be as low as 400-420 kg TS/SCU/year when the feedlot pen floor interface layer is well maintained and no bedding is used for cattle.

CSC intent to protect the pen floor interface layer to ensure the seal above subgrade is maintained in line with The National Guideline’ strategy for minimal infiltration of nutrient from the pen floor. CSC do not intend to use bedding for cattle as the site chosen has climate characteristics delivering year-round cattle comfort in most years. On this basis, the number used for TS manure harvest from the Coalara pen floors is 410 kg TS/SCU/year.

Depending on rainfall and pen conditions significantly more than this tonnage may be removed from the pens on an “as is” basis to the stockpile however moisture loss and volatilisation will reduce the total manure tonnes finally available for use in soil improvement programs.

More cattle on feed will result in proportionally more manure solids harvested from pen surfaces.

Operating the business at the general industry standard for feedlot occupancy of 80% of licenced capacity (once fully developed), TS manure harvested annually and delivered to stockpile, will be approximately 2,624 tonnes, which, with an average harvest moisture of 50%, generating “as is” delivery to stockpile of 5,248 tonnes, which with a bulk density of 0.6T/m³, will equate to 8,750 m³.

It is intended that a minimum of 7,000 m³ of windrowed manure and stored compost will be retained on the stockpile site at any time once the feedlot is operating at full capacity – refer Section 6.3.2.

The manure stockpile will have minimum capacity at any stage of development to hold 24 months of feedlot manure being composted and stored. Manure produced will be both aged and composted. These factors affect the elemental and mineral composition of the manure utilized as fertilizer on croplands.

Tucker et al. 2015 (Section 2, page 4) found that aging manure for 12 months or more reduced the TS by about 35%. On this basis, with the Coalara environmental model detention time of manure of at

least 12 months, the total manure transferred annually from stockpile for application to CSC crops would be in the vicinity of 1,706 tonnes TS per year or 2,274 tonnes “as is” at 75% dry matter.

6.3.2 Manure processing and manure storage

The feedlot design incorporates a maximum reserve area of 4.86 hectares for the manure stockpile (developed in two stages) within the controlled runoff area. A base of at least 100mm of compost will be maintained on the storage pad floor at any time. Manure windrows as “composting work in process” toward production of compost, will sit upon this base pad as they are watered and turned.

Manure will be initially stacked in low profile windrows (150cm X 3m spaced 5m apart – 8m centre to centre) and processed with a windrow turner using effluent additions from the holding pond to ensure the product is processed at, and produced to, optimum moisture specifications. Once friable and stable, the composted manure will be stacked in larger profile windrows (250cm X 10m spaced 5m apart – 10m centre to centre) for storage until used on the Company croplands. A minimum compost stock on hand of 7,000 m³ will be retained, all the time, however provision has been made for the maximum developed manure storage and processing area to hold up to double this amount.

In addition, provision has been made for composting of dead cattle in a designated area on the manure pad. It is estimated that manure windrows with a profile 230cm X 6m will be required to hold dead cattle for composting. 1.15 metres minimum per head/annum of linear windrow should be provided for each dead animal; therefore 150 linear metres for 100 dead cattle composting windrows will be allowed in the manure storage and processing area. Tucker et al. 2015 (Section 2, pages 10-14).

The list below details the planned windrows to be laid out in the manure storage and processing site.

- Processing windrows: 150cm x 5m x 3,000 linear metres in 40 rows
- Storage windrows: 350cm x 10m X 600 linear metres in 8 rows
- Dead cattle composting windrows: 230cm x 6m x 150 linear metres in 2 rows

There is also provision for a manure machinery storage area for a grader, front-end loaders, compost turners and irrigation plant and equipment. Finally, a manure road reserve will be left clear along the high end of the storage area and turning circle left clear at the effluent pond end of the site.

The feedlot business has the potential to produce 3 basic manure categories at the premises.

1. Fresh or raw manure
2. Aged manure
3. Composted manure

Fresh manure is material harvested directly from the pens and it is high in nitrogen and moisture with significantly more bulk and TS than aged or composted manure. Fresh manure can be blocky and slabby and therefore difficult to apply directly to land through many mechanical spreaders. The material is likely to contain more viable weed seeds and pathogens than in aged or composted manure. Nutrient levels in fresh manure are relatively inconsistent and unstable. Fresh manure can contain high levels of nitrogen but will generally draw down available nitrogen in the first crop after spreading to land. Nitrogen is likely to be lost to air in spreading fresh manure to soil. Available

phosphorus for crop use is diluted by the bulk of the material in the fresh manure form. High odour levels may be experienced in spreading fresh manure.

Aged manure is material that has been stored in windrow conditions for 12 months with or without turning or addition of moisture. Aged manure is more weathered than fresh manure and more likely to be more friable or spreadable particularly if rain has fallen on the product or moisture has been applied. Nitrogen levels are generally lower in aged manure than fresh manure. Nutrient levels in aged manure are more stable and consistent than in fresh manure and phosphorus is more concentrated in aged manure following the TS shrink that occurs in a 12 months aging period. Aged manure is less likely to tie up nitrogen available to crops in the first year of spreading. Aged manure is generally drier and less odorous than fresh manure. Organic carbon is more concentrated in aged manure than fresh manure.

Composting is the process whereby microbial activity in the presence of moisture and an ideal carbon nitrogen ratio, is used to breakdown organic matter into humus.

Aerobic composting in the feedlot context is preferred over anaerobic composting as it generates less odour and emits carbon dioxide rather than methane and has a lower net greenhouse gas emission.

Fully composted manure has little nitrogen as this is used by microbes and converted to CO₂ emissions in the process. Compost is generally drier and more consistent for moisture, phosphorus and organic carbon. Phosphorus is concentrated in the composting process relative to the significant reduction in bulk of the TS. Nutrients are stabilised in a slow release form in compost.

Compost as a soil conditioner and source of phosphorus and organic carbon is significantly more valuable in cropping regimes than fresh or aged manure. The concentrated ionic charge provided to soils with low charge enhance water holding capacity and the interface for transfer of nutrients and moisture to crop plants.

Composting requires sufficient carbon to fall in the carbon nitrogen range of 15-40:1. Freshly harvested manure may be suitable for composting without amendment. The consequence of too little carbon is that the available carbon will be used up and the decomposed organic material will cool down and stabilise as aged manure.

The Coalara plan is that fresh manure will be harvested from feedlot pens in dry conditions and stored in dry peaked windrows (which continue to dry out over time without processing). Winter effluent moisture will be seasonally available from the feedlot ponds. Feedlot effluent water will be added to manure to initiate and facilitate the composting process. Once underway clean water may be added to the compost to complete the process. Heat monitoring and turning of windrows will drive moisture out of the manure. More water will be added until the process is complete at which time the low profile processed windrows will be pushed together to form the larger profile storage windrows which are then loaded and shipped to CSC croplands.

6.3.3 Manure utilisation plan

The feedlot is situated in a region that is low in soil organic matter (soil carbon) and other nutrients. Feedlot manure contains significant stores of organic carbon, trace elements and major crop nutrients such as phosphorus and potassium.

The first strand of the manure utilisation strategy is to replenish soil carbon and nutrient deficits in the premise' soils and the soils of the adjoining "non-premises" farmlands owned by CSC. (The CSC dryland cropping area in addition to the premises totals 1,962 ha).

The second strand of the future, long term feedlot solids management plan is that after the CSC croplands are sufficiently upgraded (in about 10 years from commencement of operations) the business would consider making available a portion of feedlot manure to be shipped off the premises for use as crop fertiliser and organic matter soil conditioner by local farmers. To enable this plan CSC would seek to secure a Category 67A EP licence to enable commercial sales of compost.

Discussions have been held with neighbouring property owners who are keen to access bulk loads of manure for spreading, to reduce and complement their annual fertiliser requirements.

Financial arrangements for this to happen will vary from time to time depending on supply and demand. If local growers are to secure the material, an "at cost/profit price" will be struck for manure loaded onto the farmer's truck. Local growers will be invited to tender to become potential recipients of compost as it becomes available.

6.3.4 Manure and compost utilisation on premises cropping programs

The premises area includes approximately 1,056 ha of dryland cropping land which would benefit from the addition of carbon, phosphorous and nitrogen in most cropping regimes.

The proponent is aware that overloading the premises soils with manure could lead to nutrients moving below the root zone and potentially reaching the ground water. Therefore, once gross soil nutrient deficits on the premise' are addressed by using aged manure and compost, the primary strategy will be to export the material from the feedlot premises to the adjoining CSC croplands.

Management are guided by professional agronomists in cropping program choices that are good for the soil, good for the environment and good for the business. However, as the facility has a focus on cereal grains and cereal hay as the base ingredient in the beef cattle feed rations, it is highly likely that cropping will lean toward cereal growing in rotation with suitable break crops and fallow rotations.

Agronomist charged with responsibility for cropping programs on the farm will be required to ensure that nutrient balance is calculated using scientific method and advice given in respect of maximum rates of manure application that can occur for crops being grown.

6.3.5 Cropping nutrient balance – aged feedlot manure

The estimated concentration of nutrients in aged feedlot manure (dry basis) are listed below.

- Dry matter (TS)	75%
- Nitrogen	2.2%
- Phosphorous	0.80%
- Potassium	1.9%
- Sodium	0.30%
- Sulphur	0.45%
- Calcium	2.22%

- Magnesium	0.86%
- EC1:5 dS/m	8.26%
- pH	7.22
- Ammonia-N mg/kg	1,431
- Nitrate-N mg/kg	307
- Boron mg/kg	21.5
- Cobalt mg/kg	7.0
- Copper mg/kg	34.5
- Iron mg/kg	11,717
- Manganese mg/kg	387
- Molybdenum mg/kg	4.28
- Ortho-P mg/kg	944
- Zinc mg/kg	221

The primary nutrients used in determining nutrient limits for cropping soils are nitrogen, phosphorus and potassium.

The method for estimation of nutrient application limits is the “nutrient limited application rate” (NLAR) formula which is expressed as:

$$\text{NLAR} = \frac{\text{Cr} + \text{SS} + \text{EL}}{\text{NW} \times 10^{-3}}$$

Where

NLAR	= nutrient limited application rate of feedlot manure (t/ha)
CR	= crop requirement of the applied nutrient (kg/ha)
SS	= soil storage (kg/ha)
EL	= allowable nutrient losses to the environment (kg/ha)
NW	= available nutrient concentration in FL manure (mg/kg)

Phosphorus is the only nutrient with significant capacity for soil storage and the surplus amount that can be added to the soil annually depends on the life of the feedlot. Coalara Feedlot is assumed to have a 30year operating life.

According to Tucker et al. 2015, if the soil of the utilisation area has a depth of 0.6m, a bulk density of 1,400 kg/m³ and can absorb 200 g P/kg, then the total soil storage (SS) capacity is 1680 kg of phosphorus. If the expected life of the feedlot is 30 years, the annualised SS is 56 kg P/ha.

Growing an oat crop that yields 7 t/ha of dry matter with a nutrient content of 2% N, 0.2% P and 1.4% K the CR element in the NLAR formula will be 140 kg N/ha, 14 kg P/ha and 98 kg K/ha.

Applying the NLAR formula for nitrogen:

$$\begin{aligned} \text{NLAR (t/ha)} &= \frac{140\text{kg} + 0 + 20}{13.8} \\ &= 11.6 \text{ TS/ha/annum} \end{aligned}$$

Applying the NLAR formula for phosphorus:

$$\begin{aligned} \text{NLAR (t/ha)} &= \frac{14 \text{ kg} + 56 + 0}{5.0} \\ &= 14.0 \text{ TS/ha/annum} \end{aligned}$$

Applying the NLAR formula for potassium:

$$\begin{aligned} \text{NLAR (t/ha)} &= \frac{98\text{kg} + 0 + 0}{12.0} \\ &= 8.2 \text{ TS/ha/annum} \end{aligned}$$

On this basis in this example potassium is the limiting nutrient and the sustainable annual spreading rate for manure is 8.2 t/ha/yr of TS for an oat crop yielding 7 t/ha.

If manure is applied with one application every 4 years in a “2 oat crops, 1 pasture year, 1 fallow” rotation, then an application of 16.4 t/ha TS can be applied in each manure spreading pass. On an “as is” basis at 75% dry matter, this equates to 21.9 t/ha “as is” aged manure spread every 4th year.

The feedlot at developed capacity of 8000 SCU will generate 1,706 TS tonnes of aged manure or compost each year (detailed in section 6.3.1.).

To utilise the tonnage generated annually using a 4year spreading rotation on a crop such as oats for hay will require 416 ha of land to sustainably utilise the fertiliser nutrient generated in the feedlot activity. With phosphorous applied at lower than the maximum NLAR estimates, the life of a closed utilisation area of 416 ha (without requiring external transfer of manure) would be 50 years. The proponent has significantly more than 416 ha of suitable cropland.

The proponent controls the following cropping land on the Premises and adjoining properties.

- Coalara feedlot premises dryland	1,197 ha
- Sendem Downs south block dryland	842 ha
- Hallswood Park dryland	1,120 ha

	3,159 ha

In addition to land areas listed above, cropland on the Premises to the east of the pivot development totals approximately 84 ha that could be bought into the manure utilisation program in the future.

Appendix 13 details the CSC operated cropping properties as the utilisation areas:

- Manure utilisation area 1 – Premises
- Manure utilisation area 2 – Sendem Downs
- Manure utilisation area 3 – Hallswood Park

Higher crop yields will feedback into higher crop demand for nutrient and thereby a shorter average rotation for manure spreading - possibly shortening to a 3-year rotation. Removal and nutrient cycling can be achieved by providing grain and hay to the feedlot as it replaces imports from other sources.

On a 4-year rotational basis, the premises site croplands could sustainably utilise up to 4,908 TS tonnes per year. The total CSC holdings could utilise 12,952 TS tonnes (17,269 tonnes at 75% dry matter) per year.

In addition, if applying a 4-year rotation, the associated nominated cropping land on Sendem Downs and Hallswood Park could sustainably utilise many multiples of the TS manure tonnes produced per year.

In the case that the soil storage capacity for P is found to be significantly lower than the calculations used in this assessment, the risk mitigation is to spread the manure over a larger area of the proponent's land. In the unlikely case that manure production is greater than estimated and local land capability is less than estimated, the proponent would secure a Category 67A EP licence and allow district farmers access to this organic resource to improve their soils.

6.4 Surface water

6.4.1 Clean water diversion

The controlled runoff area of the feedyard and support facilities will have "up gradient" diversion banks and channels constructed to ensure that clean rainfall runoff water does not flow to the effluent holding ponds. In stage 1 of the development the reserved areas for feedlot rows C and D will have rainfall on these areas captured and directed away from the effluent system. Once these rows are constructed to stand cattle in stages 2 and 3, all runoff will be directed via the drain systems to the effluent sedimentation and storage systems.

6.4.2 Effluent runoff and capture

All areas that have cattle manure deposited by feedlot cattle will be contained in the controlled drainage area. Calculations for minimum design capacity are detailed in Appendix 12.

It is planned that the effluent drains associated with lowest drainage point for each of the cattle pen rows will have the following specifications:

- | | |
|-------------------------------|------------------------|
| - Drainage reserve dimensions | 10 m wide x 510 m long |
| - Drainage reserve profile | Trapezoidal |
| - Drain base width | 5 m |
| - Drain depth | 0.2m |
| - Batters | 1:10 |
| - Approximate long fall | 0.5 to 1.0% |

The drains have a design to carry runoff from the 1 in 20year ARI storm event with a 30minute duration.

The drain reserve has been designed to ensure sufficient width for loaders and bobcats to clean any sediment settling in the drains in the dry times. The drain reserve areas will be graded and sprayed, to keep them permanently free from vegetation growth.

The west to east flowing drain at the northern end of the feedlot will have a steeper grade than the catch drains and will possibly require concrete to avoid scouring and erosion of the drain floor. The

detailed survey of the site will inform the final drain floor material requirements. Calculations for possible concrete design capacity, if required, are tabled in Appendix 12.

6.4.3 Sedimentation system

The sedimentation system will be designed in accordance with “The Guidelines – Appendix A”.

Calculations for minimum design capacity are tabled in Appendix 12.

The system will be comprised of 3 shallow flat basins (in series) for settlement of entrained solids with a compacted clay floor to facilitate cleaning of the ponds and mitigate against infiltration.

Each sedimentation structure will have the following design parameters:

- 1020 m³ of holding capacity in each basin
- maximum holding depth of 0.8 m
- batters will be 1:3
- surface area of each basin will be 1670 m²
- the basin dimensions will be 100m long and 16.7m wide
- there will be a positive slope in the basin floor to the discharge point
- A slatted concrete weir discharge assembly to enable differential release of cleaner surface layers and longer detention of loaded lower layers of water in the structures.

6.4.4 Holding pond and evaporation

In the past holding ponds were designed to accommodate the 1 in 20year, 24hour storm event or the 1 in 10year 72hour storm event. This design criteria led to ponds overtopping more frequently than the 1 in 10year event for ponds directed to irrigation and 1 in 20 years for evaporation ponds.

Since 2012 the basis for evaporation holding pond design has been changed to an annual water balance for the 95%tile wet year. This change led to a significant increase in the feedlot pond size requirement to avoid a spill frequency of no more than 1 in 20 years for evaporation ponds.

Using The Guidelines as the basis for holding pond design with the key criteria being to have a spill from the system at a frequency no greater than 1 in 20 years, the estimated required pond volume design for this site at developed capacity of 8,000 SCU, is 46.25 ML with a pond surface area of 18,500 m².

A key element of the effluent management design will be the evaporation of some effluent by seasonal application (by irrigation) of some of the available liquid in feedlot manure compost production on the manure storage and composting pad. A reserved area of up to 4.86 ha has been allocated for manure storage for the fully developed feedlot. The manure pad is within the controlled area of the feedlot design and any runoff from the process will be within a closed system and returned to the holding ponds. In the average year 30 ML will be utilised in composting operations while in the 95%tile year 50 ML will be utilised. Effluent water will not be directed to irrigation of land outside the controlled feedlot area.

The effluent holding ponds will be constructed with a holding capacity depth of 2.5 m with freeboard as recommended by The Guidelines.

The stage 1 holding pond will be 1.1 ha with a holding capacity of 27.5 ML. Stage 2 holding pond will be 0.75 ha with a holding capacity of 18.75 ML.

Method and calculations to derive these volumes are tabled in Appendix 3.

6.5 Groundwater protection

Groundwater will be protected by constructing facilities to the design standards described in The Guidelines for permeability on the pen pad surfaces, drains, sedimentation structures and holding ponds. Creating low permeability seals in, drains, sedimentation basins and evaporation ponds will ensure effluent and nutrient does not leach below the surface, to become accessions to groundwater.

Facilities will also be sized according to The Guideline volume requirements to ensure that pond discharges happen no more frequently than 1 in 20 years over the long term, based on recorded data sets of at least 100 years.

Significant groundwater monitoring conditions are specified in the premises water licence.

6.6 Flora and fauna preservation

The search of the DPLH interactive website for the development project land area did not generate any indication that the land area is a sensitive hotspot of biodiversity. (On that basis no specialist biodiversity research project was commissioned.)

Remnant trees on the largely cleared 1500hectare premises will be preserved.

Other than Western Grey Kangaroos there is little native wildlife on the premises.

The proponent does not intend to interfere with this abundant species.

6.7 Traffic flows and hours of operation

All traffic will access the site from the Coalara Road.

The feedlot development at full capacity will create new traffic flows centred on the feedlot business at a local level.

Local grain and fodder movements happen without the establishment of a feedlot however the development will redirect and shorten journeys for grain and fodder and will thus reduce stress on the road network overall.

Cattle truck movements on local roads will increase with arrivals and departures of cattle that would not otherwise come to the LGA.

Manure will largely be utilised on the Sendem Downs farm to build up soil carbon. It is unlikely that soil carbon and nutrient will reach levels necessitating export beyond the CSC farms.

Tabled below is an estimate of traffic flows on the feedlot access road at 80% and 100% of full capacity at maximum development of 8,000 SCU on site.

Feedlot Occupancy	Light Vehicles Weekly			Trucks Weekly - B/D equivalents				
	Staff	Other	Total	Local feed	Other feed	Cattle	Other	Total
80%	16	5	21	9.4	3.1	11.4	1	25.0
100%	16	5	21	11.8	3.9	14.3	1	31.0
Assumptions:				tonnes	B/D load	Trip/year	Trip/week	Trip/day
Total feedstuffs @ 80% = 8000 X 80% X 13.5 X 365/1000				31536	38	830	16.0	2.28
2000 tonne of grain supplied from CSC properties				2000	38	53	1.0	0.14
All fibre (hay, straw, silage) produced on CSC properties				4730.4	38	124	2.4	0.34
Net imported feed				24805.6	38	653	12.5	1.78
Percentage of local sourced feed				18604.2	38	490	9.4	1.35
Percentage of highway sourced feed				6201.4	38	163	3.1	0.45
Total cattle in @80% = 8000 X 80% 400 kg X 365/112				8342.8571	36	232	4.5	0.64
Total cattle out @80% = 8000 X 79% 635 kg X 365/112				13078.732	36	363	7.0	1.00
All manure will be utilised on the CSC properties.				0	0	0	0	0

Staff will be accommodated on CSC property houses. Trips on public roads will include 2 trips per staff person per week.

Figure 15: Coalara Feedlot projected traffic flows at 80% & 100% feedlot occupancy

It is estimated that the average grain truck size will be a B/Double configuration with an average pay-weight of 38 tonnes. It is estimated the average cattle truck will be a B/Double configuration with an average pay-weight of 36 tonnes.

All trucks servicing the business will need to traverse local roads which, at 80% capacity, will see an increase of 25 two-way truck movements/week on the Coalara Road. It is assumed that half this number will access the site via the Watheroo Road (12.5 movements/week) and the other half by Coorow Green Head Road (12.5 movements/week). This use of local roads includes the “Other” trucks category which includes provision for extraneous supply trucks such as fuel delivery.

“Other feed” and “Cattle” trucks will also come to the site via the Brand Highway which will increase trucks on this national road by 15.5 movements per week.

The increase of heavy vehicle movements on both local roads and the national highway are not considered significant for these road categories.

Light vehicle movements on public roads will be limited as most of the movements will be staff “on shift” traveling to and from accommodation provided on site or on adjoining and adjacent CSC properties. Feedlot management will reside permanently on the CSC properties.

Additional traffic at irregular hours will be generated during the construction of the feedlot however this will be short term and the infrastructure of the local road network is set up to handle the traffic volumes.

The normal operating hours of the feedlot will be between 0700 and 1700 hours seven days a week. During these hours, the office will be open to ensure cattle feeding can be carried out. Outside these hours the security gate will be closed. Work routines (including cattle arrivals and dispatch) will be planned to happen within the normal operating hours.

Cattle trucks arriving from significant distance that require unloading due to animal welfare considerations will be dealt with on a case by case basis. These trucks may be allowed to enter the site for unloading outside of normal operating hours based on exceptional circumstance.

AusWide Consulting prepared a Traffic Impact Assessment for the proposed development using the parameters detailed earlier in this section and reported (page 16) the following conclusions.

“The assessment of the expected daily and peak hour vehicular traffic movements generated by the proposed development reveals low levels of increased vehicular traffic. The daily traffic generated by the development is 3.91 vehicles per day at stage 1, 4.84 vehicles per day at stage 2 and 7.98 vehicles per day at stage 3. The peak hour trip rate in stage 3 is 0.8 vehicles per hour. This low level of trips generated by the proposed development would have no significant effect on the traffic using Coalara Road and Watheroo Road. The daily traffic generated by the proposed development represents only 8% of the daily traffic on Coalara Road and 4% of Watheroo Road traffic.

The traffic generated by the proposed development at stage 3 is only 8 vehicles per day and therefore will have a less than minor impact on the existing traffic using Coalara Road and Watheroo Road.

The sight distances along Coalara Road for vehicles exiting the site through Boothendarra Road has been observed as 190 metres to the north and 250 metres to the south. The observed sight distances exceed the desirable sight distance of 83 metres for a critical gap to exit into the Coalara Road traffic. The site vehicle access complies with AS/NZS 2890.1-2004 in terms of sight distances. There is adequate sight distance for the rare pedestrians on Coalara Road.

Therefore, based on the assessment presented in this report, it is considered that the proposed development will have a less than minor effect on the existing traffic in the surrounding roads and very little to no effect on the on-street parking in the vicinity of the site.”

6.8 Pesticides & chemicals

CSC is in the business of producing safe food for human consumption. The primary strategy in respect of pesticides and chemicals used in the business is to continue to explore ways of minimisation of the use of artificial pesticides and chemicals.

The bare minimum veterinary chemicals will be used in beef production at Coalara Feedlot. All chemicals will be managed in accordance with the provisions of the NFAS accreditation that the company will secure and maintain.

The NFAS deals with the management of pesticides and chemicals in sections:

- Quality Management QM5,
- Food Safety FS2, FS3, FS4, and
- Environmental Management EM1.

CSC are also aware that antibiotic resistance is a growing problem for users of antimicrobial drugs.

CSC will develop animal health management programs that are sensitive to the need to slow down the rate of development of antimicrobial resistance.

The company will use the MLA (2018) report “Antimicrobial stewardship guidelines for the Australian cattle feedlot industry” as the guiding document in the formulation of regimes and procedures to achieve this aim.

6.9 Pest and vermin control

Monitoring of pest and vermin population will be by observation.

The primary strategy to keep pests and vermin under control is to minimise food sources and breeding habitats.

Potential breeding areas will be minimised if not eliminated by good housekeeping around the mill and feedlot areas. This will include regular cleaning up of spilt feed ingredients around the milling area and feed alleys (spilled ration) which will be placed on the pen manure pad for pick up in the manure harvest process.

In addition, manure build up along pen fence lines will be pushed into the pens regularly. Once in the pen the trampling action of the cattle make the pen floor pad an inhospitable environment for fly breeding.

Regular turning and the composting process at the manure storage pad will ensure that flies and other pests do not reach significant numbers in this area.

Dead cattle will be composted by covering with straw and manure at the manure storage pad. This will ensure that crows, fox's, and other undesirable scavengers do not have access to carcasses as a food source which would lead to increasing populations over time.

If the strategies of food and habitat minimisation fail and the business experiences an increase in pest and vermin numbers because of feedlot operations, then registered extermination chemicals may be used to reduce the numbers.

6.10 Visual amenity

The feedlot is not visible to public roads or areas with access by the general-public. A minor track within the Watheroo National Park, near the boundary with the development premises, may allow glimpses of the feedlot in the distance.

The feedlot entrance and weigh bridge area will have attractive parks and gardens established with native trees and shrubs.

CSC has an existing customer base for beef sales. The proponent is keen for customers to visit the site to view the cattle in production. It is therefore the stated intention of the management that the facility, should be maintained in a “neat and tidy” condition at all times, and fit for customer inspection at any time. Facilities currently owned and managed by the proponent are testament to the level of housekeeping expected of management teams within the CSC business.

6.11 Pollution incident response management plan (PIRMP)

The business will develop and operate a pollution incident response management plan along the lines of PIRMP requirements legislated in the State of NSW in 2012.

This plan will be developed focusing on hazard identification, risk reduction and timely responsiveness.

Staff will be trained in the requirements of the PIRMP and it will be tested and reviewed annually.

6.12 Environmental monitoring and complaints register

The DWER groundwater licence for the premises has significant monitoring conditions attached. The proponents research has determined that the most significant environmental risk of the business to the environment is groundwater contamination. Monitoring this aspect is addressed in the conditions of the groundwater licence.

In addition to groundwater monitoring, the proponent intends to conduct soil analysis for each active cropping paddock on the premises at the end of each harvest cycle in the reporting year after the manure is applied to the cropland. This process will feed into future manure utilisation and ensure that targeted nutrient balance is attained.

A complaints register will be maintained by the feedlot manager detailing date and time of complaint and the nature of the issue including steps taken to address the issues raised by the complainant.

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8 Appendices

8.1 Appendix 1: The Authors

Peter Paradice B. Ag. Ec. (UNE)

Peter Paradice gained a degree in Agricultural Economics from UNE Armidale in 1978. His primary study in optional units was intensive animal industry focus on beef feedlots under Professor Yates.

Peter Paradice joined FJ Walker (a meat company that evolved through AMH to JBS) in 1979 at the Aberdeen Abattoir and then moved to Caroon Feedlot near Quirindi, NSW. After moving on from FJ Walker he proceeded to work with a significant number of feedlot and abattoir businesses over the next 27 years.

Peter Paradice was on the management team of several large feedlots and because of experience gained has been invited to design several large feedlots in his role as a consultant to industry since 2006.

Listed below in reverse chronology is the work experience of Peter Paradice.

- Director - Beef & Feedlot Industry Consultancy. February 2006 - to present
- General Manager (Large Feedlot Operation Ravensworth Feedlot) 2002 - February 2006
- Feedlot Manager. (Large Abattoir-Feedlot-Farm Complex-Rockdale Beef) 1989 – 2002
- General Manager Feedlots (Two Twynam Feedlots) 1986 – 1989
- International Management Experience Feedlots and Abattoirs (South Africa) 1985 – 1986
- Executive Officer, Meat & Livestock – Farmer Rep. Organisation (NSW LGPA) 1982 – 1985
- Management Trainee & micro-economic analyst. FJ Walker Aberdeen & Caroon Feedlot 1979 – 1981
- Bachelor of Agricultural Economics. (Majoring in Business Management) 1975 – 1978
- Higher School Certificate. 1973

Graham Barrow B. E. (Agr)

Graham Barrow gained a degree in Agricultural Engineering from Melbourne University in 1974. His primary interest was in relationships between soil and water and impacts upon productivity and the environment.

Graham joined the Soil Conservation Service of NSW in June 1975 as a Soil Conservationist providing engineering advice on dams, erosion control structures and salinity. He has subsequently worked in the fields of irrigation, horticulture, salinity, catchment management and environmental management for both government and private organisations. He currently operates as a private consultant, principally in the field of sustainable management of wastewater.

Listed below in reverse chronology is the relevant work experience of Graham Barrow.

- Self-employed Agricultural/environmental consultant. 2015 to present.
- Principal Engineer, EnviroAg Wagga Wagga, 2011 to 2015.
- Regional Manager North East, Environment Protection Authority, Victoria. 1999 to 2005.

- Senior Irrigation Advisor, Department of Natural Resources and Environment, 1998 to 1999.
- Executive Officer, North Central Catchment and Land Protection Board, 1997.
- Officer in Charge, Department of Natural Resources and Environment, Kerang, 1995 to 1997.
- Project Officer, Department of Agriculture, Swan Hill, 1994 to 1995.

8.2 Appendix 2: Feedlot design drawings

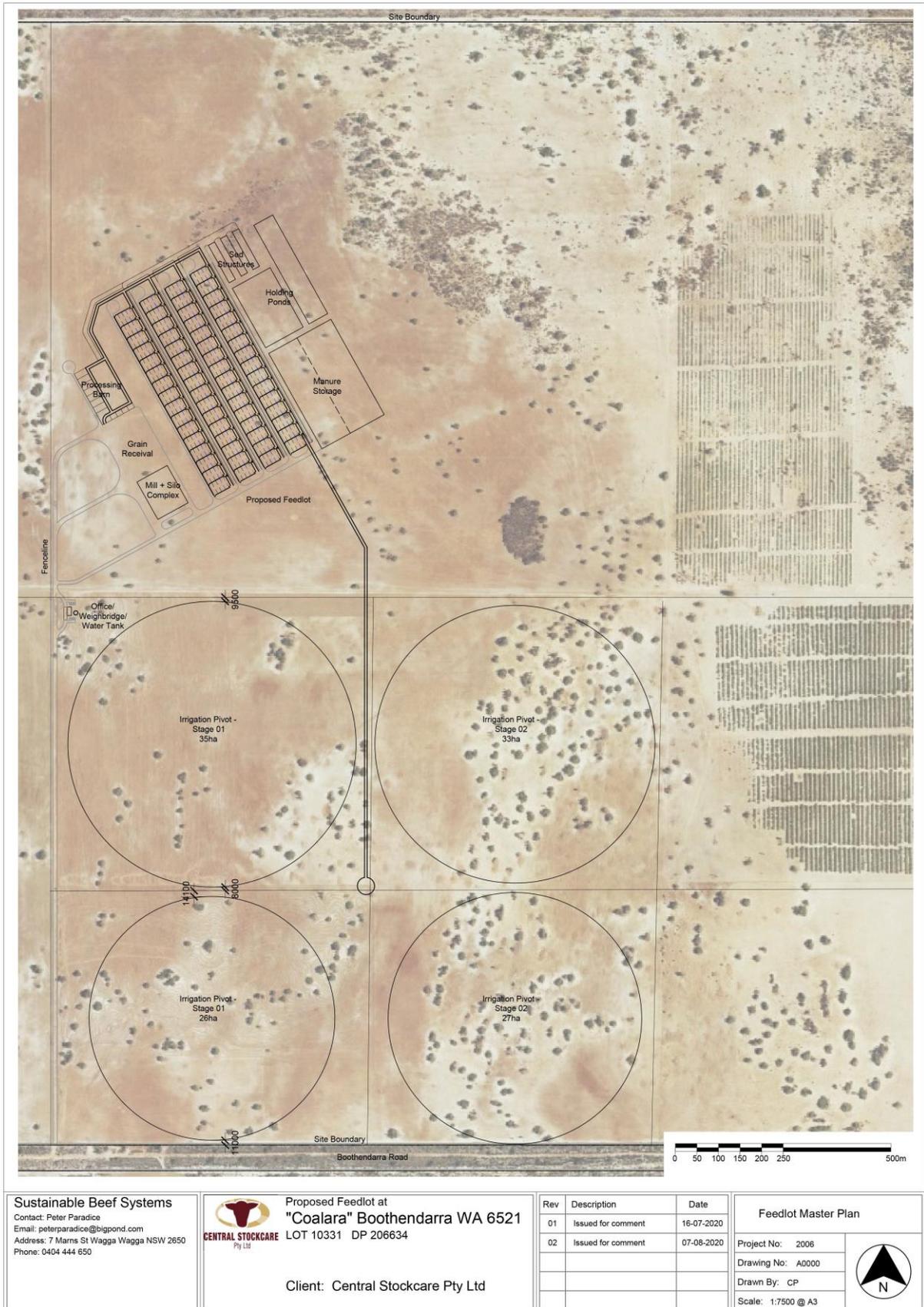
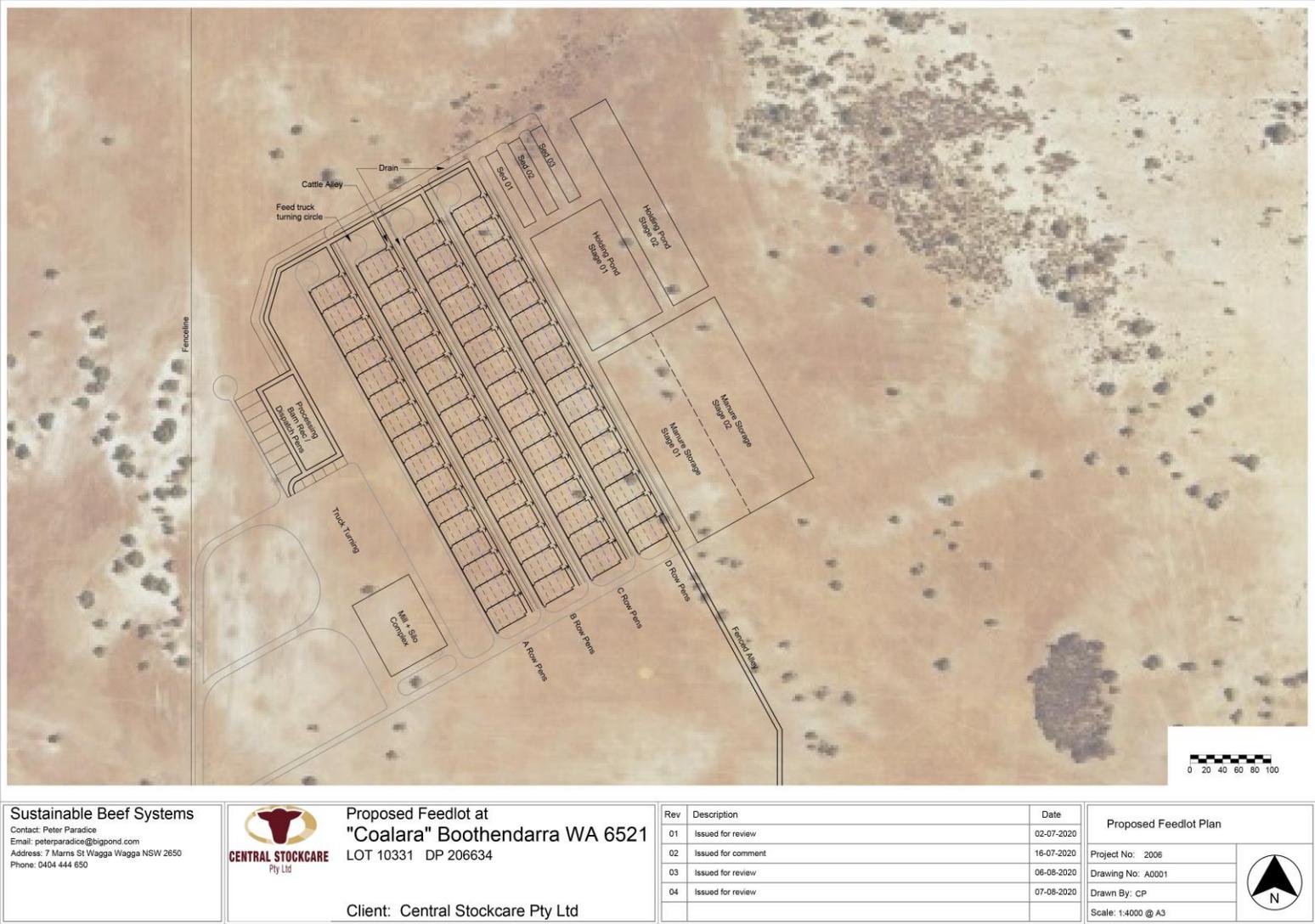


Figure 16: Feedlot master plan including proposed freshwater irrigation pivots



Sustainable Beef Systems
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**Proposed Feedlot at
 "Coalara" Boothendarra WA 6521**
 LOT 10331 DP 206634
 Client: Central Stockcare Pty Ltd

Rev	Description	Date
01	Issued for review	02-07-2020
02	Issued for comment	16-07-2020
03	Issued for review	06-08-2020
04	Issued for review	07-08-2020

Proposed Feedlot Plan	
Project No:	2006
Drawing No:	A0001
Drawn By:	CP
Scale:	1:4000 @ A3



Figure 17: Proposed feedlot feedyard layout



Figure 18: Feedlot development Stage 1

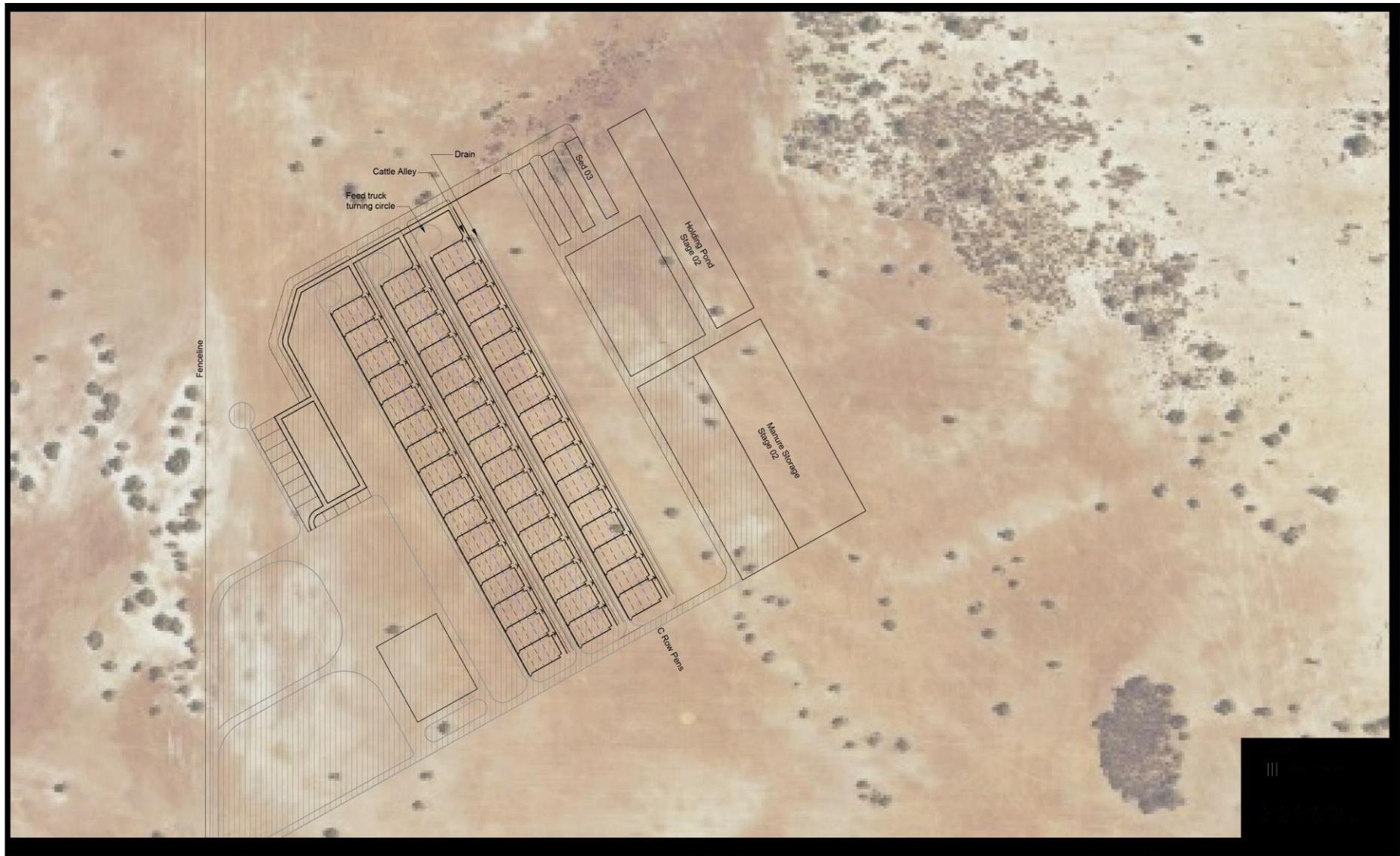


Figure 19: Feedlot development Stage 2 – add C row, sed 3, pond 2 & extend manure storage

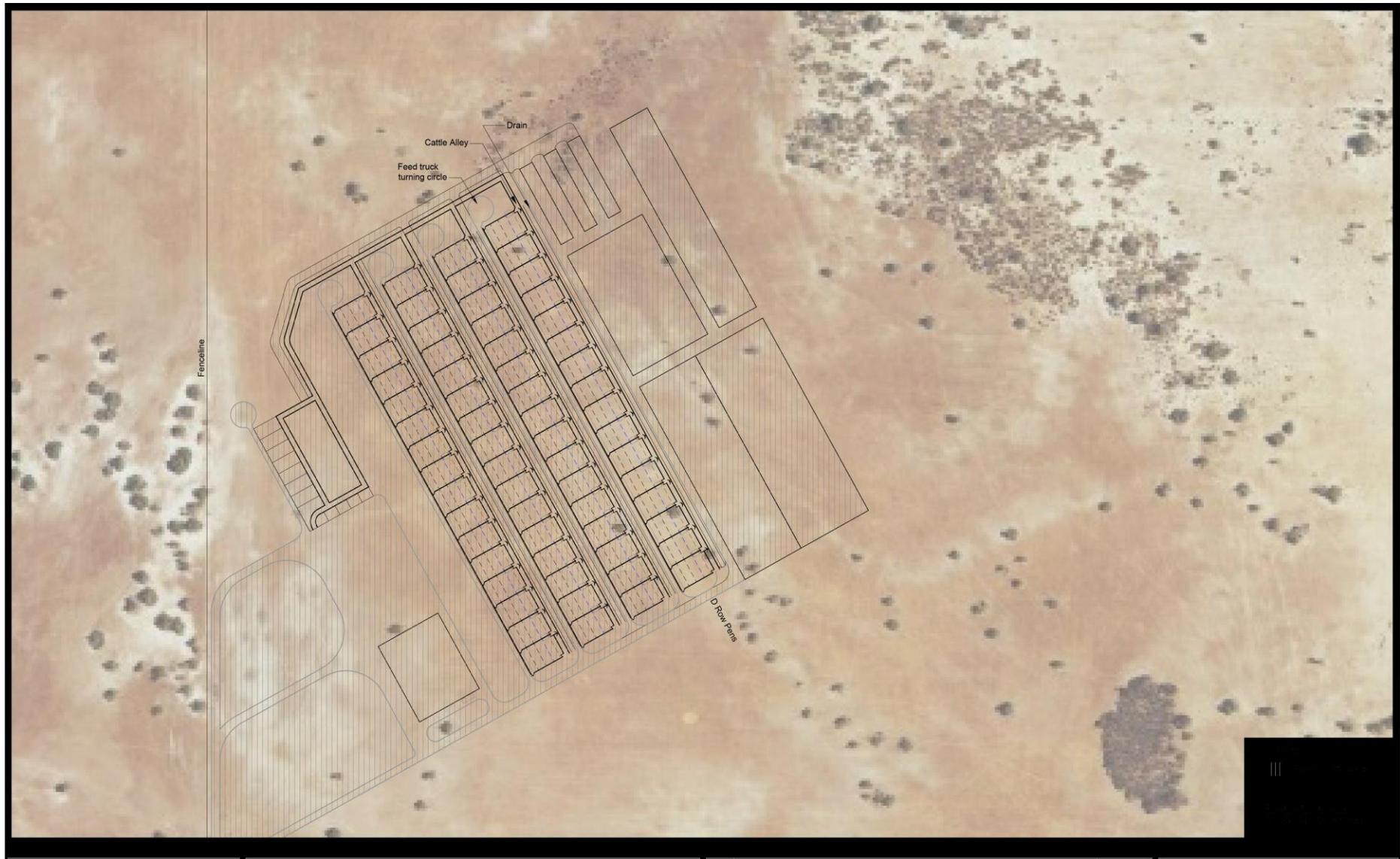


Figure 20: Feedlot development Stage 3 – addition of D row

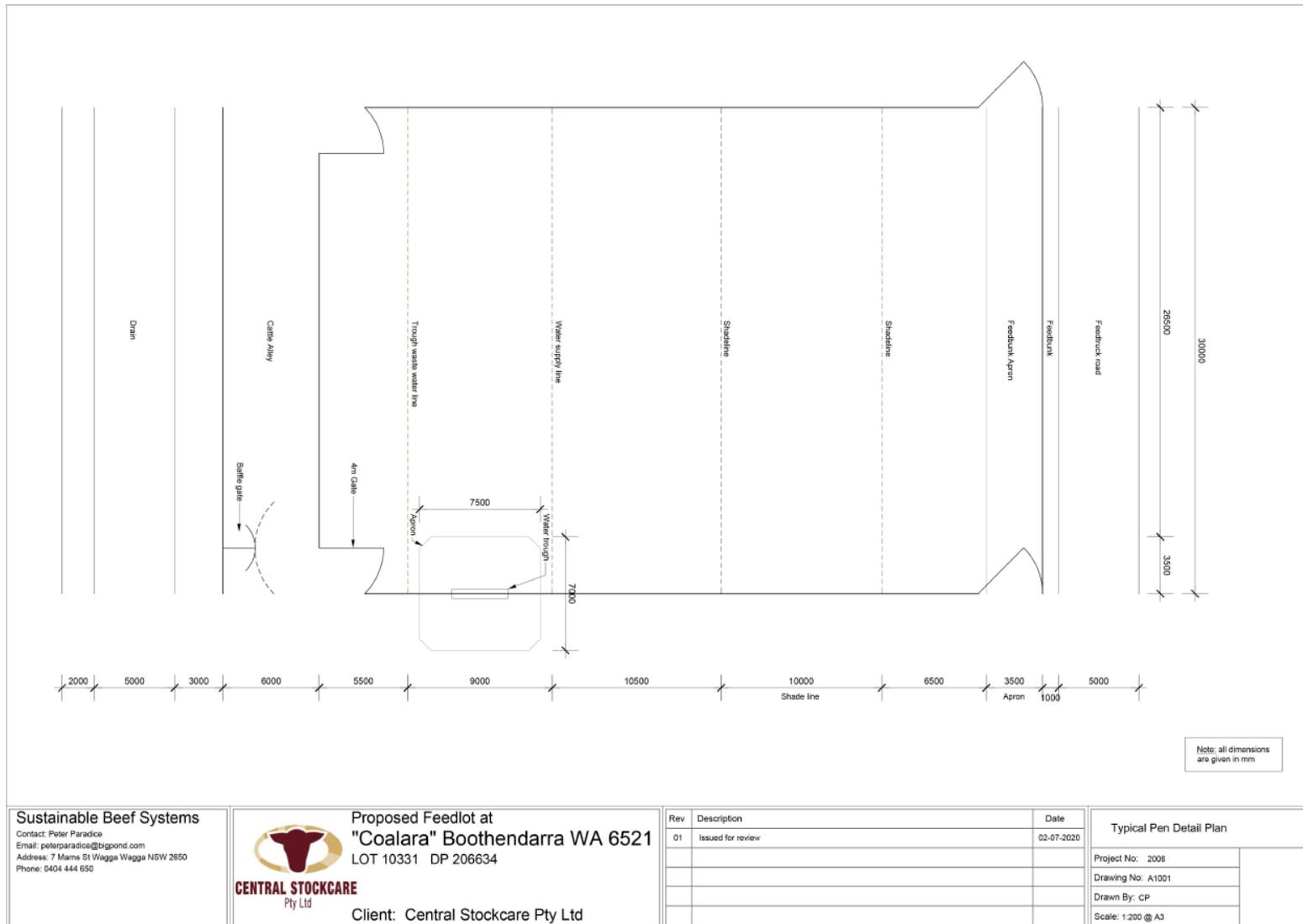


Figure 21: Typical Pen Detail Plan

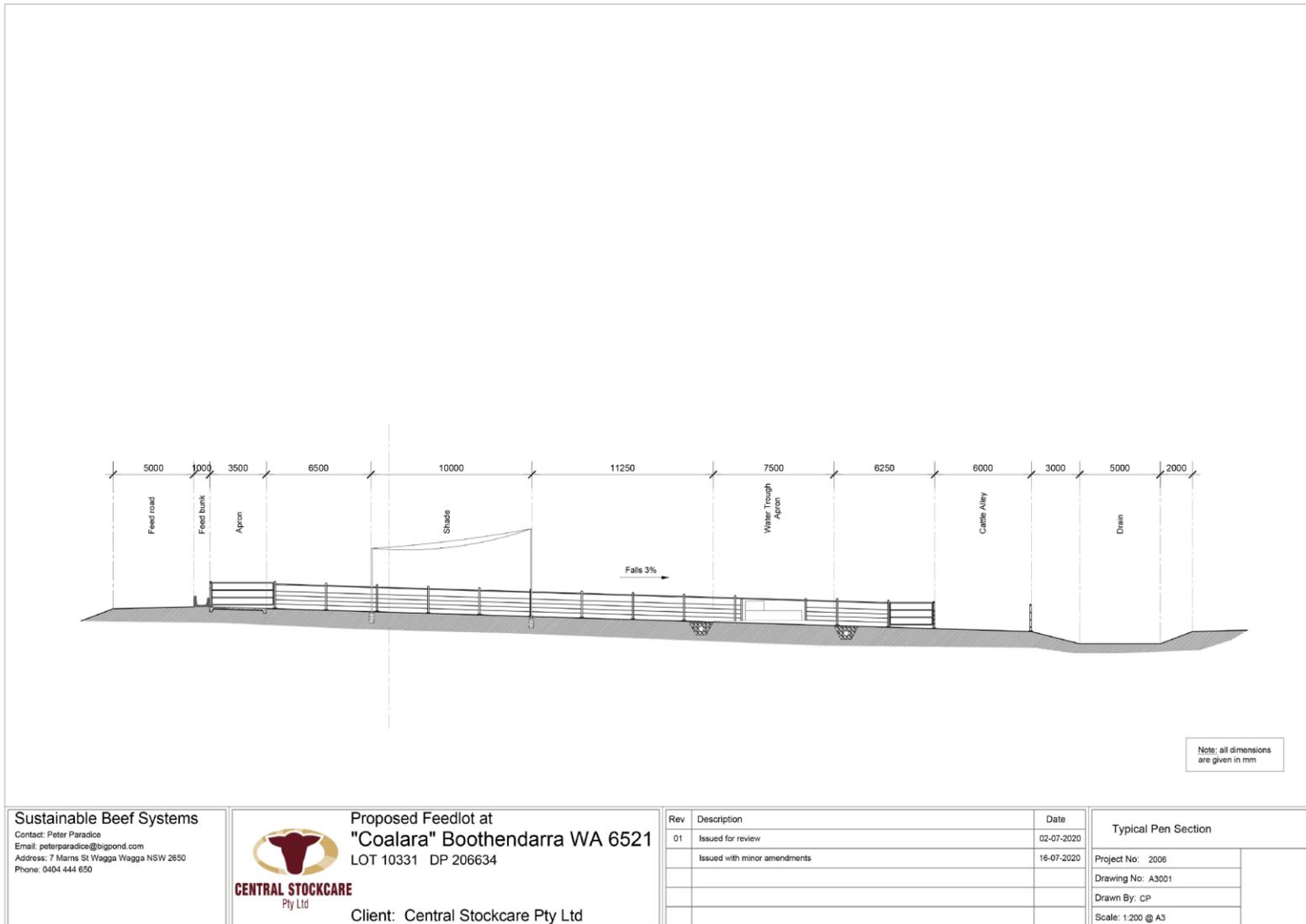


Figure 22: Typical Pen Section

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Proposed Feedlot at "Coalara" Boothendarra WA 6521
 LOT 10331 DP 206634

CENTRAL STOCKCARE
 Pty Ltd
 Client: Central Stockcare Pty Ltd

8.3 Appendix 3: Feedlot effluent pond dimension calculations

Coalara Feedlot specifications and dimensions					Aug-20	
Total Head - SCU	8000					
Head per pen - SCU	125					
Total standing area per pen - m2	1350					
Standing area per SCU - m2/hd	10.8					
Total number of pens to final stage	64					
Pen layout	Contour	Front to back				
Feed road width m	5					
Bunk width m	1					
Pen depth m	45					
Cattle alley width m	6					
Drain reserve width m	10					
Northern drain reserve length	268					
Bunk length per pen m	30					
Pen number per section #	32					
Number of sections #	2					
Rows per section #	2					
Pens per row #	16					
Manure pad and ponds areas width - m	180					
Manure pad length - m	270					
Sed terrace and pond reserves length - m	270					
Head per pen hd	125					
Bottom reserve - pen to alley m	35					
Top reserve - road to pen m	10					
Centre to centre per row m	67					
Rec & dispatch pens #	4					
Hospital pens #	2					
Post - Processing pens #	5					
Processing facility and races #	1					
				Summer Runoff Coeff Oct - Apr	Winter Runoff Coeff May - Sept	
Feedlot areas footprint - m2	Total	Stage1	Stage2			
Standing area metres	86400	43200	43200	50%	80%	
Receival/dispatch/processing barn	12000	12000		50%	80%	
Roads and drains in the feedyard	33600	16800	16800	80%	90%	
Northern drain A16 to sed terraces	2680	2680		80%	90%	
Manure storage & processing area	48600	32076	16524	40%	50%	
Top of Row Reserve areas	2680	1340	1340	40%	50%	
Bottom of Row Reserve areas + other res	24760	12380	12380	40%	50%	
Ponds and sed reserve total surface area	48600	32076	16524	99%	99%	
Total feedlot controlled area	259320	152552	106768	60%	76%	
		59%	41%			

Coalara Feedlot Runoff & Evaporation Model														RevC
Watheroo Rainfall Summary statistics for all years 1899-2020														
Model inputs														
Rainfall Watheroo	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	
Mean	13.3	16.7	19.4	21.5	55	78.8	75.6	56.3	33.6	20.5	10.3	9.3	410.3	
90th %ile annual basis	28.6	32.1	32.2	31.6	67.5	93.1	74.9	59.8	37.0	26.7	21.1	16.5	521	
95th %ile annual basis	36.1	38.8	42.6	36.2	70	100	80.2	62.8	38.3	29.6	21.3	20.7	576.6	
Highest on record by month	99.1	120.6	188.2	108	182.7	225.9	174.1	141.3	85.1	73.9	50.2	62.8		
Days inMth	31	28	31	30	31	30	31	31	30	31	30	31	365	
Monthly panevap- Moora - BOM - 1897-2004	366	333	291	173	113	73	70	91	124	193	269	360	2456	
Monthly pan evap - Coalara (Moora-3Springs)	381	348	304	187	123	76	82	98	132	207	279	371	2588	
Pan to Dam evap % WA for the zone	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	
Monthly Dam evap - Coalara	305	278	243	150	98	61	65	79	105	166	223	297	2070	
Monthly rain - Mean	13.3	16.7	19.4	21.5	55	78.8	75.6	56.3	33.6	20.5	10.3	9.3	410.3	
Runoff Coefficient by month - est page 1	60%	60%	60%	60%	76%	76%	76%	76%	76%	60%	60%	60%	67%	
Pond size - basis National guidelines spill max 1 in 10 years with irrigation to compost														
90th %ile ControlAreaCatch	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	
Irrigation Runoff ML	4.46	5.00	5.01	4.92	13.29	18.34	14.76	11.78	7.30	4.16	3.28	2.57	94.87	
Pond area m2	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	
Evap potenl ML	5.64	5.15	4.50	2.77	1.81	1.13	1.21	1.45	1.95	3.07	4.12	5.49	38.30	
Irrigation to manure compost area ML				2.69	5.46	3.00	1.00	1.00	3.00	5.00	9.50	12.00	42.65	
Net mthly ML	-1.18	-0.15	0.51	-0.54	6.02	14.21	12.56	9.33	2.35	-3.91	-10.35	-14.92		
Accumulate ML	-1.18	-0.15	0.51	-0.04	6.02	20.23	32.79	42.12	44.47	40.56	30.21	15.29	15.29	
Pond depth m	-0.06	-0.01	0.03	0.00	0.33	1.09	1.77	2.28	2.40	2.19	1.63	0.83		
Pond size - basis National guidelines spill max 1 in 20 years with irrigation to compost														
95th %ile ControlAreaCatch	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	
Evap Runoff ML	5.62	6.04	6.63	5.63	13.80	19.71	15.81	12.38	7.55	4.61	3.31	3.22	104.29	
Pond area m2	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	
Evap potenl ML	5.64	5.15	4.50	2.77	1.81	1.13	1.21	1.45	1.95	3.07	4.12	5.49	38.30	
Irrigation to manure compost area ML			3.02	2.86	5.35	3.00	2.50	3.00	3.00	5.00	10.00	13.00	50.73	
Net mthly ML	-0.02	0.89	-0.89	0.00	6.63	15.58	12.10	7.92	2.60	-3.46	-10.81	-15.27		
Accumulate ML	-0.02	0.89	0.00	0.00	6.63	22.21	34.31	42.23	44.83	41.37	30.56	15.29	15.29	
Pond depth m	0.00	0.05	0.00	0.00	0.36	1.20	1.85	2.28	2.42	2.24	1.65	0.83		
Pond size - in the mean year with irrigation to compost														
MeanYr ControlAreaCatch	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	
Evap Runoff ML	2.07	2.60	3.02	3.35	10.84	15.53	14.90	11.10	6.62	3.19	1.60	1.45	76.26	
Pond area m2	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	
Evap potenl ML	5.64	5.15	4.50	2.77	1.81	1.13	1.21	1.45	1.95	3.07	4.12	5.49	38.30	
Irrigation to manure compost area ML				0.57	5.36	3.00	1.00	1.00	3.00	5.00	7.00	4.35	30.28	
Net mthly ML	-3.57	-2.55	-1.48	0.00	3.67	11.40	12.69	8.64	1.67	-4.88	-9.52	-8.39		
Accumulate ML	-3.57	-2.55	-1.48	0.00	3.67	15.07	27.76	36.40	38.08	33.20	23.68	15.29	15.29	
Pond depth m	-0.19	-0.14	-0.08	0.00	0.20	0.81	1.50	1.97	2.06	1.79	1.28	0.83		

8.4 Appendix 4: Guideline separation distances

The Guidelines (Appendix B page 44) provide a detailed description of separation distance.

Figure 23 details derived separation distance guidelines and the distance to receptors for a feedlot stocked at a density of 10.8m²/SCU.

Coalara Feedlot Separation Distance Calculations					16/06/2020	
The separation equation				Density	10.8	
S = S1 x S2 x S3 X S4 X S5						
Where				Tree Farm	ForestHut	Watheroo
S1	Design and management factor			63	63	63
S2	Receptor type factor			0.3	0.3	1
S3	Topography or terrain factor			0.9	0.9	0.9
S4	vegetative cover factor			0.9	0.7	0.9
S6	Wind direction factor			1.5	1.5	1.5
Calculated S factor				22.9635	17.8605	76.545
Head number - SCU				8000	8000	8000
Square Root of Head Number				89.44272	89.442719	89.4427191
Separation distance required - metres				2054	1597	6846
Single house - metres				6000	7000	
Watheroo - small town - metres						28000
Badgingara - small town - metres						30000

Figure 23: Separation distance calculations Coalara Feedlot

The Works Approval Application requires distance and direction information from premises to nearby environmentally sensitive receptors and aspects. Figure 24 addresses this requirement.

Type / classification	Description	Distance + direction to premises boundary	Proposed controls to prevent or mitigate adverse impacts (if applicable)
Environmentally Sensitive Areas ¹	There are no listed ESA's in proximity of this land parcel	N/A	N/A
Threatened Ecological Communities	None known or listed in proximity to this land parcel	N/A	N/A
Threatened and/or priority fauna	None known or listed in proximity to this land parcel	N/A	N/A
Threatened and/or priority flora	None known or listed in proximity to this land parcel	N/A	N/A
Aboriginal and other heritage sites ²	None known or listed for this land parcel	N/A	N/A

Type / classification	Description	Distance + direction to premises boundary	Proposed controls to prevent or mitigate adverse impacts (if applicable)
Public drinking water source areas ³	Watheroo DWC	21 km to the ESE of the premises	N/A
Rivers, lakes, oceans, and other bodies of surface water, etc.	Jurien Bay	70 km due west of premises	N/A
Acid sulfate soils	None known or listed for this land parcel	N/A	N/A
Other			

Figure 24: Nearby environmentally sensitive receptors and aspects by distance

Figure 25 on the following page depicts the closest receptor to the feedlot. The red circle has a 6 kilometre radius from the edge of the closest pens. The closest receptor is 6 kilometres. The closest receptor is Lot 2297, Coalara Road, Boothendara also referred to as Tree Farm in Figure 18. The Guideline calculations derive a suggested minimum required separation distance of 2 kilometres.



Figure 25: Distance to nearest rural receptor - R1- 6km radius circle (Google Pro 27/06/20)

8.5 Appendix 5: WA Dept. of Planning, Lands and Heritage interactive planning data

8.5.1 Land Information

Polygon Number 580081
Land Act (Type 2) (15497886m²)
Lot Number 10331
Parent Lot Number 10331
Locality DANDARAGAN

8.5.2 Region Scheme

Details: No RS found

8.5.3 Local Planning Scheme

Shire of Dandaragan Scheme No. 7
Rural (dandaragan)
No R-code
No Restricted or Additional Uses

8.5.4 State Planning Policies

No location specific SPP's were found

The site is surrounded by land on the premises that is not in a Bush Fire Prone Area. A small area of the premises approximately 2 km to the east of the proposed feedlot site is identified as Bush Fire Prone (2019).

8.5.5 Development Assessment Panels

No DAP's were found in the locality. The development falls in Zone 5 of the DAP's.

8.5.6 Structure Plans

No Structure Plans found

8.5.7 Aboriginal Settlement Layout Plans

No Layout Plans found

8.5.8 Aboriginal Lands Trust Estate

No ALT Estate found

8.5.9 Aboriginal Heritage

No Aboriginal Sites or Other Heritage Places found

8.5.10 Historic Heritage

No Historic Heritage Places (Heritage Council) found

No Historic Heritage Local Heritage Survey (LGA) found

8.6 Appendix 6: Bore log data Agaton 12 (AG12)

AGATON 12 (AG12)

BORE COMPLETION REPORT

LOCATION AND IDENTIFICATION

OWNER	Department of Water		
LOCATION	Located about 27.3 km W-NW of Watheroo. Situated on the south side of Boothendarra Road, 4.6 km east of Coalara Road, between Locations 10331 and 10332.		
MAP SHEET	1:250 000 SH 50-10 Moora; 1:100 000 Badgingarra (2037)		
MGA REF	Zone 50	Easting 382612 mE	Northing 6652475 mN
PURPOSE / STATUS	Exploratory / Long term water level observation		
WIN PROJECT CODE			

BORE CONSTRUCTION

DRILLED BY	Lambert Drilling Co. Pty Ltd		
DRILLER(S)	A O'Brian, R Fagan		
DRILL RIG	Mayhew 2000		
METHOD	Mud rotary		
DATE	3rd March 1968 to 2nd April 1968		
ELEVATION	(NOTE: points measured above ground are NEGATIVE relative to the datum plane – ground level)		
		Surveyed levels <i>GPS Surveyed 08/06/2014</i>	Relative to ground level
	Ground level	274.89 m AHD (\pm 0003 m)	0 m
	6" Steel Casing top	275.371 m AHD (\pm 0003 m)	- 4.81 m
	Cement block		
DRILLED DIAMETER	Bore	Depth (m BGL)	Bit size in mm (inch)
	Pilot hole	11.6 to 708.7 m	152.4 (6-inch)
	Reaming	11.6 to 342.3 m	187.3 (7 $\frac{3}{8}$ -inch)
TOTAL DEPTH	708.7 m BGL		
CASING	Interval (m BGL)	Type	
	0 – 11.6	254 mm (10-inch) Steel Conductor Casing	
	0 – 342.3	152 mm (6-inch) Steel Casing; slotted over 251.1 – 263.3, 281.9 – 288 and 318.2 336.5m	
DRILLING MUD & ADDITIVES	Volclay, Lovis and caustic		
REMARKS	Cement plug at 342.3 to 352.6 m depth.		

GEOLOGICAL DATA

SAMPLING INTERVAL	3 metres (10 feet)		
LOGGED BY	J. R. Passmore, W. A. Davidson, J. J. Martins (GSWA Hydrogeologist)		
SAMPLE STORAGE	Department of Mines and Petroleum Perth Core Library, Carlisle		
CORE			
CORE NO.	INTERVAL (m BGL)	Recovery	
		Metres	%
1	91.4 – 94.5	1.0	33
2	115.8 – 118.9	0.86	28
3	182.9 – 185.9	1.68	55
4	243.8 – 246.9	0.25	8
5	269.7 – 270.7	0.58	64
6	306.3 – 306.9	0.15	25
7	336.8 – 339.9	0.20	7
8	373.4 – 376.4	1.68	55
9	428.2 – 429.5	1.22	100
10	487.7 – 490.7	2.59	85
11	592.8 – 594.4	1.30	85
12	641.6 – 642.8	1.22	100
13	702.6 – 703.2	0.61	100

LITHOLOGICAL SUMMARY LOG

Depth (m BGL)		Formation	Lithology
0	192 ^a	Leederville Formation	Sand
192	262	Parmelia Group – undifferentiated formation	Sandstone, siltstone and shale
262	640	Parmelia Group – Carnac Formation	Siltstone, silty sandstone and shale
640	709	Parmelia Group – Otorowiri Fm	Siltstone and clay

Note: a – base depth of Leederville Formation uncertain.

PALYNOLOGY SUMMARY

Depth (m BGL)	Zone	Age	Stratigraphic Unit	Comments
115.8 – 182.9	B. limbata?	Lower Cretaceous	?Warnbro Group	
269.7 – 641.6, 701	B. enaeabbaensis	Lower Cretaceous	Parmelia Gp (Carnac Fm)	

HYDROLOGICAL DATA

DEPTH (m BGL)	278.9 – 283.5	251.2-263.3, 281.9-288.0 & 318.2-336.5
FORMATION	Parmelia Group – Carnac Formation	Parmelia Group – Carnac Formation
AIRLIFT RATE (m ³ /day)	NA	655
WATER LEVEL (m BGL)	NA	61.87
WATER LEVEL (m AHD)	NA	213.02
DATE	NA	April 1968
SALINITY (TDS mg/L) ^a 448.0 – 463.3 m 116.1 – 229.2 m 223.1 – 229.2 m	441	507
CONDUCTIVITY (mS) @ 20°C	0.79	0.76

Notes: a – summation of ions

PUMPING TEST SUMMARY

TEST INTERVALS (m BGL)	251.2-263.3, 281.9-288.0 & 318.2-336.5
PUMP	Ornell turbine
PUMP INTAKE DEPTH (m BGL)	121.9
TEST TYPE	Constant rate
PUMP RATE (m ³ /day)	2182.5 (25.26 L/s) Decreasing to 2072.7 to 2127.2 m ³ /day during test
DURATION	48 hrs
MAX DRAWDOWN (m)	7.47
TRANSMISSIVITY (m ² /day)	594.6
HYDRAULIC CONDUCTIVITY (m/day)	13.7
SWL (m BGL)	61.87
DATE OF TEST	8 – 10 th May 1968
ANALYSIS METHOD	Cooper – Jacob
ANALYSIS BY	T. Bestow

MUD ROTARY DRILL CUTTING SAMPLE LOG

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
0.0	3.1	SAND	90% SAND, quartz grains from shade of brownish and bluish to transparent, grain size varies from fine to very coarse and granular, grains generally sub angular; silty sand as the matrix between the quartz grains; sorting is not too good, 10% laterite, pebble grains size lateritic chips slightly intercalated with quartz grains, traces of feldspar grains of fine grain size
3.1	6.1	SAND	The same as for 3.1m with a slight increase in laterite and less granular quartz grains
6.1	9.1	SAND	95% SAND, a very coarse grains sand with quartz of various colours, greyish, brownish, mostly bluish and colourless about 90% of sand is very coarse to granular and 10% is medium size grains; in shape angular to sub angular, sorting is fair, very slightly feldspathic, 5% laterite as for 3.1 to 6.1m
9.1	12.2	SAND	95% SANDS, the quartz grains very slightly greyish in colour, grains size varies from very fine to very coarse although about 80% of the quartz grains are of medium grain size fairly well sorted, in shape grains are generally sub-angular to angular, some ferruginised quartz grains with traces of a silty matrix; 3-4% laterite, lateritic quartz grains coarse to very coarse in size; 1-2% very minute black chips possibly lignite or some ferruginous heavy mineral
12.2	18.3	CLAY/SILT	50% CLAY, light greyish clay contaminated with the drillers mud slightly feldspathic, small quantities of kaolinite; 40% silt, very fine grains of silt, light grey in colour, made up of minute particles of feldspar and quartz; 5% sand, light greyish quartz grains, fine to very fine grain size, angular to sub angular in shape, some ferruginous quartz, 5% laterite, grains of lateritic quartz chips of grain size coarse to granular

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
18.3	21.3	SAND	95% SAND, brownish colour sand quartz grains, generally very coarse although some medium to coarse grains present. Some quartz ferruginous shape sub-angular to angular, 5% laterite, lateritic granules intercalated with quartz grains
21.3	24.4	SAND	As above, with percentage of laterite dropped and the presence of decomposed feldspar, kaolinite
24.4	27.4	SAND	As for 21.3m with traces of kaolinite
27.4	30.5	SAND	As for 21.3m and as above, a few minute black heavies, sorting not very good
30.5	33.5	SAND	93% SAND, quartz grains slightly greyish brown in colour, ranging from fine to very coarse grains, sorting is fairly well most of the quartz being coarse to very coarse, quartz grains from sub rounded to angular, slightly ferruginised, 2-3% silt, a brownish colour silt which is lightly micaceous and traces of kaolinite; 5% hematite, dark red brown chips of ferruginous matter possibly hematite
33.5	36.6	SAND	97% SAND, quartz grains grey-brown in colour, some shade of blue and blue-grey, the grains generally coarse grains although very coarse, granules, medium and fine grain present, sorting of the quartz is not too bad, grains generally sub angular to sub rounded, some quartz ferruginised and traces of laterite and black brown hematite looking chips. 2-3% silt, a light brown-grey silt of very minute quartz, particles and very slightly micaceous
36.6	39.6	SAND	95-99% SAND, sand grains quartz greyish in colour generally medium to coarse grain with a small percentage of very coarse and granular size grains and some fine grains, sorting is fairly well, grains are sub rounded to sub angular, 1-2% silt, a greyish silt mixed with traces of a fine black heavies and some kaolinite
39.6	42.7	SAND	As for 39.6m with no black heavies or kaolinite
42.7	57.9	SAND	90% SAND, sand grains of quartz greyish in colour, grain size varying from very fine to very coarse, sorting fairly poor, grains generally sub rounded, few grains of lateritic material and some of the quartz coated with a little kaolinite; 10% silt, a greyish brown silt mixed up with the minute black ferruginous heavies
57.9	61.0	SAND	95-99% SAND, light grey sand, quartz grains range from very fine to very coarse and even granular, sorting is fairly poor, the quartz grains are sub angular in shape, few quartz grains are sub angular in shape, few quartz grains are bluish-green in colour and few others are brownish, traces of silt, very small quantity of silt greyish in colour with very few flakes of mica
61.0	64.0	SAND	95% SAND, quartz grains greyish in colour generally very fine to coarse and small amount of very coarse or granular grains, sorting is poor, grains generally sub angular to sub rounded, some grains brownish, 5% silt, light brown silt with traces of mica and kaolinite material
64.0	67.1	SAND	Same above, but grains size is more medium size to very fine size, silty material increased a little
67.1	70.1	SAND	90% SAND, brownish sand, the quartz are from fine to medium grain size with a few outstanding granular sized grains, grains sub rounded and fairly well sorted, 10% silty clay, a silty clay light brownish to buff in colour mixed with drillers mud and some kaolinitic material
70.1	73.2	SAND	80% SAND, red brown sand, quartz particles are generally fine to medium grained and sub rounded, the sorting is fairly good, 20% ferruginous matter, small medium grain sized sub rounded lateritic and other ferruginous matter
73.2	76.2	SAND	SAND, a brownish red sand, quartz particles, medium very coarse grained, not well sorted, in shape sub angular two tiny kidney shaped fossils
76.2	79.3	SAND	90% SAND, light reddish brown sand where quartz are medium to very coarse grained but fairly well sorted, sub rounded to sub angular in shape, 10% ferruginous matter including some laterite of coarse grain size
79.3	82.3	SAND	Same as for 73.2m
82.3	85.3	SAND	Same as for 73.2m with less of the reddish ferruginous matter
85.3	88.4	SAND	SAND, the same as for 76.2m with some ferruginous matter and laterite
88.4	91.4	SAND	As for 88.4m well sorted
91.4	94.5	SAND	90% SAND, a brownish grey sand, quartz grains generally coarse to very coarse grained being fairly well sorted, some various coloured quartz chips, grains generally sub rounded to rounded; 5% laterite, about 5% laterite mixed with a little quartz mud at times with some feldspars; 5% silt, dark grey silt with a few chips of siltstone and mixed with a very fine quartz and feldspar parts and some drillers mud
94.5	97.5	SAND	Same as for 94.5m with a slight increase of siltstone chips and sorting not as good as at 94.5m and traces of mica in the silt
97.5	100.6	SAND	90% SAND, greyish brown sand with quartz grains from medium to very coarse, sorting is not very good, various coloured quartz grains, in shape they are generally sub-angular, some ferruginous looking quartz, and a few grains of lateritic material. 10% siltstone, small dark grey sub-rounded chips of siltstone mixed with very fine quartz grains
100.6	103.6	SAND	99% SAND, the sand is greyish in colour with a slight bluish and brownish tinge, light blue quartz (almost smokey quartz) is fairly abundant, some grains of ferruginous quartz, grains size from medium to very coarse and sorting is not good, grains are generally sub-rounded in shape, traces of mica flakes, some chips of siltstone and some lateritic material
103.6	106.7	SAND	As for 103.6m with almost no laterite
106.7	109.7	SAND	SAND, is of a greyish colour although bluish and brownish quartz chips present in quite appreciable amounts quartz grains range from very fine to very coarse and even granular, not good sorting, grains are sub-angular to sub rounded, some lateritic looking chips associated with the quartz; feldspars, creamish white grains of feldspars

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
			generally very coarse to granular in size; clay, a light grey clay forming the matrix between the sand grains with black heavies
109.7	115.8	SAND	90% SAND, dark greyish sand due to the coal colouring and clayey colouring, grains size from fine to very coarse not well sorted, some ferruginised quartz and other bluish quartz chips, the chips are sub rounded to sub angular, 2% feldspar, a creamish white feldspar very coarse to granular in size; 2-3% coal, chips of brittle coarse, 5% clay a dark greyish clay forming a matrix for the sand, feldspar and coal
115.8	118.9	CLAY	98% CLAY, a darkish grey clay looking slightly shaley; 2% sand, fine to very fine sand quartz grains, sub-angular in shape
118.9	121.9	CLAY	90% CLAY, dark greyish clay as above, with a minor amount of silt in it; 10% sand, grain greyish to colourless in colour fine to medium grain, sub rounded and fairly well sorted, some feldspar and coal chips found associated
121.9	125.0	CLAY	As above, but slightly micaceous and only traces of feldspar
125.0	128.0	CLAY/SAND	60% CLAY, a greyish (dark) clay with some amount of silt in it as for 118.9m; 40% sand, greyish sand, quartz grains from medium to very coarse, sorting not very good in shape sub angular to sub rounded, traces of granular sized feldspars and some chips of coal
128.0	131.1	SAND/CLAY	70% SAND, a greyish (dark) sand, quartz chips are from medium to very coarse and some granular, variously coloured quartz chips, in shape from sub angular to angular, minor amounts of feldspars with some coal and partially decayed plant life; 30% clay, a darkish grey clay forming a matrix for the quartz, minor amount of silt mixed with the clay
131.1	134.1	SAND/CLAY	85% SAND, a light greyish sand, quartz chips coloured dark grey by the clay, in size from medium to very coarse but fairly well sorted, in shape sub angular to angular, about 5% of quartz is feldspar chips and coal parting chips, slightly micaceous, 15% clay, a dark grey clay forming the matrix holding quartz chips together
134.1	137.2	SAND	As above, but less clay about 5% and decrease in feldspar and coal
137.2	140.2	SAND	98% SAND, greyish brown sand where quartz is medium to coarse grains, fairly loose and well sorted, chips of quartz sub rounded, some ferruginised and variously coloured quartz very slightly micaceous with traces of pyrite and coal, 2% clay, a grey brown silty clay where silt is in small amounts
140.2	143.3	SAND/COAL	Similar to above, but with a high percentage of coal, may be 40% of coal
143.3	146.3	SAND	99% SAND, grey coloured sand where quartz is from medium to very coarse grain size, sorting is fair, in shape quartz grains are sub angular, traces of feldspar and mica flakes, a fairly good amount of coal chips about 25 to 30 percent, and traces of pyrite; 1-2% clay, brownish grey clay with minor amounts of silt forming a matrix to the sand grains
146.3	149.4	SAND	As for 146.3m with no pyrite and slight increase in the clayey material and decrease in coal content
149.4	152.4	SAND	98% SAND, greyish sand where quartz are from medium to very coarse in size, fairly well sorted out, some ferruginous quartz and other coloured quartz chips, quartz grains rounded to sub rounded, and sand contains traces of pyrite, mica and feldspar with a little coal, 2% clay, a brown grey silty clay as at 146.3m
152.4	155.5	SAND	98% SAND, greyish sand where quartz from coarse to very coarse in size and well sorted, some amount of coloured quartz, fairly rounded to sub rounded, quartz contains a fair amount of pyrite and coal with traces of mica flakes, some ferruginous quartz also, 2% silt, a greyish clayey silt with mica flakes in it
155.5	158.5	SAND	As above with only traces of pyrite and less amount of coal chips
158.5	161.5	SAND	As for 155.5m with traces of feldspar but no ferruginous quartz or ferruginous matter
161.5	167.6	SAND	97% SAND, greyish coloured sand where quartz grains range from medium to very coarse, loose and well sorted, sub rounded in shape, minor amount of coal and pyrite and some amount of feldspar, some ferruginous quartz, 3% clay, a brownish grey silty clay with traces of mica flakes
167.6	170.7	SAND	SAND, a darkish grey sand where quartz is from very coarse to some granular, not too well sorted, grains sub rounded in shape, various coloured quartz chips, about 30 to 40% quartz contaminated with coal, granular chips of partly decomposed feldspar present; silt, brownish grey silt with a little of clay and small amount of tiny mica flakes
170.7	173.7	SILT/SAND	70% SILT, a greyish silt tending to become black because of high percent of coal, slightly clayey with minor amounts of mica flakes; 30% sand, a greyish coloured sand where quartz is coarse to very coarse and sorting is fairly good, grains are sub rounded in shape with very minor amounts of slightly decomposed feldspar
173.7	176.8	SILT/SAND	80% SILT, a blackish grey silt blackish colour due to coal dust in the silt, small amount of clay greyish in coloured with flakes of mica; 20% sand, a very coarse grey sand quartz grains coarse to very coarse fairly well sorted, some pyrite and feldspar grains also present
176.8	179.8	SAND	90% SAND, grey sands with quartz chips coarse to very coarse grains and minor amounts of granular grained quartz, sorting is fairly good, grains are sub rounded, some amount of coloured quartz with ferruginous quartz, about 10 to 15 percent of quartz is coal and feldspar grains and minor amounts of pyrite, 10% silt, a greyish black silt, black colour due to the coal fillings, mica flakes in the silt and small amount of greyish clay
179.8	182.9	SAND	90% SAND, grey-greenish sand where quartz grains are coarse to very coarse with minor amounts of granular grain sized quartz, sorting is fairly good and loose grains are sub rounded to rounded, some coloured quartz chips, minor amounts of feldspars and pyrite, 10% silt, grey silt with a slight greenish-grey colour due to the clayey material present, flakes of mica found with the clay and silt

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182.9	185.9	SILT/SAND	40% SILT, a greyish silt with flakes of mica; 40% clay, a darkish grey clay forming a matrix of the sand; 20% sand, quartz grains generally very coarse but medium to coarse present in minor amounts, sorting not too good sub angular in shape, minor amounts of feldspars pyrite and some chips of coal present
185.9	189.0	SAND/SILT/CLAY	40% SAND, a greyish sand medium to very coarse grained, sorting is fair, the grains of quartz are sub rounded to sub angular, feldspar chips and pyrite with minor amounts of coal found with the sand, 30% clay, a light greenish grey clay possibly slightly shaley, 30% silt, grey in colour forming a matrix with the clay for quartz grains, minor amounts of mica flakes with the silt
189.0	192.0	SAND/SILT	60% SAND, the sand is grey in colour with quartz grains of various colours some green looking and possibly glauconite, grain size from fine to very coarse, sorting is not good, in shape sub angular, feldspar and coal chips present; 10% clay, a greyish clay slightly shaley, 30% silt, grey coloured silt with very fine grains of quartz and mica flakes in minor amounts
192.0	195.1	SAND/SILT	As for 192.0 with only about 10% silt and 80% sand
195.1	198.1		70% SAND, light grey in colour, quartz grains fine to very coarse but few grains of fine quartz, sorting is fair, grains generally rounded to sub rounded, blue, brownish and greenish brown quartz chips, some grains, possibly glauconitic, minor amounts of feldspar, pyrite and coal, some very small black heavies; 30% silt, grey coloured silt, slightly clayey with mica flakes and small very fine quartz grains mixed with the silt
198.1	201.2	SAND	90% SAND, a greyish sand with quartz grains from brownish to colourless very fine to very coarse in size, but fairly well sorted, grains are angular to sub angular in shape, a fair amount of feldspars and some pyrite grains, 10% silt, light grey coloured clayey silt with minor amount of mica flakes and some very fine quartz grains in it
201.2	204.2	SAND/SILT	Same as for 201.2m with a little more silt about 15 to 20%
204.2	207.3	SILT/SAND	70% SILT, a darkish grey clayey silt clay possibly shale forming a thick matrix for the sand grains, slightly micaceous; 30% sand, the sand is greyish in colour with variously coloured quartz particles, in grain size the quartz is from medium fairly well sorted and sub angular in shaped, minor amounts of feldspar grains in the sand
207.3	210.3	SAND/SILT	60% SAND, greyish brown sand with quartz of various colours, in grain size fine to very coarse not well sorted, sub angular in shape, some amount of feldspar grains and a fair amount of coal, 40% silt, the silt is at 207.3m but with less of clay in proportion, mica is very slight
210.3	213.4	SAND/SILT/CLAY	As above with an increase in the amount of clay with the silt and decrease in the amount of coal in the sand
213.4	216.4	SILT/SAND	70% SILT, a brownish grey silt with greyish clay, slightly micaceous and forming a matrix for the sand; 30% sand, greyish sand grains where quartz is medium to coarse grained, sorting is fairly good, small amount of feldspar in the sand, very minor amounts of pyrite
216.4	219.5	SAND/SILT	As for 210.3m with more sand, about 70%
219.5	225.6	SAND/SILT	80% SAND, light grey sand, quartz from fine to coarse in grain size but fairly well sorted because fine to medium grains not many, variously coloured from brownish yellow to colourless grains, sub rounded in shape, contains some grains of glauconite and granules of feldspars; 20% silt, a fine greyish silt mixed with some clayey material very fine grain quartz chips containing also some flakes of mica
225.6	228.6	SAND/SILT	As for 219.5m with only a trace of glauconite and about 30% of clayey silt
228.6	231.7	SAND/CLAY	50% SAND, the sand is as at 222.5m with only a slight trace of glauconite and less of feldspar, 50% silty clay, an equal amount of greyish silt and clay forming the matrix of the sand grains and very slightly micaceous and contains some coal dust giving a blackish colour to the silt
231.7	234.7	SAND/SILT	80% SAND, light grey sand with quartz particles of various colours from brownish to colourless grain size from fine to coarse grained but fairly well sorted, out, sub rounded in shape containing a little of coal chips and a few grains of decomposed looking glauconitic, a few chips of feldspar and pyrite, 20% silt, the silt is grey in colour and containing a minor amount of greenish grey clay with some black coal dust, very minor amounts of micaceous flakes
234.7	237.7	SAND/SILT/CLAY	As above, but a slight increase in the clayey-shaley content to about 30%
237.7	240.8	SILT/SAND	65% SILT, a grey silty clayey silt forming the matrix of the quartz grains in the sand, some blackish coal dust present in the silt, 35% sand, the sand has a greyish colour and the quartz grains are from fine to very coarse, poorly sorted, contains a few grains which have a clay material along the cleavage planes, a few chips of coal or lignite looking material
240.8	243.8	SAND/SILT/CLAY	30% SILT, a grey silt with some micaceous flakes; 30% clay, greyish green in colour forming the matrix of the sand grains, 40% sand, a grey very fine to medium sand, not well sorted and sub angular, some glauconite, feldspar and chips of coal, very few grains of pyrite
243.8	246.9	SILTY CLAY/ SAND	60% SILTY CLAY, a grey silty clay forming a matrix for the sand grains, minor amounts of micaceous flakes, present, 40% sand, a greyish sand where the grains are from fine to coarse and very coarse, not well sorted out. The grains are sub angular to angular, small amounts of clayey feldspars of granular size in the sand
246.9	249.9	SAND/CLAYEY SILT	80% SAND, greyish sand with various coloured grains of quartz, in size varies from fine to very coarse but fairly well sorted, rounded to sub rounded grains, some feldspars and coal chips, trace of glauconite; 20% silt grey clayey silt with micaceous flakes and some coal dust in it
249.9	253.0	SAND/CLAYEY SILT	As above, with poorer sorting, and minor amounts of glauconitic grains
253.0	256.0	SAND/CLAYEY SILT	As for 249.9m but no trace of glauconite, instead some pyrite grains

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256.0	259.1	SAND/SILT	80% SAND, a greyish sand looking black in places because about 50% of sand is made up of coal chips, quartz grains of various colours, fine to very coarse, not well sorted, rounded to sub rounded; 20% silt, the silt is grey in colour with minor amounts of brown-grey clayey matter with it, some flakes of mica in the silt and contamination of coal dust which gives a blackish colour to the silt
259.1	262.1	SAND/SILT	80% SAND, a grey coloured sand with grains of quartz of various colours from grey to colourless, grain size from fine to very coarse but minor amounts of fine and medium sorting is fair, sub angular to sub rounded, a fair amount of feldspar, minor amounts of coal and pyrite, 20% silt, a light grey silty clay forming the matrix of the sand, clay slightly brownish, minor amounts of mica flakes in the silt, some black coal dust also present in the silty clay
262.1	265.2	SAND/CLAY/SILT	30% CLAY, a greyish brown clay containing some mica flakes in it and very slightly shaley; 20% silt, a grey coloured silt mixed with the clay and forming a matrix for the sand, contains some very sand and black coal dust; 50% sand, grey in colour, slightly brownish due to coloured quartz, fine to very coarse, poorly sorted, sub angular in shape, contaminated with some coal chips and minor amounts of pyrite
265.2	268.2	SILT/CLAY/SAND	50% SILT, as at 265.18m with some brown-yellow material; 30% clay as at 265.18m; 20% sand, grey medium to coarse grain with some ferruginous contamination, some minor amounts of feldspar, sorting fair, grains sub angular
268.2	271.3	SILT/CLAY/SAND	As above, with slight increase in the clay to about 40% and drop in silt
271.3	274.3	CLAY/SILT/SAND	40% CLAY, a light grey to dark grey clay at places slightly shaley and fairly brittle; 40% silt, the silt is light to darkish grey in colour with small amounts of mica flakes and very fine quartz, some drillers mud in it. 20% SAND, has a greyish colour, sometimes brownish because of the brownish quartz, grain is from medium to coarse with minor amounts of fine grain quartz, some sorting is fair and grains are sub angular, minor amounts of feldspar, some glauconitic grains and pyrite chips
274.3	277.4	CLAY/SILT/SAND	As above with slight increase in clay and decrease in sand to about 10 per cent
277.4	280.4	CLAY/SILT/SAND	As above, clay, silt and sand, but no glauconitic grains in the sand
280.4	283.5	SAND/CLAYEY SILT	85% SAND, greyish coloured sand, some brownish and bluish grains of sand, grain size from medium to coarse, sorting fair, sub rounded grains, some quartz grains coated with blackish brown material, minor amount of feldspar grains, 15% clayey silt, a light grey to darkish grey clayey silt with some very fine quartz grains and a little bit of mica flakes
283.5	286.5	SAND/CLAYEY SILT	As for 280.4m with grain size becoming from coarse to very coarse
286.5	289.6	CLAY/SAND	80% CLAY, dark grey clay, slightly silty, about 10 to 15% silty, clay is thick and possibly shaley; 20% sand, darkish grey sand with fine to medium grained quartz grains, sub angular in shape, fairly well sorted and contains some micaceous flakes with feldspar grains
289.6	295.7	SILTY CLAY/SAND	As above with a slight increase in the silt content of the clay, and some granular grain sized quartz
295.7	301.8	CLAY/SAND	70% CLAY, as for 289.6m, 30% sand, dark grey sand with dark coloured quartz grains in it; grain size from medium to very coarse, not too well sorted; grains are sub-angular in shape, some feldspar and coal chips with the sand grains
301.8	307.9	SILTY CLAY/SAND	80% SILTY CLAY, a dark grey clay which has about 25% of it as silt, contains some mica flakes and some minor amounts of very fine sand; 20% sand, grey, coarse to very coarse and granular sand, sorting is not too good, the quartz grains are sub-angular to angular, some quantities of fine grain, green coloured sand in the clay possibly pulverised glauconite, very slightly feldspathic
307.9	310.9	CLAY/SAND	80% CLAY, a dark grey clay and slightly brownish mixed with a small amount of silty, matter and very fine sand, some micaceous flakes, the silty material is of a light grey colour, 20% sand, a grey coloured sand slightly brownish because of some yellow-brown quartz grains, grain size from fine to very coarse and even granular, not well sorted and sub angular to angular in shape, a few chips of coal
310.9	313.9	CLAY/SILT	60% CLAY. Dark greyish clay at places of light grey shades containing some kaolinite looking material; 20% silt, light grey silt with some cream-grey very fine grains, some micaceous flakes; 20% sand, as for 310.9m
313.9	317.0	SAND/SILT	80% SAND, a grey sand slightly brownish because of yellow-brown quartz grains, quartz is from coarse to very coarse with some granules, some minor quantities of fine quartz, but sorting is fairly good and the grains are sub angular to sub rounded in shape, some quartz is slightly ferruginous, some agate looking fine grains and some ferruginous matter; 20% silt, a grey clayey silt, at places a little lighter in colour, some very fine quartz grains with the silt and slightly micaceous
317.0	323.1	SAND/CLAYEY SILT	As for 317.0m but slight increase in the clayey silt content to about 25%
323.1	326.1	SAND/CLAY/SILT	40% SAND, grey sand with some brown coloured quartz, fine to very coarse grained, not well sorted, sub angular to angular in shape; 30% clay, light to dark coloured clay; 30% silt, grey silt with some very fine sand grains and slightly micaceous
326.1	329.2	SAND/SILT/CLAY	Similar to 326.1m but an increase in the sand to about 50% decrease in silty clay
329.2	332.2	SAND/SILT	60% SAND, the sand is similar to 326.1m fine to very coarse and granular, not well sorted, angular to sub angular, various colours quartz; 40% silt, a lightish grey silt with a little of clay and slightly micaceous, small amount of very fine grain sand with the silt and some very small black lustrous heavies
332.2	335.3	CLAY/SAND	70% CLAY; a dark grey clay at places a lighter shade and looking slightly shaley, small amount of silty matter within the clay; 30% sand, the sand is similar to the sand grains at 332.2m
335.3	338.3	SAND/SILT/CLAY	60% SAND, light grey sand with a few brownish coloured quartz grains, in size from fine to very coarse, not well sorted, the grains are angular to sub angular, a little lighter in colour, some very fine quartz grains with the silt and slightly micaceous

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			greyish silt of fine , minute grains of sand, slightly micaceous; 10% clay, a dark grey clay in the silt and sand
338.3	341.4	SAND/SILT/CLAY	Similar to sample 338.3m but with less of silt and more sand, about 70% sand
341.4	347.5	CLAY/SAND/SILT	70% CLAY, a dark grey clay but lighter at places, 10% silt, the silt is lighter grey in colour and has some micaceous flakes and black very fine grains in it; 20% sand, light grey sand, coarse to very coarse grain quartz, sorting is fair, the grains are rounded and slightly feldspathic
347.5	350.5	CLAY/SAND	As for 341.4m but more clayey and less sand, clay about 80%, the sand is medium to coarse grained
350.5	353.6	CLAY/SAND/SILT	As for 341.4m
353.6	359.7	CLAY/SILT/SAND	70% CLAY, a darkish grey firm clay; 20% silt, greyish black silt mixed with clay and contains some coal dust some very fine sand grains, 10% sand, grey sand generally coarse to very coarse grains, some medium to fine, very fine mixed with the silt, not too well sorted, sub rounded in shape, some pyrite granules in the sand
359.7	368.8	CLAY/SILT	70% CLAY, a dark grey clay slight shaley looking; 25% silt, the silt is as at 356.6m; 5% sand, medium to coarse grained sand with quartz sub rounded in shape, some very fine grain quartz with the silt, sorting not too good, some coal chips and slightly micaceous
368.8	371.9	SILT/CLAY/SAND	40% SILT, a light grey silt with some very fine quartz grains in it, slightly micaceous and some coal dust; 30% clay, a dark grey clay looking slightly shaley; 30% sand, greyish quartz grains with some brown grains generally fine grain to medium grained, fairly well sorted, sub rounded in shape, traces of mica flakes and some black carbonaceous matter
371.9	374.9	SILT/CLAY/SAND	As above, with a few black heavy lustrous grains
374.9	378.0	SILT/CLAY/SAND	As for 371.9m with an increase in sand and decrease in clay by about 10%
378.0	381.0	CLAY/SILT/SAND	70% CLAY, as for 371.86m with light grey patches; 20% silt, as for 371.86m with light grey patches, 20% silt, as for 371.86m but no coal dust; 10% sand, light grey brown, sand, quartz colourless to yellow brown colour, mostly coarse and very coarse grains; some fine grains; sub angular, sorting is fair
381.0	384.1	CLAY/SILT	80% CLAY, a dark grey clay with a few medium fine flakes of mica suspended in it; 20% silt, a light grey coloured silt mixed with the clay; some very fine quartz grains mixed in the silt
384.1	387.1	SILT/CLAY	40% SILT, the silt a light to dark grey containing some powdery grains of quartz and mica flakes; 40% clay, as for the sample at 384.05m; 0.5m sand, medium to fine grained sand, light grey coloured with some brown and yellow brown grains, some bluish, sorting is not too bad, the gains are sub angular to sub rounded, some flakes of mica
387.1	390.1	SILT/CLAY	As about with an increase in the silt and decrease in the clay by about 10%
390.1	393.2	SILT/SAND/CLAY	As for 387.1m with silt increasing to about 50% and sand 30% and to clay 20% the sand has some feldspathic grains besides pyrite and mica
393.2	396.2	SAND/SILT/CLAY	50% SAND, light grey very fine grain sand, minor amounts of coarse to very coarse grain quartz but fairly well sorted, grains sub rounded in shape, contains some carbonaceous matter with pyrite and some mica flakes; 40% silt, grey in colour with a good amount of mica flakes and some very fine grains; 10% clay, as for the sample at 387.1m
396.2	399.3	SILT/SAND/CLAY	50% SILT, dark grey with some light grey patches and some mica flakes in the silt; 40% sand, medium to very coarse grain, not too well sorted, sub rounded, some decomposed ferruginous feldspar, a few grains of pyrite; 10% clay as for 396.24m
399.3	402.3	SILT/SAND	60% SILT, a greyish brown silt with some medium fine grains of sand, looking at places slightly kaolinitic, fine mica flakes present in the silt; 35% sand, coarse to very coarse grained quartz with minor amounts of medium and fine grain quartz, not too well sorted, sub rounded in shape, a good amount of slightly decomposed feldspar and some ferruginous looking feldspar; 5% clay, a grey green clay forming a cementing matrix for the silt and sand
402.3	408.4	SILT/SAND	As for 402.3m with about 20% sand generally medium to fine grained, fairly good sorting
408.4	411.5	SILT/CLAY/SAND	As above with decrease in the amount of sand to 15% and increase in clay and silt to 15% and 70% respectively
411.5	414.5	SILT/CLAY/SAND	As above, with light grey silty bands
414.5	417.6	SILT/CLAY/SAND	As for 411.5m slightly feldspathic and carbonaceous
417.6	420.6	SILT/SAND/CLAY	70% SILT, a light grey coloured silt with some very fine grains of quartz and slightly micaceous, some brown specks, some fine black heavies; 20% sand, fine to very coarse grained sand, grey colour, poor sorting, sub angular in shape, some pyrite grains present/ 10% clay, light to dark grey clay, slightly shaley
420.6	423.7	SILT/SAND/CLAY	As above with some decomposed feldspar grains
423.7	426.7	SILT/SAND/CLAY	Same as sample 420.6m with slight decrease in silt to 60% and increase in the fine sand grains
426.7	429.8	SAND/SILT/CLAY	40% SAND, fine to very fine light grey sand, some quartz grains are medium to coarse in size, sub rounded grains and fairly well sorted; 40% silt, greyish silt with some chips of siltstone and bearing some mica flakes and dust carbonaceous matter; 20% clay, darker grey than silt with a few patches of light grey forming cementing matrix
429.8	432.8	SILT/SAND/CLAY	As above but an increase in the silt and decrease in the sand by about 15%, more of black carbonaceous matter present
432.8	435.9	SILT/SAND/CLAY	As above but clay shows slight shaley characteristics
435.9	442.0	SILT/SAND/CLAY	70% SILT, as for 429.8m, 20% sand, fine grain greyish sand, with a few coarse grains but well sorted, contains some very fine black heavy minerals, 10% clay as above but slightly darker grey in colour

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442.0	445.0	SILT/SAND/CLAY	60% SILT, light to dark grey silt with some very fine grains of quartz and flakes of mica and some carbonaceous black dust and heavies; 30% sand, fine to medium grained light grey sand with some bluish and brownish coarse grain sand, some pyrite and some black heavies, slightly micaceous; 10% clay as for 442.0m
445.0	451.1	SILT/SAND/CLAY	As above with increase in the clay and less silt; silty 50%, sand 30%, clay 20%
451.1	454.2	SILT/SAND/CLAY	As above with some patches of greenish brown siltstone
454.2	457.2	SILT/SAND/CLAY	Similar to 445.0m but slightly more micaceous
457.2	460.3	SAND/SILT/CLAY	45% SAND, light grey, quartz grains generally very fine to medium and some minor quantities of coarse and very coarse grains, fairly well sorted grains sub angular, a fair amount of black heavies; 45% silt, dark grey silt with patchy bands of light grey silt, a moderate amount of very fine mica flakes; 10% clay, a dark grey clay as above 457.2m
460.3	463.3	SAND/SILT/CLAY	50% SAND, a creamish grey sand with fine to medium grain quartz, fairly well sorted, sub angular shape, strongly calcareous cement, some brown coated grains of quartz; 35% silt, a light grey silt as above; 15% clay, the clay is dark grey looking shaley
463.3	466.3	SAND/SILT/CLAY	As above with less of calcareous cement and some very coarse grained quartz
466.3	469.4	SAND/SILT/CLAY	As for 463.3m with only traces of calcareous cementing matter
469.4	475.5	SAND/SILT/CLAY	40% SAND, a light grey sand from fine to very coarse grain quartz with some brownish and bluish very coarse grained quartz, not too well sorted, grains sub angular; 30% silt, as above at 463.3m; 30% clay, as above at 463.3m
475.5	478.5	SAND/SILT/CLAY	As above for 475.5m with less of clay, about 15% and increase in the silt, slightly micaceous
478.5	484.6	SILT/SAND/CLAY	5% CLAY, grey clay, with chips of shale; 50% silt, light to dark grey silt, some siltstone present, very fine black heavies associated with the silt, slightly calcareous, 45% sand, light greyish sand, medium to very coarse grain, not too well sorted, some brownish quartz grains, traces of mica flakes and feldspar grains
484.6	493.8	SILT/SAND/CLAY	50% SILT, dark grey silt with some very fine quartz grains and small flakes of mica, some black carbonaceous dust 20% clay, a grey clay at places patches of dark grey forms matrix for sand grains; 30% sand, fine to very coarse even granular grains of quartz; from colourless to light brown, sub angular in shape, not well sorted, some chips of pyrite
493.8	496.8	SAND/SILT/CLAY	40% SILT, light grey silt with minor amount of darker grey silty patches; 15% clay, as for 487.7m, 45% sand, a brown grey sand, fine to very coarse in size, poorly sorted, sub angular to angular in shape, moderate amount of feldspar grains and some brown ferruginous grains, minor amount of black carbonaceous matter and a fairly high percentage of calcareous cement, also slightly micaceous and a moderate amount of black heavies
496.8	499.9	SAND/SILT/CLAY	Same as above, with less of clay and feldspar and a fairly well sorted coarse grain sand
499.9	502.9	SAND/SILT/CLAY	Same as for 496.8m but a slight decrease in calcareous matter
502.9	506.0	SAND/SILT/CLAY	As for 496.8m with only minor amounts of calcareous cement
506.0	509.0	SAND/SILT/CLAY	Again as for 496.8m with decrease in amount of sand and increase in the amount of clay by about 15%
509.0	515.1	CLAY/SILT/SAND	40% CLAY, a light grey clay with small patches of darker clay, firm and slightly shaley; 40% silt, as above slightly micaceous; 20% sand, fine to medium grain light grey sand with few very coarse and coarse grains of quartz, some brownish and bluish grains of quartz, sand is fairly well sorted, the grains are sub rounded in shape minor amounts of black carbonaceous chips, slightly micaceous and some black heavies
515.1	518.2	CLAY/SILT/SAND	As above with minor amounts of calcareous cement
518.2	521.2	SILT/SAND/CLAY	45% SILT; dark grey silt with a few small lighter grey patches, some very fine quartz grains, slightly micaceous 45% sand, fine to very fine grains grey coloured sand with a few coarse and very coarse grains of quartz, fairly well sorted, sub angular, black heavies present and some black carbonaceous matter, traces of pyrite and mica flakes; 10% clay, grey clay forming matrix of silt and sand
521.2	524.3	SILT/SAND/CLAY	As above with traces of calcareous cementing matter
524.3	527.3	SILT/SAND/CLAY	The same as for 521.2m slightly more coarse grained quartz and calcareous
527.3	530.4	SILT/SAND/CLAY	As for 521.2m with a slight decrease in the silt and sand and increase in the clay to about 20%, minor amount of calcareous cement
530.4	533.4	SILT/SAND/CLAY	55% SILT, as for above at 521.2m but no traces of mica present; 35% sand, coarse to very coarse quartz grains, some medium to fine grain, sorting is fairly good, grains sub rounded in shape, some granules of pyrite, 10% clay, the clay is as above and slightly shaley looking in places
533.4	539.5	SILT/CLAY/SAND	60% SILT, as above, a little lighter in colour; 30% clay contains some creamish white patches of calcareous matter shaley; 10% sand, grey fine grained sand, quartz very fine to medium in size, fairly well sorted sub angular in shape, just traces of black heavies
539.5	542.5	SILT/CLAY/SAND	As for 533.4m but a few grains of feldspar present and some light green silty matter
542.5	545.6	SILT/CLAY/SAND	As for 533.4m but no traces of calcareous matter
545.6	548.6	SILT/CLAY/SAND	Same as for 533.4m, silt 60%, clay 30% clay and fine grains sand 10%
548.6	551.7	SILT/CLAY/SAND	50% SILT, dark grey silt with some black powdery material very slightly micaceous; 30% clay, dark grey clay with a minor amount of calcareous matter forming the cementing matrix for the sand and silt, 20% sand, greyish very coarse grained sand, quartz generally very coarse, but some medium and coarse grain, well sorted, in shape sub rounded, no mica or feldspars or pyrites, traces of black heavies
551.7	554.7	SILT/CLAY/SAND	As above but the clay has distinct shaley characteristics and the silt is slightly micaceous
554.7	557.8	SAND/SILT/CLAY	40% SILT, as for 554.74m; 10% clay as above, 50% sand very fine to fine grained sandstone, grey in colour with some coarse and very coarse grains of quartz but fairly

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			well sorted, sub angular to sub rounded in shape, a moderate amount of mica flakes and some yellow brown chips fairly soft
557.8	560.8	SILT/CLAY/SAND	Same as for sample at 554.7m but no yellow brown chips
560.8	563.9	SILT/CLAY/SAND	Similar to above, but with increase in the amount of clay and decrease in the sand y about 10 to 15 percent and only very slight traces of mica flakes
563.9	566.9	SILT/SAND/CLAY	50% SILT: a very dark grey siltstone, with some very fine black particles, not black heavies, the chips of siltstone are brittle and the silty particles appear to have been arranged along planes, slightly micaceous; 20% clay, dark grey clay at places having a lighter shade, minor amount of shaley chips; 30% sand, poorly sorted grey sand with quartz grains from very fine to very coarse, fine to medium grains are generally sub angular white medium to very coarse are generally rounded to sub rounded some brown ferruginous chips
566.9	570.0	SILT/SAND/CLAY	As above but with a moderate amount of calcareous cement
570.0	582.2	CLAY/SILT/SAND	45% clay, as for above; 35% silt, as for above at 569.98m, 20% sand, fine to medium grain grey sand with quartz fairly well sorted, sub angular, no ferruginous matter or feldspar but only traces of mica, no evidence of calcareous cement
582.2	585.2	SILT/SAND/CLAY	55% SILT, dark grey with a little of siltstone chip; 35% sand, a medium to very coarse grained sand with quartz fairly well sorted, sub rounded, in shape, some frosted grains of quartz, some grains coated with yellow brown material; 10% clay, as above
585.2	588.3	SILT/SAND/CLAY	As above with a slight increase in silt and decrease in sand by 5 to 10%
588.3	594.4	SILT/SAND/CLAY	As above, silt 60%, sand 30%, clay 10%
594.4	597.4	SILT/SAND/CLAY	As for sample at 588.3m slightly more clayey, silt 50%, clay 20%, sand 30%
597.4	603.5	SILT/SAND/CLAY	As for sample at 588.3m with minor amounts of calcareous cement around some of the quartz grains, and not well sorted
603.5	606.6	SILT/SAND/CLAY	Similar to above sample at 588.3m but less sandy and more silt, with the sand generally from fine to medium grained and fairly well sorted and no traces of yellow brown coating material
606.6	634.0	SILT/SAND/CLAY	60% SILT, a dark grey silt with small patches of a lighter grey shade, some very fine quartz chips associated with the silt, very slightly micaceous; 15% clay, lighter than the silt grey clay forming a matrix for the silt and sand particles; 25% sand, the sand is made up generally of very fine to fine sub rounded grains of quartz with a small quartzite of medium to coarse grained grains, fairly well sorted, some black carbonaceous chips present
634.0	637.0	SILT/CLAY/SAND	Similar to 606.6m but a slight increase in the clay content to about 25% and decrease in silt and sand
637.0	643.1	SILT/CLAY	50% SILT, dark grey silt fairly loose but a few chips of siltstone which exhibit some directional texture, slightly micaceous; 45% clay, light grey to dark grey clay generally dark grey in colour, slightly shaley; 5% sand, fine to medium grained sand, generally colourless to white and frosted quartz, sorting is quite well, the grains are sub angular to sub rounded in shape, very minor amount of black carbonaceous material
643.1	664.5	SILT/CLAY	Similar to 637.0m but at 658.4m and 661.4m the quartz grains are fine to coarse grained and not well sorted, and at 664.5m a few patches of light grey silt
664.5	667.5	SILT/CLAY/SAND	60% SILT, as for description at 637-643.1m, 25% clay, dark grey clay as for 637-643.1m; 15% sand, poorly sorted greyish coloured sand with quartz grains ranging from fine to very coarse, generally sub-rounded in shape, a few flakes of mica, some chips of black carbonaceous matter and some decaying vegetation
667.5	670.6	SILT/SAND/CLAY	20% clay, a dark grey clay mixed with the silt and some calcareous cement; 40% silt, a grey silt with chips of siltstone, some flakes of mica (biotite possibly); 40% sand, poorly sorted sand, quartz grains from fine to very coarse, some grains of ferruginous quartz, a fairly high percentage of calcareous cement, slightly micaceous
670.6	673.6	SILT/CLAY/SAND	As above with less sand, about 25% and more of silt and clay about 50% and 25% respectively
673.6	676.7	SILT/CLAY/SAND	60% SILT, as for sample 670.6m; 30% clay as for sample at 670.6m; 10% sand, coarse to very coarse grey quartz, angular to sub angular, moderately well sorted, trace of feldspar, minor amounts of mica flakes and some patches of calcareous cement
676.7	679.7	SILT/CLAY/SAND	Similar to sample above, but more silt 70% and less clay 20%, and only traces of calcareous cement
679.7	691.9	SILT/CLAY/SAND	80% SILT, dark grey silt containing minor amounts of fine flakes of mica and some very fine grains of quartz; 10% clay, lighter grey clay with traces of calcareous matter; 10% sand, coarse to very coarse sand quartz, traces of feldspar and mica flakes, sorting moderately angular grains, traces of black heavies
691.9	694.9	SILT/CLAY/SAND	As for above at 679.7-691.9m but with more clay about 25% and less silt 65%, no trace of calcareous cement
694.9	698.0	SILT/CLAY/SAND	As for 679.7-691.9m sample with no trace of calcareous cement
698.0	701.0	SILT/CLAY/SAND	As above with patches of light grey silt
701.0	707.1	SILT/CLAY/SAND	As above with a moderate amount of calcareous cement and traces of black carbonaceous matter
707.1	708.7		No sample

DRILL CORE DESCRIPTIONS

The cores are described by units from top to bottom.

<i>Core 1. (91.4 to 94.5 m), Recovery 1.02 m</i>	
0 – 0.15 m	Claystone; pale creamy brown v. well sorted and uniform in colour. Slightly silty and containing v. minor fine-grained, sub-angular quartz and v. minor fine-grained black carbonaceous material. Possibly kaolinitic.
0.15 – 0.25 m	Claystone; as above but containing patches of sandstone – fine to v. coarse grained, sub-rounded quartz, micaceous, minor weathered white feldspar, minor carbonaceous plant material.
0.25 – 0.51 m	Claystone; as the above 0 – 0.15 m section, but becoming more silty towards the 0.25 m level. Contains more black carbonaceous material (possibly lignite). V. weakly fissile due to the carbonaceous material
0.51 – 0.58 m	60% Siltstone; pale creamy brown, sandy and clayey.
0.58 – 0.64 m	25% Sand; v. fine-grained to v. coarse-grained quartz and minor feldspar, poorly sorted, sub-angular to sub-rounded. Minor fine-grained black heavy minerals, minor fine-grained pyrite. Micaceous. Minor lignite material. Ferruginised quartz grains quite common.
0.64 – 1.02 m	15% Clay; creamish-white, possibly kaolinitic.
<i>Core 2. (115.8 to 118.9 m), Recovery 0.86 m</i>	
0 – 0.86 m	Siltstone; grey, sandy and clayey, fairly well sorted, sub-angular to sub-rounded quartz. Abundant mica and minor fine-grained black heavy minerals. V. abundant brownish-black carbonaceous plant remains. Between the 0.30 m – 0.51 m section the plant material has been preserved as large flakes up to 5cm in length which causes the siltstone to fracture readily
<i>Core 3. (182.9 to 185.9 m), Recovery 1.68 m</i>	
0 – 0.76 m	Siltstone; whitish grey, sandy, clayey, compact
0.76 – 1.07 m	80% Silt
1.07 – 1.68 m	10% Sand; fine to v. coarse-grained quartz and minor partially weathered feldspars. Frosted, sub-rounded to sub-angular, poorly sorted. Minor ferruginised quartz grains. Minor black carbonaceous plant material; in patches more abundant. Minor fine grained blackish-green glauconite.
<i>Core 4. (243.8 to 246.9 m), Recovery 0.25 m</i>	
0 – 0.05 m	Sandstone; V. silty and slightly clayey. Grey v. poorly sorted fine to v. coarse grained quartz and feldspar, sub-angular to angular and frosted. Minor black carbonaceous plant remains, minor fine-grained pyrite and black heavy minerals.
0.05 – 0.25 m	Siltstone; Sandy and clayey. Sand as above but finer grained and containing more carbonaceous plant remains giving poorly bedded structure.
<i>Core 5. (269.7 to 270.7 m), Recovery 0.58 m</i>	
0 – 0.58 m	Siltstone; light grey, clayey, micaceous with small amount of fine carbonaceous material, few coarse quartz and feldspar grains, subangular. Poorly fissile.
<i>Core 6. (306.3 to 306.9 m), Recovery 0.15 m</i>	
0 – 0.15 m	Shale; light grey, silty, micaceous, with minor fine carbonaceous material, some coarse quartz and feldspar grains, subangular to subrounded. Moderately fissile.
<i>Core 7. (336.8 to 339.9 m), Recovery 0.20 m</i>	
0 – 0.13 m	Sandstone; quartz, grey, silty and clayey, very fine grained with a few coarse grains. Very micaceous, fine carbonaceous material, some very fine black heavy mineral.
0.13 – 0.14 m	Sandstone; quartz, grey-brown, with clayey matrix, coarse grained, poorly sorted. Grains angular to subangular. Black heavy mineral, mica.
0.14 – 0.20 m	Siltstone; grey, micaceous, slightly sandy, containing dark grey clayey bands. Fine carbonaceous material, minor v. fine black heavy mineral.
<i>Core 8. (373.4 to 376.4 m), Recovery 1.67 m</i>	
0 – 0.71 m	Sandstone; greenish brown, silty and slightly clayey. Fine-grained, sub-angular, fairly well sorted quartz some of which has been stained green and some ferruginised. V. abundant mica – greenish-black, fine grained, possibly biotite. Minor feldspar, minor black carbonaceous material, minor black carbonaceous material, minor pyrite and minor black fine grained heavy minerals. The presence of mica produces poorly formed micro-banding

0.71 – 1.47 m	Sandstone; Pale green, v. silty and slightly clayey with nodules of white kaolinitic clay still preserved. As for the 0 – 0.71 m section but more silty, more black heavies, less micaceous and paler in colour.
1.47 – 1.60 m	Siltstone; greenish-grey, clayey and slightly sandy. Micaceous and becoming coarser-grained towards the 1.60 m level
1.60 – 1.67 m	Sandstone; as for the 0 - 0.71 m section but more silty and showing better defined micro banding due to orientation of the mica flakes.
<i>Core 9. (428.2 to 429.5 m), Recovery 1.22 m</i>	
0 – 1.22 m	Sandstone; pale greenish-grey. V. silty and slightly clayey. V. fine to medium-grained sub-rounded quartz, moderately sorted, frosted. V. minor feldspar, abundant mica, random patches of brownish-black carbonaceous plant material. Fair amount of fine-grained black heavy minerals. The core is v. compact and v. uniform. V. minor fine-grained pyrite. Cementing material is calcareous.
<i>Core 10. (487.7 to 490.7 m), Recovery 2.59 m</i>	
0 – 2.59 m	Sandstone; grey green, silty and slightly clayey. V. fine to fine-grained quartz, well sorted, sub-rounded and slightly frosted. V. minor feldspar, and ferruginised quartz grains. Abundant mica (biotite). Fair amount of fine-grained black heavy minerals. Minor pyrite but in places nodules up to 12.5 mm in diameter are present as concretions.
<i>Core 11. (592.8 to 594.4 m), Recovery 1.30 m</i>	
0 – 0.05 m	Shale; Grey, slightly greenish. Minor amount of quartz. Fine to medium size. Moderately sorted. Some ferruginous coated quartz grains. Sub-rounded quartz grains. Mica flakes (possibly biotite). Clay shows directional property. Fracture uneven but generally parallel to directional plane.
0.05 – 0.10 m	Shale; Grey with faint greenish colour. Well compacted, weakly fissile. V. slightly silty. Quartz grains embedded in the shale. Medium to v. coarse & even granular quartz grains. Sub-rounded when medium in size but sub-angular to angular in coarse to granular grained quartz. The sand grains poorly sorted. Micaceous.
0.10 – 0.20 m	Shale; the shale is as above but with less sand (quartz) grains. The grains are generally medium to v. coarse, poorly sorted. Angular to sub-angular. Some dark coloured quartz. Micaceous. At 0.20 m a fern fossil preserved along the plane of fracture
0.20 – 0.51 m	Shale; Grey with v. faint traces of green-brown clay. Well compacted. Moderately fissile breaking along somewhat parallel planes. The planes making a v. small angle with the axis of the core. Minor amount of silty material, slightly clayey at 0.25 m. Moderate amount of mica flakes (possibly biotite) throughout. Sand grains, quartz embedded in the shale throughout. Generally coarse to granular in size. Grains are angular to sub-angular in shape. Sorting is poor. At 0.48 m a bed of sandstone about 6 mm thick and showing to have a bedding plane making an angle of about 75° with the axis of the core or about 10° with the fracture plane of the shale. The sandstone is made up of quartz with a few grains of feldspar. Coarse to v. coarse grain in size, subrounded in shape and moderately well sorted. Dip of sandstone bed will therefore be about 15° to 20°.
0.51 – 1.30 m	Shale; Light grey with traces of greenish colour shale. Well compacted and moderately fissile. The fracture planes dips about 5°. V. minor amount of silt. Light grey clay to be found at approx. 0.53 m, 0.69 m and 0.79 m. Shale and clay is micaceous (possibly biotite). Sand grains found embedded throughout the length of the core. At places slight concentration of the quartz grains at 0.53-0.58 m and 0.65–0.66 m, 0.79 m, 0.86-0.89 m. At 0.79 m a thin bed of sandstone about 2.5 mm in thickness having approx. same dip as shale. Medium to coarse grained sub-angular, slightly micaceous.
<i>Core 12. (641.6 to 642.8 m), Recovery 1.22 m</i>	
0 – 0.61 m	Siltstone; Light grey siltstone, thinly banded with darker grey siltstone. The bedding of the siltstone has an approximate dip of about 30°. The core breaks up along this plane. Loosely parted or compacted. Siltstone composed of v. fine grains of quartz and some ferruginous quartz. Flakes of mica (both biotite and muscovite looking) and a fairly moderate amount of black heavies. Minor amount of grey-grey clay and at places bands or also patches of clay and shale c.f. 0.20 m, 0.51 m, 0.61 m.
0.61 – 1.22 m	Siltstone; Light grey siltstone with thin bands of darker grey siltstone. The contact planes or bedding planes of the siltstone dip by about 30°. Not that

	well compacted and easily breaks along the bedding planes. As above the siltstone is made up of some v. fine grains of quartz, angular to sub-angular in shape and well sorted. Moderate amounts of mica flakes (both muscovite and biotite) and black heavies. Bands and patches of clay occur at 0.66 m, 0.71 m, 0.76 m, 0.84 m, 0.94 m, 1.09 m.
<i>Core 13. (702.6 to 703.2 m), Recovery 0.61 m</i>	
0 – 0.53 m	Siltstone; Light grey siltstone slightly buff coloured. V. loosely compacted. Not bedded generally but from 0.48 m – 0.53 m faint evidence of horizontal bedding exists. The siltstone is generally made up of v. fine grained quartz chips angular in shape and well sorted. Minor amounts of black v. small carbonaceous matter and some brown ferruginous matter. A fairly moderate amount of mica flakes (both biotite and muscovite). Black heavies are present but in very minor amounts.
0.53 – 0.61 m	Shale; grey shale beds interbedded with thin beds of light grey siltstone. The shale has horizontal to a very small angle of dip about 5° maximum. The shale and siltstone beds are slightly micaceous and contain minor amounts of black heavies and some carbonaceous matter.

PALYNOLOGY

Palynology from Agaton 12

Top Depth ft	Top Depth m	Sample type	Playnology Zone	Suggested Formation	Local unit	Comments
380	115.8	CC	<i>B. limbata?</i>	Warnbro Gp	A	Moderate assemblage lacking diagnostic species
600	182.9	CC	<i>B. limbata?</i>	Warnbro Gp	A	Assemblage dominated by <i>Cyathidites</i> - <i>Dictyophyllites</i> with few other spores. Possible back swamp facies
885	269.7	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	Indet.	Common <i>P. ingramii</i> . Typical <i>Parmelia</i> Assemblage.
1105	336.8	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E?	Some Permian & Triassic reworking
1225	373.4	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E?	Low yield
1405	429.5	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Low yield
1600	487.7	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Nearly barren
1945	592.8	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Low yield
2105	641.6	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Low yield
2300	701	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm or Otorowiri Fm)	E	High diversity assemblage with common Permian and Triassic reworking and some Jurassic.

The 115.8 m sample contains a diverse spore-pollen assemblage that lacks index species. There is no strong evidence for either the *B. limbata* or *B. enaeabbaensis* zones. The absence of any of the diagnostic *B. enaeabbaensis* Zone species and the sandy nature of the lithology suggests this sample is from the Warnbro Group, but on the available data it is not possible to determine a stratigraphic position in this unit.

The 182.9 m sample contains a rich assemblage that is almost monospecific, i.e. *Cyathidites* type pollen that are all obviously from the same plant source comprise about 98% of the assemblage. The only other spores present are a few *Contignisporites cooksoniae*, *Ischyosporites crateris* and possible specimens of *Concavissimisporites* and *P. horridus*, which may be reworked. Similar assemblages have been seen before in the Leederville Fm near Perth and are thought to represent back swamp facies in a fluvial sequence (see Backhouse, 1988). However, diagnostic *B. limbata* Zone species are not present, which is typical of this type of assemblage. Therefore although the samples from 115.8 m and 182.9 m are considered to be from the Warnbro Gp this can not be demonstrated unequivocally.

Samples from 269.7 m to 701 m are all placed in the *B. enaeabbaensis* Spore-pollen zone. The 269.7 m sample contains relatively common *Pilosporites ingramii*, and some *Nevesisporites harleyii*, *N. undatus*, *Januasporites multispinus* and *Matonisporites agatonensis*, and is certainly from this zone. From 336.5 m to 641.6 m the spore-pollen assemblages are not as rich and tend to be less diverse, but are still consistent with the *B. enaeabbaensis* Zone.

The 701 m sample is highly diverse with many of the index species found in the 269.7 m sample, with the addition of *Biretisporites enaeabbaensis*. It also contains quite common reworked material of Permian, Triassic, Late Jurassic and Early Jurassic age. This abundance of reworking is seen elsewhere in parts of the Carnac Fm and also sometimes in the Otorowiri Fm. The Otorowiri Fm is essentially defined by its distinctive gamma log signature, which can not be seen on the available electric log.

PALAEONTOLOGY REPORT NO. 24/1968 DATE: 21st May, 1968

PALYNOLOGY OF AGATON 12 BOREHOLE

MATERIAL AND LOCALITY: Eleven cores were supplied from the rotary borehole Agaton 12, situated about 1½ miles west of Watheroo townsite (4 miles north of Agaton 7).

SAMPLE NOS. AND LITHOLOGIES OF THE CORES:

300' - 310' (F7818): pale brown mudstone
 380' - 390' (F7819): light grey micaceous siltstone
 600' - 610' (F7820): light grey mudstone
 885' - 888' (F7821): light grey siltstone
 1105' - 1115' (F7822): light grey siltstone
 1225' - 1235' (F7823): light grey clayey siltstone
 1405' - 1409' (F7824): light grey siltstone
 1600' - 1610' (F7825): light grey siltstone
 1945' - 1950' (F7826): light grey sandy mudstone
 2105' - 2109' (F7827): light grey shaly siltstone
 2300' - 2307' (F7828): light grey hard silty shale

SUBMITTED BY: Mr. J. R. Passmore and Mr. T. T. Bestow,
 Hydrology Division, on Requisition Nos. 2906, 2910 and 2917
 during a period from the 25th March to 3rd May, 1968.

REPORT: Preliminary results of palynological study of the first seven cores, have been given in Palaeontological Notes of 28th March and 10th April (on file 154/1968).

Of the 11 samples prepared only that from the first core (300' - 310') is barren of palynomorphs. All others contain assemblages indicating a Lower Cretaceous (Neocomian-Aptian) age.

Cicatricosisporites australiensis, the species being used as the index fossil for Zone C₂ of the South Perth Formation, is present in most samples between 380' and 1225'.

This interval is hence considered to represent Zone C₂.

One sample from this interval which does not contain C. australiensis is that from the 600' to 610' core. This contained a most unusual assemblage; very clean and with many specimens but limited in species. About 98 per cent of the assemblage consists of simple, laevigate trilete spores representing no more than two species. The remainder were nearly all, other trilete species. This may indicate that the sample treated included mainly one ^{fern} ~~fern~~ sporangium or alternatively the sediment was deposited in an environment in which only ferns were present.

The five bottom cores (1405' to 2300') do not contain C. australiensis although some assemblages contain many species (the 2300' to 2307' core is particularly rich). This suggests the strata from 1405' to 2300' comes from Zone C₁ of the South Perth Formation.

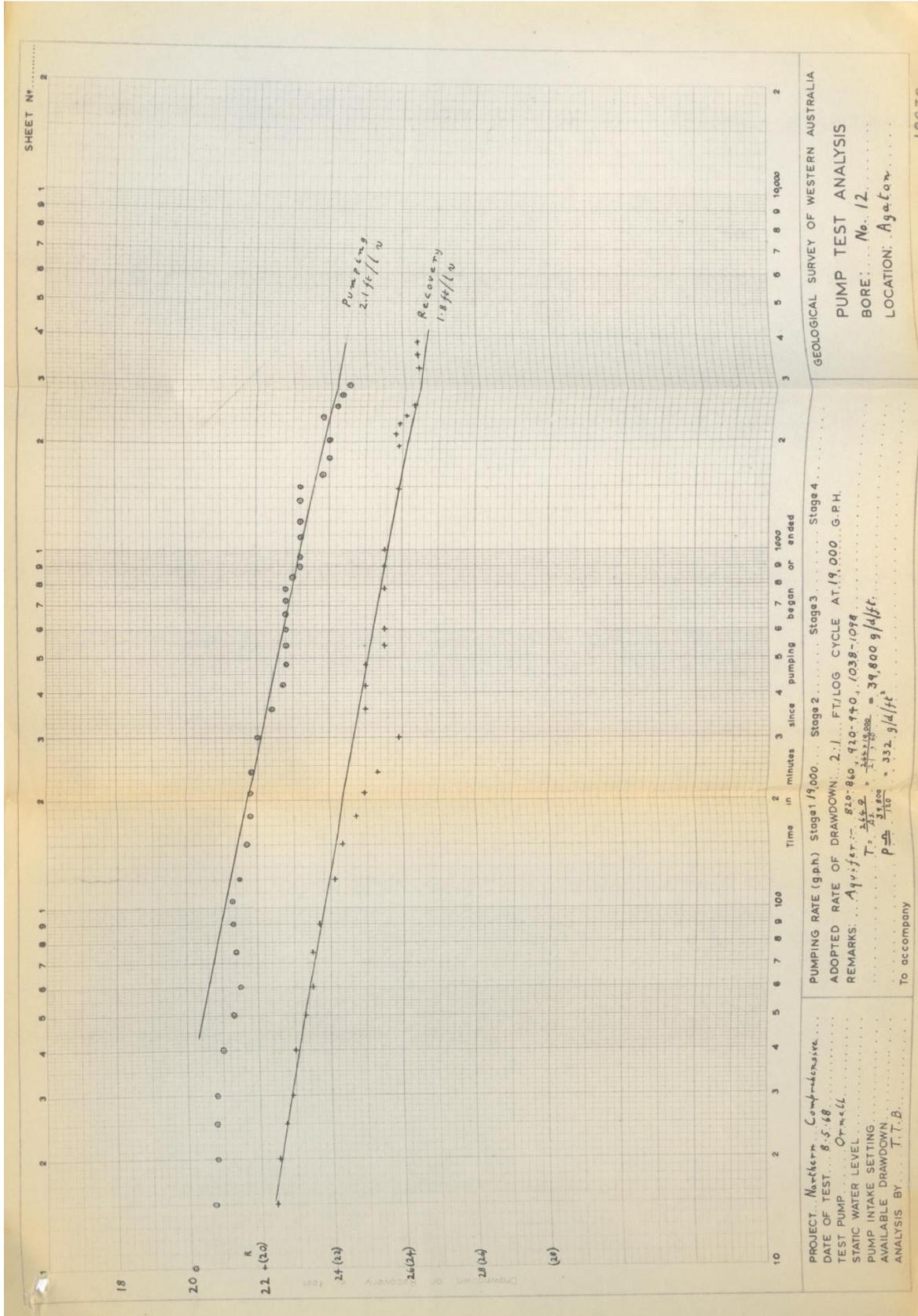
It is interesting that almost all cores below 1105' contain Permian contaminants. Also the 1225' to 1235', 1405' to 1409' and 2300' to 2307' cores contain the acritarch Veryhachium which in this formation often indicates Lower Triassic contamination rather than possible marine conditions of deposition. However it is only in the 2300' to 2307' core that a few spores of Triassic age can be recognized. This bottom core therefore contains many of the ingredients of the Otorowiri Siltstone assemblages, but to use this as a direct correlation with the Arrowsmith River area would be most unwise at this stage.

CONCLUSIONS: All assemblages obtained from the core samples supplied are Neocomian-Aptian in age and come from the South Perth Formation. It is suggested they can be separated palynologically into: Zone C₂: 380' to 1225'; Zone C₁: 1405' to 2300'

DISTRIBUTION:

Mr. Passmore
154/1968
Palaeo. Rept. & Lab. Files
Ingram.

(B. S. Ingram)
Palynologist



GOVERNMENT CHEMICAL LABORATORIES

13th May, 1968

Material: One water sample marked as below

Lab. No.: 7158/68

From whom received and date: Geological Survey of W. A.
on 19th April, 1968Marks:

"Sample No. 22157

Description sample locality: Agaton No. 12 Bore about
16½ miles due west of Watheroo

Analysis required: standard

Bore identity: A12

Depth of bore: 1124'

Depth of sample: 825' - 1104'

Appearance: cloudy grey

Collected by: J. Martins

Date water sampled: 9.4.68"

Result of examination:

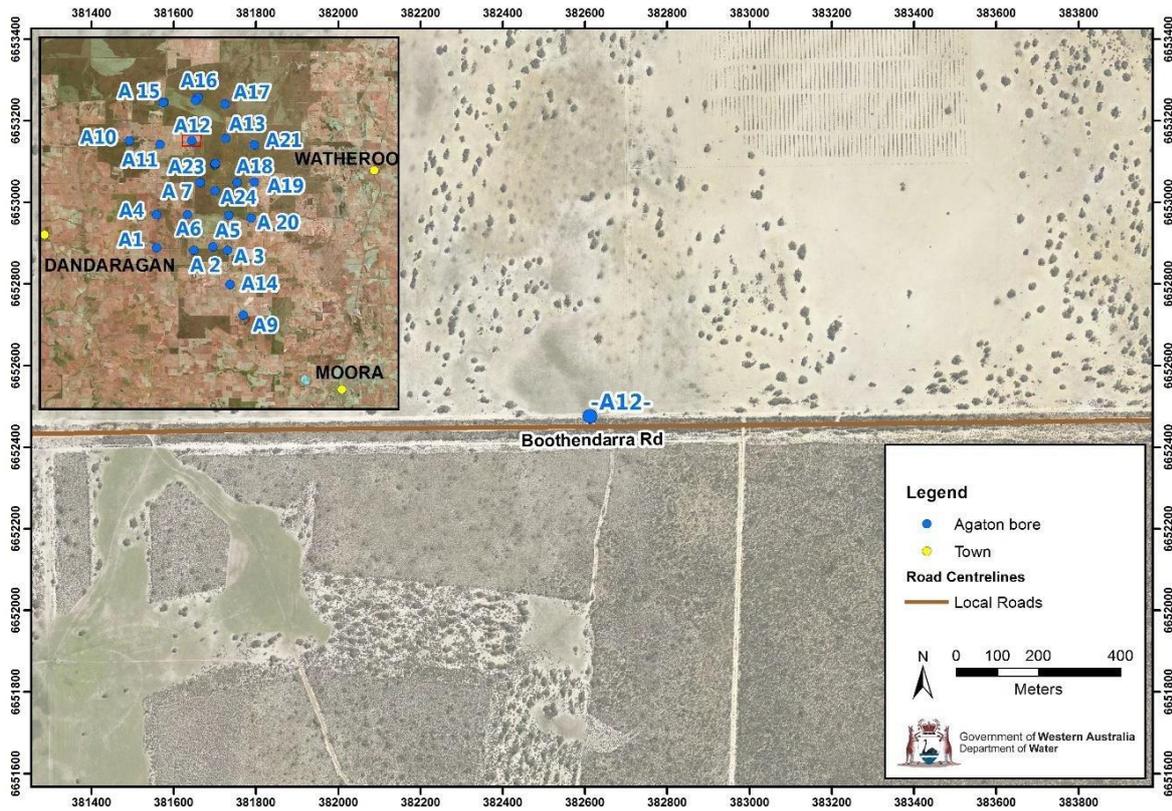
Specific conductivity (micromhos 20 ^o C)	800
pH	7.9
Appearance	Very slightly cloudy with brown deposit
Colour	Colourless
Odour	Nil
<u>Mineral matter</u>	<u>Parts per million</u>
Total dissolved solids (by evaporation)	510
(by conductivity)	560
Sodium chloride, NaCl (calc. from chloride)	305
Total hardness (calc. as CaCO ₃)	75
Total alkalinity (calc. as CaCO ₃)	95
Calcium, Ca	20
Magnesium, Mg	6
Sodium, Na	148
Potassium, K	10
Iron, Fe (in solution)	less than 0.1
Bicarbonate, HCO ₃	116
Carbonate, CO ₃	Nil
Sulphate, SO ₄	49
Chloride, Cl	185
Nitrate, NO ₃	2
Silica, SiO ₂	22

The iron figure reported is in solution and does not include the brown deposit referred to above which may or may not be partly due to the post precipitation of iron.

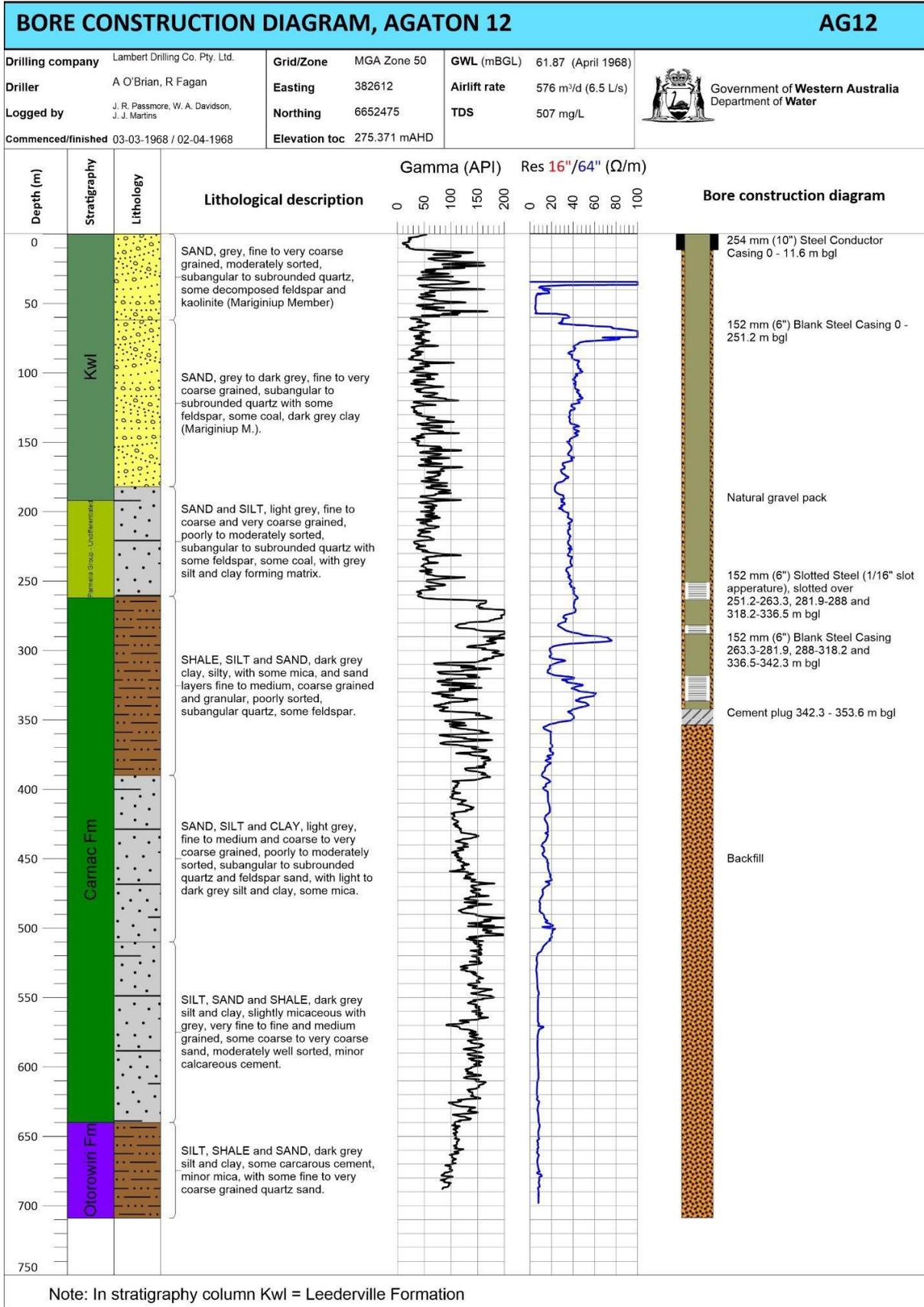
H. C. HUGHES
DIVISIONAL CHIEF
AGRICULTURE & WATER SUPPLY

CHEMICAL ANALYSES, BY GOVERNMENT CHEMICAL LABORATORIES, OF WATER
FROM AGATON NO. 12 BORE

Sample No.	10555	10568	10567
Date sampled	22/3/68	8/5/68	10/5/68
Depth (feet)	915-930	823-1104	823-1104
Sampling method	Formation Test	Pump test (start)	Pump test (48 hours)
pH	7.2	7.4	7.6
<u>MINERAL MATTER</u>	<u>Parts</u>	<u>per</u>	<u>million</u>
Calcium, Ca	21	9	8
Magnesium, Mg	4	18	13
Sodium, Na	107	147	136
Potassium, K	9	17	14
Iron, Fe			3
Bicarbonate, HCO ₃	134	55	55
Carbonate, CO ₃	nil	nil	nil
Sulphate, SO ₄	36	30	33
Chloride, Cl	118	257	218
Nitrate, NO ₃	less than 1	less than 1	less than 1
Silica, SiO ₂	12	20	27
<u>Total</u> (sum)	441	553	507
<u>Total</u> (conductivity)	400	550	530
<u>Total</u> (evaporation)	360	530	480
Total hardness (as CaCO ₃)	69	97	74
Total alkalinity (as CaCO ₃)	110	45	45



Aerial photograph of AG12 situated on the south side of Boothendarra Road, 4.6 km east of Coalara Road.



8.7 Appendix 7: Soils investigation

SOILS INVESTIGATION

Sendem Downs Proposed Cattle Feedlot Site

An investigation was undertaken by Graham Barrow B.E (Agr) on 21 August 2019.

Six soil pits had been dug on the site on 19 August 2019 at sites representative of the pens and wastewater storage areas. Soil Description Sheets for the six sites are attached. Photos of each site are attached.

The area is gently undulating, with generally poor coverage of annual pastures (drought affected). Groundwater was not encountered at any site. Topsoil of approximately 20cm depth consists of Sand with fine fragments that are insufficient to allow the formation of a consistent bolus when wet.

The B horizon also consists of Sand, with very limited root development. Readily Available Water Holding capacity (RAW) is very low due to the sandy nature of the soil and restricted root depth.

The C horizon consists variously of either Sand, Loamy Sand or Clay Sand, with varying degrees of coarse fragments.

At all sites, with the exception of Site 3, there was insufficient material for the construction of a clay lining, to an adequate hydraulic conductivity for the protection of groundwater under a wastewater storage dam. Sites 1 and 2 were comprised of Sand to a depth of greater than 120cm. Sites 4 and 5 had Clayey Sand at depth, however this layer contained significant percentages of coarse fragments. Site 6 had Loamy Sand at depth.

Site 3 had a broad layer of Clayey Sand from 115 to 180cm and probably deeper. The soil showed signs of sodicity, with mottling, indicating that when compacted, the layer would be suitable for the construction of a wastewater storage dam, or the lining under a feedlot pen. The lining would need protection from the effects of direct rainfall impact. The cost of removing the overburden may be prohibitive in comparison to the purchase cost of a synthetic liner.

Sites 4 and 5 are deemed the most suitable for siting of the feedlot pens. The combination of sloping sites, leading to run-off, higher waterholding capacity (greater storage from each rainfall event) and the increased percentage of clay at depth lead to limited leakage of nutrient rich waste leaching to the watertable.

From an agronomic perspective, the soils would benefit greatly from the application of feedlot waste. Currently, rainfall events that exceed the RAW lead to leaching of water and soluble fertilisers to groundwater. Replacement of fertilisers by manures will likely increase the RAW and reduce the leaching of nutrients.



Figure 26: Test Pit 5 with clayey gravel sub-grade base



Figure 27: Test Pit 3 clayey sand sub-grade material assessed as suitable for sealing ponds

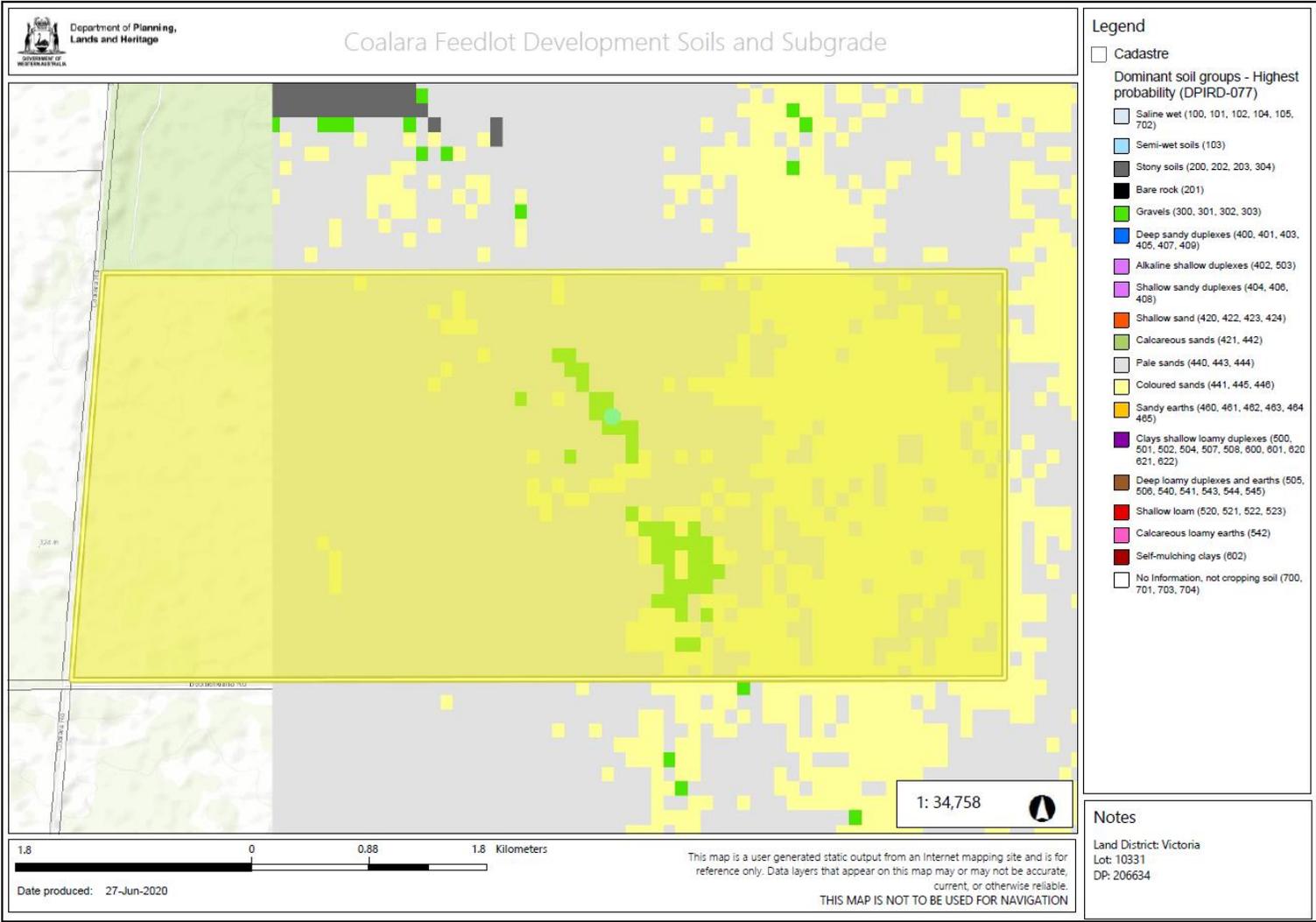


Figure 28: Coalara Feedlot Premises soils and sub-grade



Figure 29: Soil survey test pit locations

8.8 Appendix 8: Clay material infiltration test laboratory data

Perth
Unit 3, 34 Sphinx Way
Bibra Lake,
WA 6163
Ph: (08) 9418 8742
Mob: 0422 814 231
E-mail: Phillip.li@eprecisionlab.com



E-PRECISION LABORATORY

FALLING HEAD PERMEABILITY TEST REPORT				
Test Method: AS1289 6.7.2				
Client:	Local Geotechnics		Date Tested:	24/04/2020
Project:	CSC Permeability Test April 2020		Date Reported:	28/04/2020
Lab:	EPLAB		EP Lab Job Number:	LOCAL
Tested by:	Phil			
Checked by:	Phil			
Lab ID:	CLAY_PIT1_FH	CLAY_PIT2_FH		
Client ID:	Clay Pit 1	Clay Pit 2		
Sample Type:	-	-		
Sample Conditions:	Remolded 98% MMDD	Remolded 98% MMDD		
Surcharge Pressure (kPa):	12.5	12.5		
Initial Bulk Density (t/m ³):	2.24	2.21		
Initial Moisture Content (%):	9.77	11.19		
Dry Density (t/m ³):	2.04	1.99		
Saturation (Skempton's B):	0.98	1.00		
K₂₀ (m/s):	7.941 E⁻⁹	6.485 E⁻⁹		
Notes:				
Stored and Tested the Sample as received				
Samples supplied by the Client				
Authorised Signatory (Geotechnical Engineer):				

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

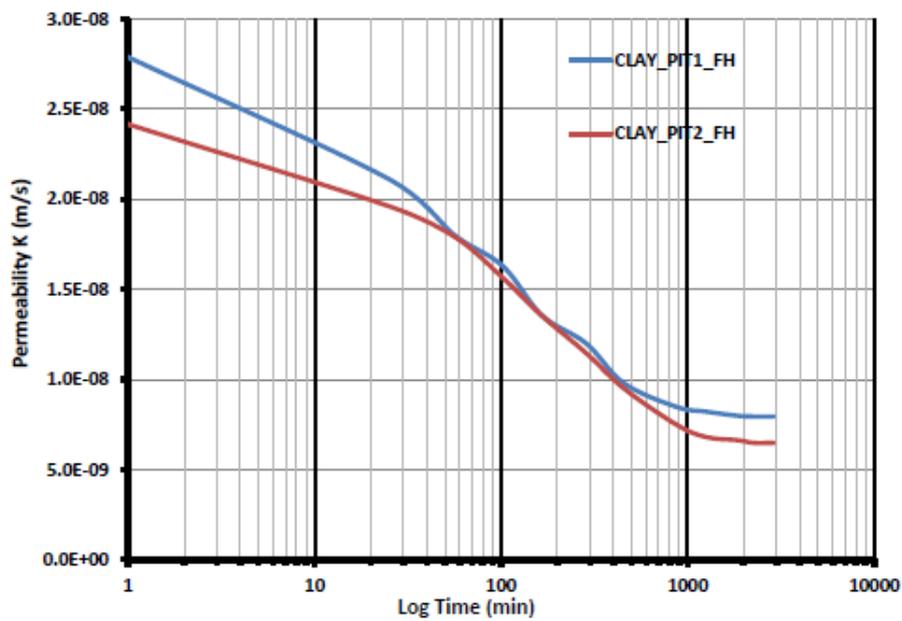
Perth
 Unit 3, 34 Sphinx Way
 Bibra Lake,
 WA 6163
 Ph: (08) 9418 8742
 Mob: 0422 814 231
 E-mail: Phillip.li@eprecisionlab.com



FALLING HEAD PERMEABILITY TEST REPORT

Test Method: AS1289 6.7.2

Client: Local Geotechnics	Date Tested: 24/04/2020	
Project: CSC Permeability Test April 2020	Date Reported: 28/04/2020	
Lab: EPLAB	EP Lab Job Number: LOCAL	



Notes:

Stored and Tested the Sample as received
 Samples supplied by the Client

Authorised Signatory (Geotechnical Engineer)

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

Sample site GPS location: Zone 50 J - Easting 381498.80m E - Northing 6652459.32m S

8.9 Appendix 9: Coalara Feedlot “Animal Care Statement”

BEEF CATTLE FEEDLOTS – ANIMAL CARE STATEMENT – (CSIRO Format)

1. FEEDLOT DETAILS

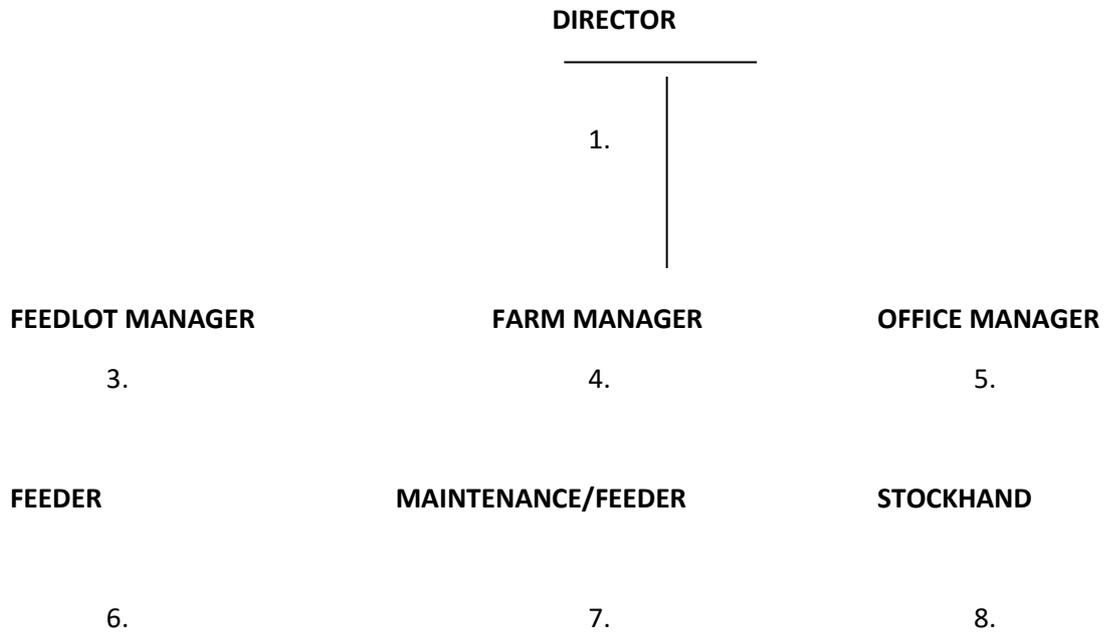
Name of Feedlot	Coalara
Contact Person/Position	Feedlot Manager
Site Address	"Sendem Downs"
	2530 Coalara Road
	Badgingarra, WA
Postal Address	
(if different to above)	
Telephone:	08 9571 2946
Facsimile:	

2 MANAGEMENT

- 8000 hd SCU Feedlot
- 70 day domestic market
- 100 day grainfed market
- Stocking density varies between 9 to 25 mtrs per square hd
- 6-13 full & part time staff
- Staff training all feedlot operations are conducted as required and documented

2.2 Management Structure

Management Structure



3 RESPONSIBILITIES AND PROCEDURES

3.1 Facilities

3.1.1 Yards

Maintenance - Position	7. & Contractors
Cleaning - Position	7.
Frequency Details	Daily

3.1.2 Water Troughs

Maintenance - Position	4,7
Cleaning - Position	7
Frequency Details	Cleaned weekly or more frequently if required (all troughs checked for flow daily)

3.1.3 Feed Bunks

Maintenance - Position	3,6,7,
Cleaning - Position	3,4,5,6,7,8
Frequency Details	Daily

3.1.4 Shelter Provisions

Is shelter provided?

Yes No

If yes, advise details (natural, artificial, type, e.g. windbreak, shade etc and area involved). If no, why do you consider it is not required?

Feedlot is located in the Darling Downs high country considered to be a temperate climate. In 20 years of operation shelter has not been required.

1. Cattle released during extreme temperature conditions.
2. Water storage within close proximity of feedlot would also be utilised if needed.

In extreme weather conditions contingency plan would come in to effect. Refer to QA manual.

3.1.5 Roads/Lanes

Maintenance - Position **4,7**

3.1.6 Do the facilities adequately cover animal welfare considerations?

YES
If no, advise details

3.2 Livestock Management

3.2.1 Health Program

Position **3,8**

(i) Receival/Induction

Outline the various movements from receival through induction, into the yard, e.g. 'identify, weigh, preventative health maintenance program, draft into feedyards'.

Procedures

Upon receival cattle are placed in receival on palatable hay for 1 to 2 days then drafted, cattle that meet health & weight specifications are inducted.

Induction Clostridial Vax, Resp Vax, worm & lice control, possible HGP, as required

Cattle are scanned & individually identified with eartags.

(ii) Records kept (of health treatment)?

YES

If “yes” give details, if “no” what alternative procedures?

All treated are individually tagged with treatment & date on tag, cattle are also NLIS scanned with treatment & withholding information recorded on feedlot records system

(iii) Are sick pens available to segregate sick cattle

YES

If “yes” give details, if not available what alternative procedure is used?

Two sick pens are available cattle are treated & placed into observation pen, within the next 24 hours they are either placed in home pen or retreated and this is recorded.

(iv) What is procedure for identification and/or segregation of cattle that have been treated with any substance that has a withholding period?

All treated cattle are tagged individually with treatment and date entered into feedlot log and written on tag. Sick cattle go through the 2 pens and may go home on day of treatment or held longer depending on treatment requirement and condition.

(v) Veterinary: Service available, on site

Yes No

If no, what is alternative procedure (i.e., contract, on-call, or other)? If 'other', give details.

– Wheatbelt Vet Services are on call 24-7 for all veterinary services. 08 96711108

3.2.2 Stock Supervision

Position 3,8

Frequency Details Pen stock checked daily, more if needed.

3.2.3 Nutrition & Food Safety

Position 3

Do you have a nutritionist?

Yes

No

If no, how is formulation derived?

3.2.4 Transport

(i) Position responsible for inspection of stock on arrival, for detection of any sign of injury or disease?

3

(ii) Position responsible for fitness at load-out for health and loading density?

3

3.3 Livestock Management

3.3.1 Disease Outbreak

Position 3

Details of contingency plans:

Sick cattle are isolated, Veterinarian contacted immediately. Incident reporting requirements are implemented and animal treatment administered as required.

Refer to QA Manual Appendix 1

3.3.2 Emergency Slaughter and Carcass Disposal

Position 3,7,8

1. Details of contingency plans: Destruction of cattle to be conducted in an efficient and humane manner, utilising the temporal or frontal methods.
-

Refer to QA Manual

3.3.3 Water/Feed Failures

Position 3,4,6,7

1. **Water supply interruption** - although water for the feedlot is generally pumped from a single bore, the bore is operated in conjunction with another irrigation bore. Water is pumped to a 300,000 L storage tank which gravity feeds to all troughs. By keeping the tank full, several days storage are always available.

Shortage of feed supply, mill fire or poor quality feed

1. In the event that the feed supplier was unable to deliver supplied ration due to a mechanical breakdown, cattle would be fed silage and hay for period until ration supply arrived.
2. In the event of major commodity shortage, cattle would be let out of feedlot onto 1500 ha of country which completely surrounds feedlot.
3. In case of mill fire milled grain delivery from nearby feedlots would be arranged until normal milling was restored.

3.3.4 Extreme Weather - Heat

Position 3,4,6,7

1.Refer QA manual Appendices: Mitigations include:

- Heat rations;
- Deployment of extra water troughs;
- Minimisation of stock movement and activity; and
- Wet manure removal.

- **3.3.5 Extreme Weather - Flood**

- The site is on undulating country and the feedyard is higher than any floodwaters.

The formed surface generates raised areas in all pens thereby protecting from local st

- The feedlot has a 3000 metre all weather road to the Coalara Rd with connections to east and west.

- **3.3.6 Earthquake**
- The region has no history of significant earthquakes. Planning for earthquakes at this site is not an effective use of time.

8.10 Appendix 10: Heat risk assessment

6/21/2020

Risk Assessment Program (RAP) – Cattle Heat Load Toolbox

RAP Version 2.1 | 21st June 2020

The risk assessment program or RAP is a tool to help feedlot operators assess their potential risk of a heat event at their site based on historical climatic conditions, cattle characteristics and feedlot management practices.

Results

Results calculated on 2020-06-21 01:31:20 PM

HLI threshold: 91

AHLU Risk Level: 91

Years analysed: 22

Event duration	Frequency of High	Frequency of Extreme
2 days	Less than 1 event in 22 years	Less than 1 event in 22 years
3 days	Less than 1 event in 22 years	Less than 1 event in 22 years
4 days	Less than 1 event in 22 years	Less than 1 event in 22 years
5 days	Less than 1 event in 22 years	Less than 1 event in 22 years
6 days	Less than 1 event in 22 years	Less than 1 event in 22 years
7 or more days	Less than 1 event in 22 years	Less than 1 event in 22 years

Over a 10 year period, this site would be expected to experience:

At least 1 days of high or greater risk that includes 0 days of extreme risk

Over a 10 year period, this site would be expected to experience:

At least 1 days of high or greater risk that includes 0 days of extreme risk

Parameters

Parameter	Value
Site	Morawa
Period analysed	Long Term
Cattle type	Bos taurus
Coat colour	Black
Health status	Healthy
Number of days on feed	80 - 130
Amount of shade	No shade
Trough water temperature	20 - 30 degrees
Pen class	Class 1
Extra water troughs installed	Yes
Heat load ration fed	Yes

<https://chit.com.au/toolbox/rap-calculator?offset=600&qldsiteid=0&nswsiteid=0&sasiteid=0&wasiteid=94417&vicsiteid=0&tassiteid=0&statsinterval=Long+Term&breeds=Bos+taurus&colour=Black&h...> 1/2

6/21/2020

Risk Assessment Program (RAP) – Cattle Heat Load Toolbox

Wet manure removal	Yes
User Notes	

8.11 Appendix 11: Coalara Feedlot Odour Management

8.11.1 Management Strategies for Odour and Air Quality

The 2015 MLA Guidebook – “Beef Cattle Feedlots: Waste Management and Utilisation” offers useful instruction on odour management. Content from this guidebook informs the following section.

There is generally some flexibility in the timing of potential odorous activities in the feedlot. CSCF management will use the basic understanding of atmospheric conditions that can disperse odours in planning pen cleaning, manure processing, composting and spreading operations.

Atmospheric conditions and their effects on odour dispersal are:

- Unstable atmosphere – typically the atmosphere is unstable on a warm sunny day when hot eddies of air rise from the land surface and cause significant mixing of the atmosphere. Odours are rapidly dispersed and carried upwards, quickly reducing odour intensity away from the feedlot. Because these conditions promote rapid dispersion, they will be targeted for carrying out most odour-generating activities.
- Stable atmosphere – occurs on cold, still clear nights when the air at the land surface stays cool and remains trapped below an inversion layer. Little atmospheric mixing occurs below this layer and there is little dispersal of odours. Odours remain at relatively high intensity at some distance from the feedlot. These conditions are unsuitable for undertaking activities that will generate significant odour and odorous activity will be avoided in these conditions.
- Neutral atmosphere – occurs on heavy overcast days and odour dispersion is only moderate. Composted manure utilisation will occur only when the prevailing weather conditions are unlikely to result in odour and dust nuisance for nearby residents. Management will consider the wind direction and strength, the time of day and the atmospheric stability. The plan showing the location of all neighbours within approximately 5 kilometres and the site weather station will help to show which neighbours are at risk of odour nuisance from composted manure utilisation on particular fields. Management will develop an annual utilisation plan that takes into account seasonal wind directions, rainfall patterns and crops grown. Different paddocks will be selected for utilisation at different times of the year depending on the level of odour or dust generation risk and subject to agronomic and seasonal considerations.

To reduce potential odour nuisance to neighbours, compost turning and manure spreading will be done:

- frequently to minimise events with large odour generation
- evenly
- in the morning when the air is warming rather than late in the afternoon
- for solids, as soon as possible mechanically incorporate manure into the soil

On cold, still mornings, air will be trapped below an inversion layer, restricting odour dispersion. The specified pen foundations of imported compacted clay will help to reduce problems of odour or dust. Management will not spread manure if heavy rain is predicted.

Management will communicate with neighbours at the time of planned odorous activities to ensure that important events in neighbour's calendars is not in conflict with the feedlot plan. A register of communications with neighbours will be kept in the FLM diary.

8.11.2 Feedlot Location, Site, Situation and Woodlots

The feedlot property was selected to ensure adequate buffer distance between the feedlot (which is to be located near the centre of the property) and neighbouring potential receptor residences.

Existing tree belts and woodlots create turbulence and filter air and aid in odour dispersion and therefore reduce the likely impact on neighbours.

The proponent/operator understands the importance of the existing tree wooded areas on the property to odour dispersion and will retain and nurture the trees as an important feature of odour management.

8.11.3 Feedyard Pen Surface Integrity Management

Pen cleaners will be trained in pen cleaning and maintenance of surface integrity and every effort will be made by the pen cleaner to maintain and not damage the interface layer between the base of the manure pack and the compacted clay pen floor. Management will inspect and sign off on each pen as cleaning and repair are completed. Records of inspections and consequential notes will be kept in the feedlot manager's diary.

In dry times cattle pens will be regularly cleaned of manure to ensure loose material as a dust emission source is minimised. A "clay mix" pen floor capping is specified for construction of cattle pens which should aid in forming a firm base and mitigate against pulverising to powder.

Low spots and any potholes that develop in the pen surface will be packed and repaired with suitable material at the completion of cleaning each pen prior to restocking. These problems are much less likely to occur because of the water trough design detailed in the next paragraph.

Water trough design includes elevated plug holes connected to underground drainpipe so that overflow and trough flush cleaning water flows through drainage pipes under the feedyard and exits from underground into the sedimentation structure. This design element ensures that no trough water ends up on the surface of the pen to affect pen floor integrity. This is a key design element in aiding lower odour emissions from the feedyard pad.

Prior to the monthly management meeting the feedlot manager will conduct a whole of feedyard pen floor inspection and will report findings to the meeting and develop a plan with staff to address any hazards detected.

8.11.4 Feedyard Pen Cleaning

Cattle pens will be cleaned on a frequency to maintain compliance with a Class 1 feedlot such that the depth on dry manure will not exceed 50mm depth. This strategy will reduce the risk of odour generation as a consequence of excessive manure loads becoming wet for an extended period and, as a consequence, odorous.

Tractor drawn box scrapers and frontend loaders will be the primary equipment used to mound manure and clean pens. A skid-steer with push bar will be used to clean along fence lines and push and pull material into the general yard cleaning zone for pick-up by the larger machines.

Manure loads will be managed to ensure that the solid dry manure pack is never greater than 50mm. On the nominated design criteria stocking density for the feedlot on a continuous stocking regime the pens will be cleaned approximately every 13 weeks. Pens will be cleaned in an autumn campaign to ready the yard for winter and a spring campaign to clean up after winter. Heat hazard manure load will be reduced in another concerted campaign prior to the end of December each year.

Pen cleaning environmental conditions will be assessed daily in line with the guidelines noted in Section 4 above including communications with neighbouring residents and if conditions are not suitable then the activity will be deferred until more suitable conditions develop. In summer months the Katestone heat load model will provide a useful forecasting tool for activity planning.

8.11.5 Effluent Catch Drain Cleaning

The feedpens have a specified constructed fall from bunkline to back drain. The fall is appropriate for feedlots in dry climates, such as the Wheat Belt region of WA. This slope is sufficient to create in-pen runoff to effluent catch drains in a feedlot managed to Class 1 standard but is such that the manure load generally remains in the pen and is not entrained in the pen surface effluent runoff.

In most rainfall events little manure will leave the pen and end up in the drain. However, at times, some manure will exit the pen and reach the drains. The back drains of the feedlot are specified with a constant fall from south to north.

Opens drains will be maintained by grading and solids removal to ensure all feedlot drainage-lines are weed free.

Drain cleaning environmental conditions will be assessed daily in line with the guidelines noted in sections above including communications with neighbouring residents and if climatic conditions are not suitable then the activity will be deferred until better conditions develop.

8.11.6 Sedimentation Structures Operation and Cleaning

Sedimentation detention structures as detailed in the Feedlot EA will be operated to detain feedyard rainfall runoff for a period of no more than 24 hours. This period is too short for the runoff water to experience anaerobic processes and become odorous at the time of decant.

Design of the structures will ensure that all liquid drains from the basis only leaving behind a layer of sediment. Each summer the structures will be assessed for sediment load and once the capacity is reduced by 20% the structures will be isolated, (see design criteria) dried out and cleaned.

Possible impact on receptor residences will be considered in planning the timing of cleaning.

8.11.7 Effluent Evaporation Dams Operation and Cleaning

Effluent terminates in a series of evaporation dams. Water balance detailed in the EA estimates that total design capacity of 46.25 ML is sufficient to evaporate (including effluent use in composting) all feedyard runoff in the 95th percentile wet year. See Section 6.4.4 and Appendix 3.

The drainage system has been designed to ensure that most sediment and Biochemical Oxygen Demand (BOD hereon) potential is retained in the feedyard pens and not entrained in the feedyard effluent. Constructed sedimentation structures are designed to aid solids that are entrained from the pens to settle in the sedimentation structures.

Effluent is therefore expected to contain some Total Dissolved Solids (TDS hereon) from leached nutrient and salts but significantly lower BOD in the terminal dams than other feedlots of equivalent size. Lower BOD in the effluent means lower odour potential.

In the 95th percentile year water balance calculations including use of effluent in composting, indicate that both dams are fully evaporated and empty by the end of summer.

Once holding capacity in either of the terminal dams is reduced by 20% by accumulation of sediment, inflows will be redirected to the other storages and the dams will have solids harvested for spreading on designated manure receival areas.

The feedlot manager will review weather forecasts for the planned activity period and possible impact on receptor residences will be considered in determining the timing of cleaning.

8.11.8 Manure Storage Area Pad Maintenance

The manure storage pad will be constructed of the same material and to the compaction and permeability standard of the feedyard pens. Runoff from the pad will be directed to the effluent settlement and evaporation system.

The pad will be managed to leave a layer of aged manure or compost over the pad. This will aid in reducing erosion. Any low spots or potholes that develop on the manure storage pad will be filled and repaired as soon as they are detected. The pad will be maintained, to remain free draining all the time. The manure storage pad will be inspected by the feedlot manager, monthly, and a report of the inspection will be logged at the monthly management meeting.

8.11.9 Manure Processing and Composting

As described earlier in this document, effluent water will be used in the compost production processes on the feedlot site. Turning of manure in the composting process has the potential to create odour.

Weather forecasts for possible impact on receptor residences will be considered by the Feedlot Manager in planning the timing of composting activity. Region receptor residents within 6 k's will be advised of major manure turning and composting programs prior to commencement. Windrows during initial composting activity will be low profile so that in the event of spontaneous combustion the smouldering manure will be cut out and extinguished as soon as detected.

8.11.10 **Composted Manure Spreading**

Effectively composted manure has an earthy smell that is not classed as unpleasant by most people.

In instances when composted manure solids are spread, possible impact on receptor residences will be considered in planning the timing and location of spreading activity. The spread material will be incorporated into the soil in a timely manner.

Weather forecasts for possible impact on receptor residences will be considered by the Feedlot Manager in planning the timing of spreading activity. Neighbours within 2 kms of spreading on company land will be advised of major spreading campaign programs prior to commencement.

8.11.11 **Manure Shipping Off Site**

Any composted manure shipped off site will be transport in covered loads designed to ensure odours do not exceed acceptable levels.

Neighbours possibly impacted by loading of composted manure for shipment and passing trucks will be advised before the shipping campaign to ensure that the timing of the activity does not impinge on their amenity.

8.11.12 **Deceased Animal Disposal and Composting**

All deceased or euthanized animals will be composted at the manure storage pad in accordance with the 2015 MLA Guidelines for the composting of dead animals. The process includes opening the thoracic cavity and puncturing the rumen.

Dead animals must be delivered to the composting area and covered immediately, or, if a necropsy is conducted, then as soon as the necropsy is finished. Deceased animals found to be uncovered at the pad for more than 18 hours will be designated a notifiable incident under the feedlot QA system and will be dealt with using the Corrective Action Request program.

8.11.13 **Feedlot Roads and Cattle Alleys - Dust**

Feedlot road specifications include compacted stabilised gravel seal thereby significantly reducing the risk of dust in feed alley roads.

Cattle alleys will be regularly cleaned of slope wash manure to ensure loose material as an emission source is minimised. A sandy clay mix capping is specified for construction of cattle alleys which should aid in forming a firm floor and mitigate against pulverising to powder. If the cleaned surface becomes powdery then the use of a water tanker will be used to suppress the alley dust.

8.12 Appendix 12: Effluent drains and sedimentation structures

8.12.1 Pen rows catch drain design

Time of Concentration:

$$t_c = \frac{58 \times L}{A^{0.1} \times S_e^{0.2}}$$

Where:

t_c = time of concentration (min)

L = mainstream length (km)

A = area of catchment (km²)

S_e = equal area slope (m/km)

For one row of pens:

L = 0.56 km

A = 0.036 km²

S_e = 7.5 m/km (assuming a 0.75% drain slope)

t_c = 30.3 minutes

Rainfall intensity of 20year ARI design storm with a 30minute duration at the site is approx. 22.8mm/hr

Calculate drain capacity at the end of **one row of pens**:

$$Q = \frac{C \times I \times A}{360}$$

Where:

Q = peak flow rate (m³/sec)

C = runoff coefficient

I = rainfall intensity of 20year ARI design storm (mm/h)

A = catchment area (ha)

For one row of pens:

C = 0.8

I = 22.8 mm/h

A = 3.6 ha,

Thus, Q = 0.18 m³/sec (15.8ML/day), the peak flow rate at the end of the pen drain. An earthen channel with a 4m bed width, 1V:5H batter flowing 0.1m deep with a 0.75% slope will be sufficient under the National Guidelines. The actual drain, as a minimum for drain line maintenance and management, will be 4m bed, 1:7.5 batters and 0.2m deep.

8.12.2 Northern transfer drain design (prior to detailed survey)

Below are calculations for the drain running the northern end of the feedyard pens to the sedimentation structures.

For site contributing to sedimentation basin from the feed pens and cattle handling yards etc. (only approximate given limited height data):

$$L = 0.9 \text{ km}$$

$$A = 0.22 \text{ km}^2$$

$$S_e = 12 \text{ m/km}$$

$$t_c = 36.95 \text{ minutes}$$

Rainfall intensity of 20 year ARI design storm with a 37 minute duration at the site is approx. 25mm/hr.

Calculate drain capacity leading up to sedimentation basin:

For pens and cattle handling area:

$$C = 0.8$$

$$I = 22.8 \text{ mm/h}$$

$$A = 22 \text{ ha,}$$

Thus, $Q = 1.2222 \text{ m}^3/\text{sec}$ (105.6ML/day). Assuming a concrete drain at 1% slope, a bed width of 2.5m, vertical batters, and a flow depth of approx. 0.3m will satisfy the National Guidelines. Once a detail survey is conducted, then an accurate assessment can be made as to the flow rates and drain sizes required.

8.12.3 Sedimentation structures

The sedimentation system capacity can be calculated using the following formula:

$$V_p = Q_p \times \frac{L}{W} \times \frac{\lambda}{V}$$

Where:

V_p = required sedimentation system volume (m^3)

Q_p = peak flow rate (m^3/sec) for a 20 year ARI design storm

L/W = length to width ratio

λ = a scale factor

v = design flow velocity = 0.005m/s or less

Allowing for the whole site flowing to the sedimentation basin, includes the manure storage and handling area, but not the evaporation ponds, the peak flow rate, $Q_p = 1.7 \text{ m}^3/\text{sec}$ (assuming an area of 30 ha is draining to the sedimentation ponds).

Thus, the required sedimentation system volume = 3060 m^3 . Assume floor dimensions of 100m x 16.7m, 1:3 batters, and 0.8m deep = 1560 m^3 . Thus, a minimum of three ponds of this size will be required as at any time one pond may be closed off for drying out and cleaning.

8.13 Appendix 13: Premises & CSC properties manure utilisation areas



Figure 30: Premises: Manure utilisation area 1 – Total reserve 1285 ha – crop areas 1197 ha

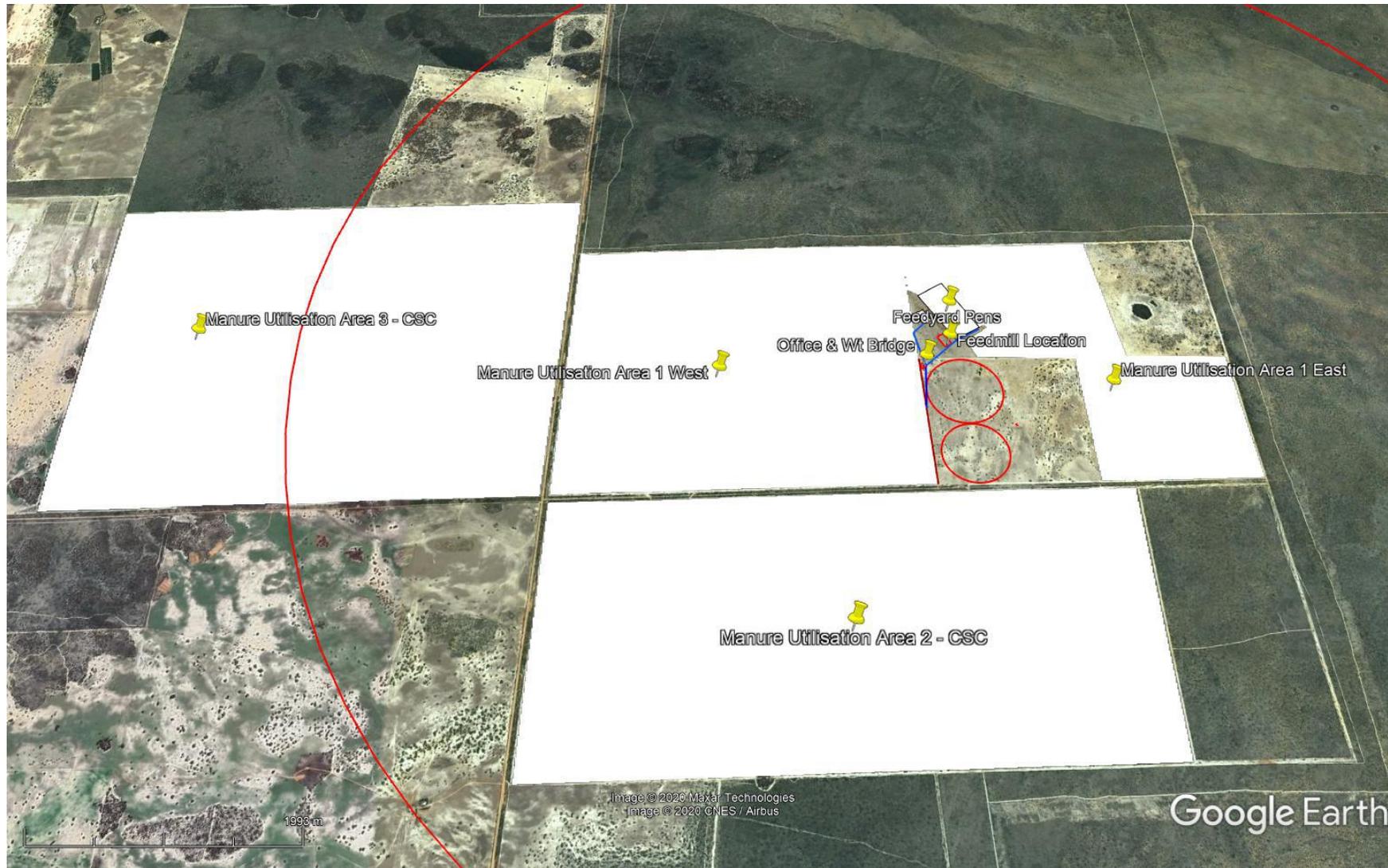


Figure 31: CSC Manure utilisation areas 2 (Sendem Downs) and 3 (Hallswood Park)

8.14 Appendix 14: Feedmill conceptual design (AF Systems 04/08/20)

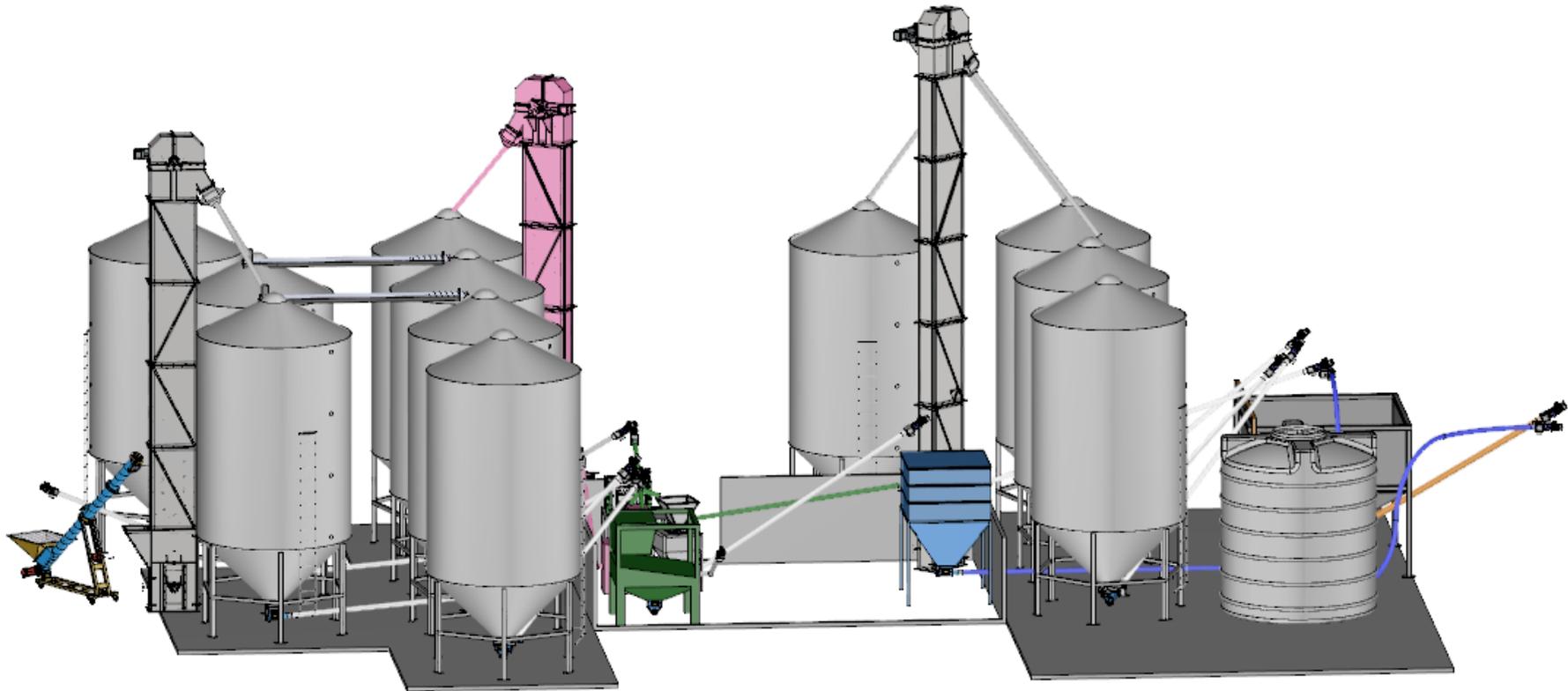


Figure 32: Feedmill conceptual design demonstrating enclosed grain handling system

8.15 Appendix 15: ASIC Certificates of Registration for the Applicant

COPY

Butcher, Paull & Calder Attn: Claire McGregor
GPO Box 51354
Perth WA 6845

Remove this top section if desired before framing



Certificate of Registration of a Company



This is to certify that

CENTRAL STOCKCARE PTY LTD

Australian Company Number 122 321 500

is a registered company under the Corporations Act 2001 and
is taken to be registered in Western Australia.

The company is **limited by shares**.

The company is a **proprietary** company.

The day of commencement of registration is
the twenty-third day of October 2006.

CERTIFICATE

Issued by the
Australian Securities and Investments Commission
on this twenty-fourth day of October, 2006.

Jeffrey Lucy
Chairman

Figure 33: Company Registration for Central Stockcare Pty Ltd

View company details

Page 1 of 2



ASIC
Australian Securities & Investments Commission

Forms Manager
Registered Agents

Company: CENTRAL STOCKCARE PTY LTD ACN 122 321 500

Company details

Date company registered 23-10-2006
 Company next review date 23-10-2007
 Company type Australian Proprietary Company
 Company status Registered
 Home unit company No
 Superannuation trustee company No
 Non profit company No

Registered office

SUITE 11 LEVEL 1 , 295 ROKEBY ROAD , SUBIACO WA 6008

Principal place of business

LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Officeholders

RYAN, DEAN PATRICK

Born 03-08-1973 at CHINCHILLA QLD

LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Office(s) held: Director, appointed 23-10-2006
 Secretary, appointed 23-10-2006

RYAN, KATIE JANE

Born 09-12-1976 at GERALDTON WA

LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Office(s) held: Director, appointed 23-10-2006

Company share structure

Share class	Share description	Number issued	Total amount paid	Total amount unpaid
ORD	ORDINARY SHARES	2	2.00	0.00

Members

RYAN , DEAN PATRICK LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Share class	Total number held	Fully paid	Beneficially held
ORD	1	Yes	Yes

RYAN , KATIE JANE LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Share class	Total number held	Fully paid	Beneficially held

<https://www1.edge.asic.gov.au/cgi-bin/Lodgement/regaportal?update/requestViewCo...> 07/11/2006

Figure 34: Company details for Central Stockcare Pty Ltd



blackwood partners
chartered accountants

DIRECTORS
SCOTT SAWYER
WAYNE SCAINI
BEN THOMPSON

Suite 11
295 Rokeby Road
Subiaco WA 6008

PO Box 885
Subiaco WA 6904

Phone (08) 9382 8155
Fax (08) 9382 8166

9 November 2006

Mr D P & Mrs K J Ryan
Central Stockcare Pty Ltd
Lot 43 Stock Road
Bullsbrook WA 6084

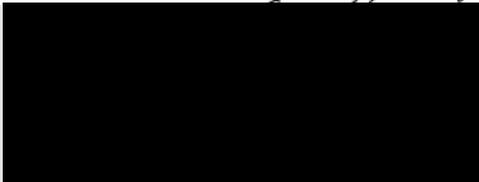
Dear Dean & Kate

**Central Stockcare Pty Ltd t/f The Ryan Family Trust
Notification of your Australian Business Number**

We enclose confirmation from the Australian Taxation Office of the Australian Business Number for The Ryan Family Trust.

The Australian Business Number is 67 548 177 945.

Please ensure this notice is retained with your other permanent records.



S L Sawyer

11 NOV 09 11:06

Blackwood Partners Pty Ltd As Trustees of The Sawyer & Co Unit Trust, The Scaini Family Trust & The Thompson Family Trust. ABN 70 527 193 497

Figure 35: Trustee ABN notification page 1

PO Box 908
Albury NSW 2640



Australian Government
Australian Taxation Office



THE TRUSTEE FOR THE RYAN FAMILY TRUST
C/- BLACKWOOD PARTNERS
PO BOX 885
SUBIACO WA 6904

Date of Issue
07 November 2006

Client Enquiries
Telephone: 13 28 66
Facsimile: 1300 130 911

Dear Sir/Madam

**Notification of your Australian business number
For your information**

Thank you for your recent request to register for an Australian business number (ABN).

I am pleased to advise that you are now registered in the Australian Business Register.

Your Australian business number is **67 548 177 945**.

Your ABN registration is effective as of **23 October 2006**.

We have enclosed a list of details recorded about your business or organisation. Please check that these details are correct.

You are required to notify the Australian Business Registrar of any changes to the information recorded on the register within 28 days of becoming aware of the change. If your details have changed, please phone **13 28 66** between 8.00am and 6.00pm, Monday to Friday.

Please note that some of the information collected will be available to the public on the Australian Business Register at www.abr.business.gov.au. The Registrar may also provide selected information to other government agencies authorised by law to receive it.

Deductible gift recipient, income tax exempt fund and/or tax concession charity

If you have indicated that you require endorsement as a deductible gift recipient, income tax exempt fund and/or tax concession charity, an application will issue shortly.

For more information

The enclosed brochure, *Checklist for people starting a new business*, tells you about a range of helpful products and services for business tax information, including our free online services and how easily you can access them.

If you need any further information, please visit our website at www.ato.gov.au or phone us on **13 28 66** between 8.00am and 6.00pm, Monday to Friday.

Protecting your privacy when you phone us

If you phone us, we need to know we are talking to the correct person before providing information. We will ask you for details only you or your authorised representative would know. It would be helpful if you have your tax file number or Australian business number ready when you phone us.

Your review rights

Your date of registration is a reviewable ABN decision. If you are not happy with this decision, you may request a review of the decision by the Administrative Appeals Tribunal. You would need to request a review within 28 days from the date this notice was issued.

Yours faithfully



Registrar of the Australian Business Register and
Commissioner of Taxation

AML/AVS/SL/AV/REC/01/10/07/02/04/07/04/0

Figure 36: Trustee ABN notification page 2



Australian Government
Australian Taxation Office



Australian Business Register

Australian business number(ABN) : 67 548 177 945

Entity name : THE TRUSTEE FOR THE RYAN FAMILY TRUST

ABN Status : Registered

ABN Registration Date : 23 October 2006

Postal Address : C/- BLACKWOOD PARTNERS
PO BOX 885
SUBIACO WA 6904

Business Address : LOT 43 STOCK ROAD
BULLSBROOK WA 6084

Type of Entity : Trust

Industry Code (ANZSIC) : 33190

Trustee Name : MR DEAN PATRICK RYAN
(See reverse for additional trading names.)

GST Status : Registered

GST Registration Date : 23 October 2006

Please turn over ...

Figure 37: Trustee ABN notification page 3

8.16 Appendix 15: Proof of occupier status

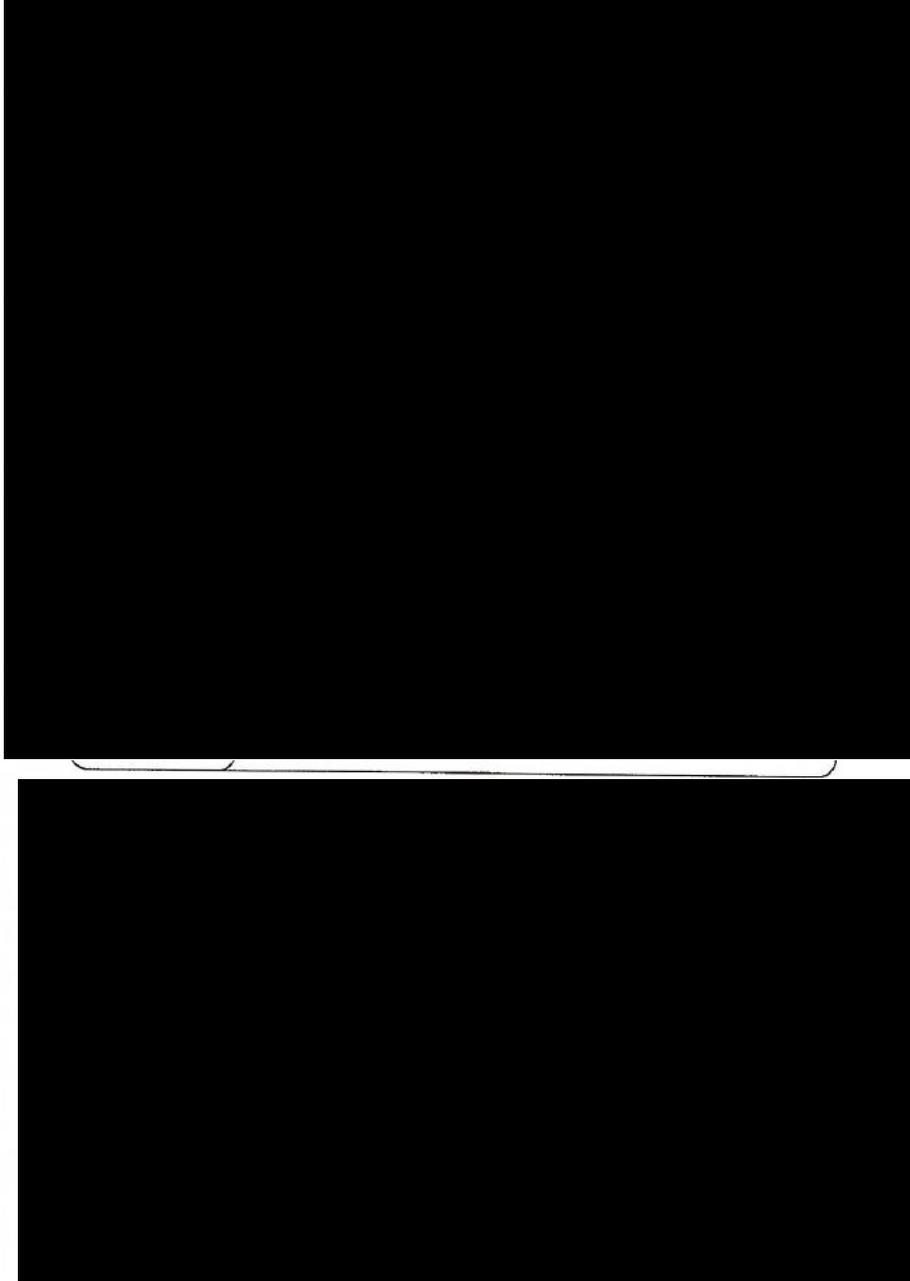


Figure 38: Occupier Council rates notice



Tel: 08 6189 9090
www.auswideconsulting.com.au
info@auswideconsulting.com.au
ABN 18 162 361 042

TRAFFIC IMPACT ASSESSMENT

2530 COALARA ROAD, BADGINGARRA WA 6521

Farm with Proposed Beef Feedlot Development

Prepared for:	Central Stockcare Pty Ltd
Date Prepared:	December 2020
Revision:	1.2
Shire of Dandaragan Application #:	T.B.A.

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INTRODUCTION

AusWide Consulting were commissioned by Central Stockcare Pty Ltd to prepare a Traffic Impact Assessment for a beef feedlot development to be located at 2530 Coalara Road, Badingarra, in the Shire of Dandaragan.

BACKGROUND AND EXISTING CONDITIONS

As shown in Figure 1, the subject site is bound by Boothendarra Road to the south and Coalara Road to the west. There are no residential dwellings in the immediate vicinity of the site.

The closest non-company dwelling is 6 kilometres distance, as the crow flies, from the development.

Vehicle access to the site is available through Boothendarra Road at the north side connecting to Coalara Road to the west of the subject site.

Key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress.

Figure 1: presents the location of the subject site on a road map.

Figure 2: presents an aerial view of the subject site showing surrounding roads.

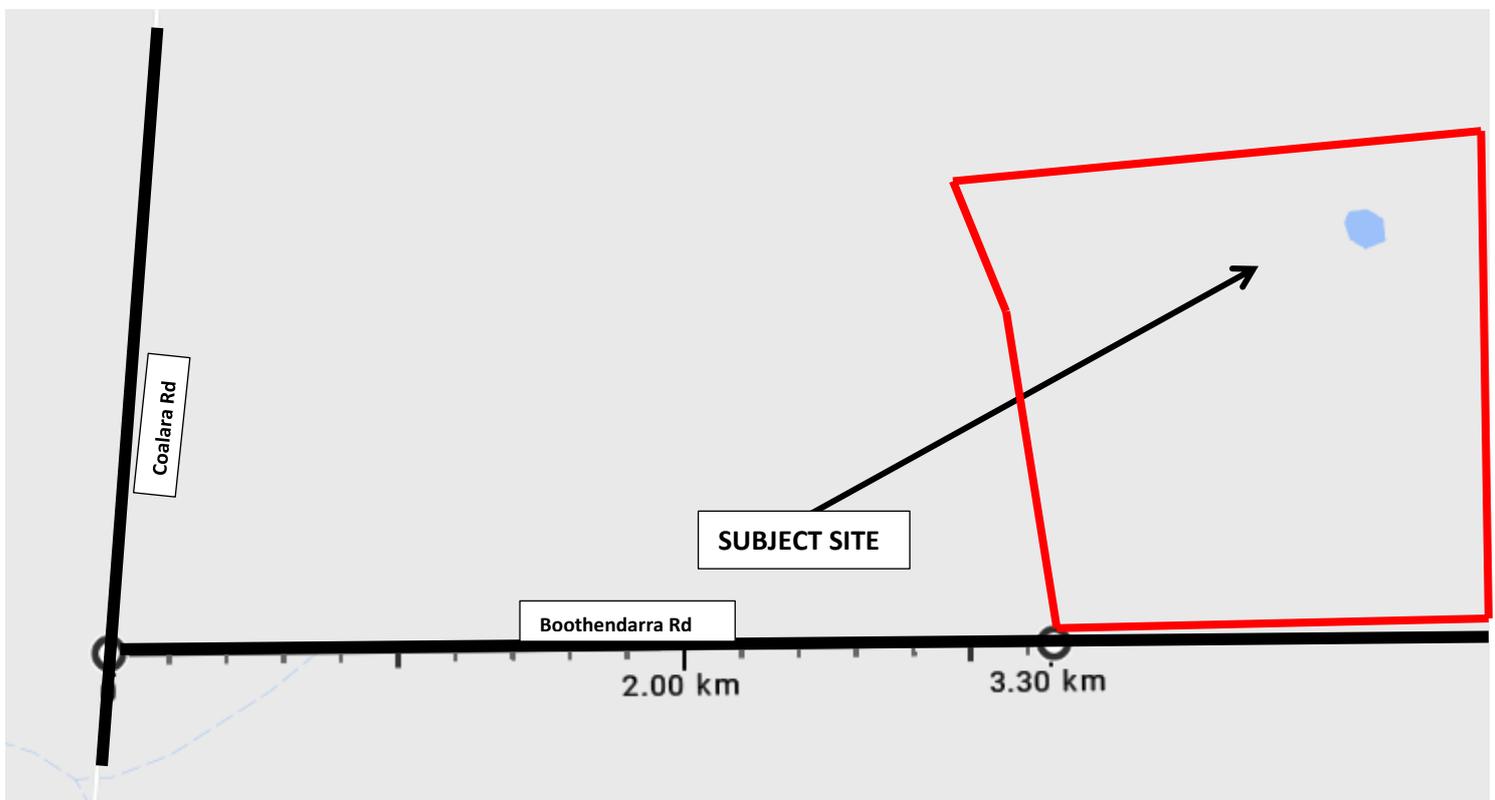


Figure 1: Location of the subject site on a road map.

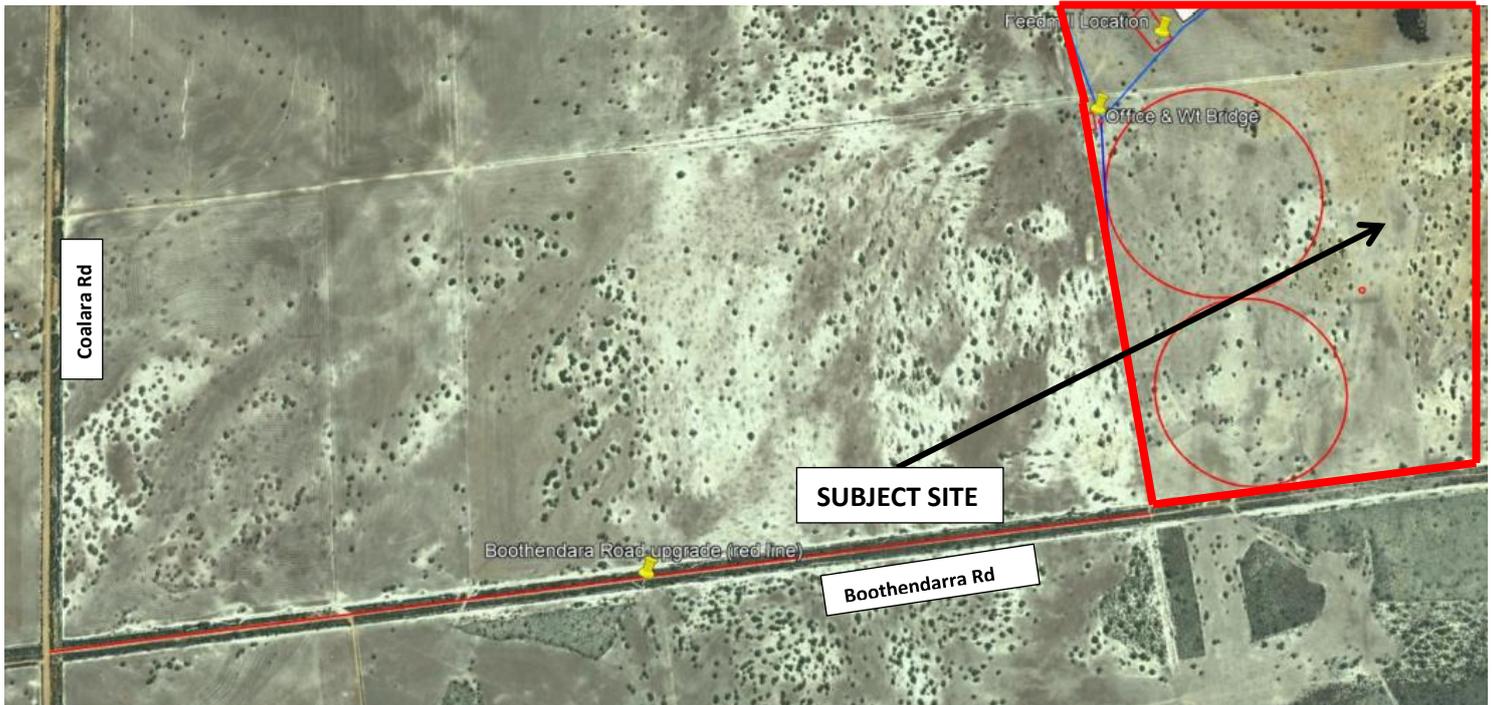


Figure 2: Location of the subject site on an aerial view

PROPOSED DEVELOPMENT

The site is presently vacant farmland used for cropping and grazing. The proposed development involves the operation of a beef feedlot on the site. A staged development is planned for the site as detailed below:

Stage 1: 4,000 Standard cattle units (2 years after DA approval).

Stage 2: 6,000 SCU (3 years after DA approval).

Stage 3: 8,000 (5 years after DA approval final stage).

Inward truck movements trips will be generated with cattle delivered to the site as business operator buys cattle from external farms to feed them on the feedlot for the specified days for various beef customer programs.

It is proposed to provide a full movement access from Boothendarra Road to Coalara Road that services the subject site.

Table 1 below gives the development summary.

Table 1: Development summary

Stage	1	2	3 (Final)
No. of head in Standard Cattle Units	4,000	6,000	8,000
Total feedstuffs at 80% occupancy (tonnes)	15,768	23,652	31,536
Total cattle inwards (tonnes)	4,171.4	6,257.2	8342.9
Total cattle outwards (tonnes)	6,539.3	9,809.0	13,078.7

VEHICLE ACCESS

The proposed development will be served by a full-movement crossover on Boothendarra Road at the south side of the subject site, which connects with Coalara Road. The 3.3 Km length of Boothendarra Road from Coalara Road to the site will be upgraded to be suitable for B Train trucks with cattle or feed.

Figure 3 illustrates the proposed access and egress system for the site.

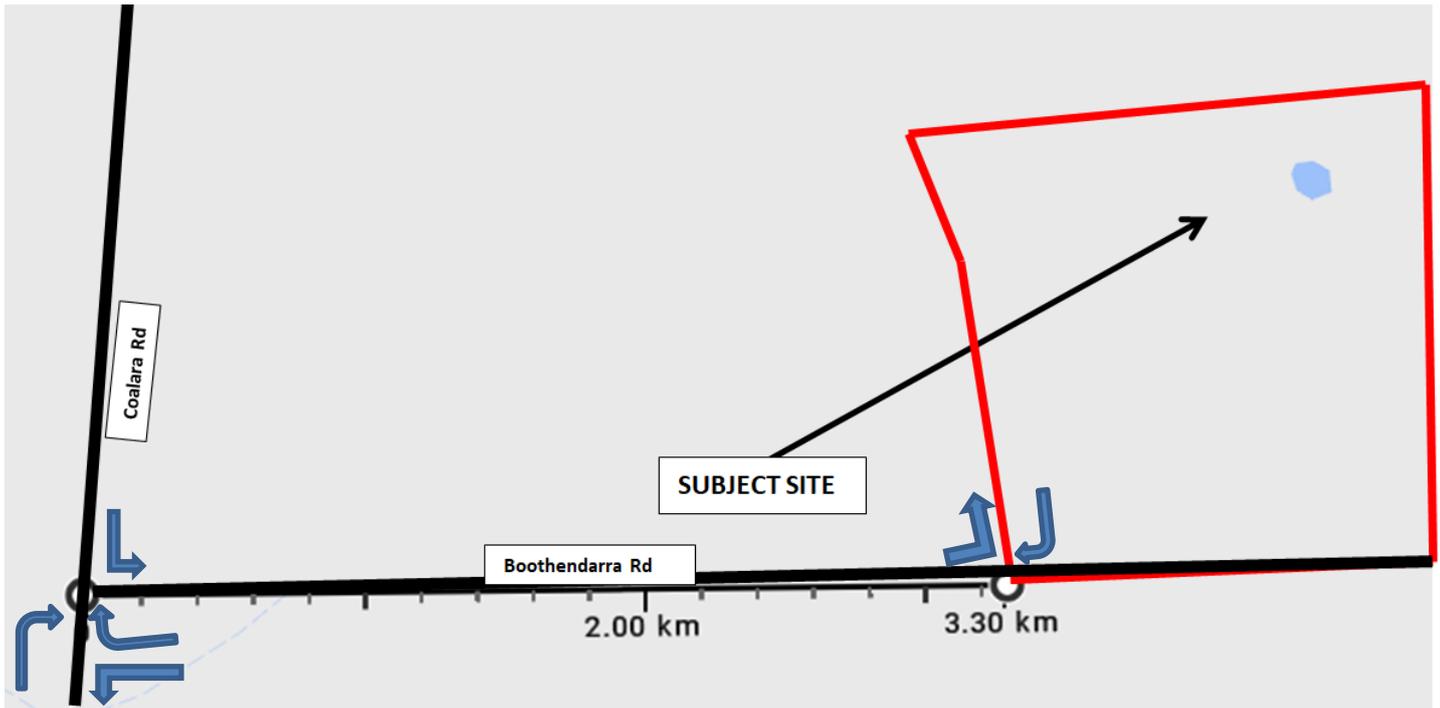
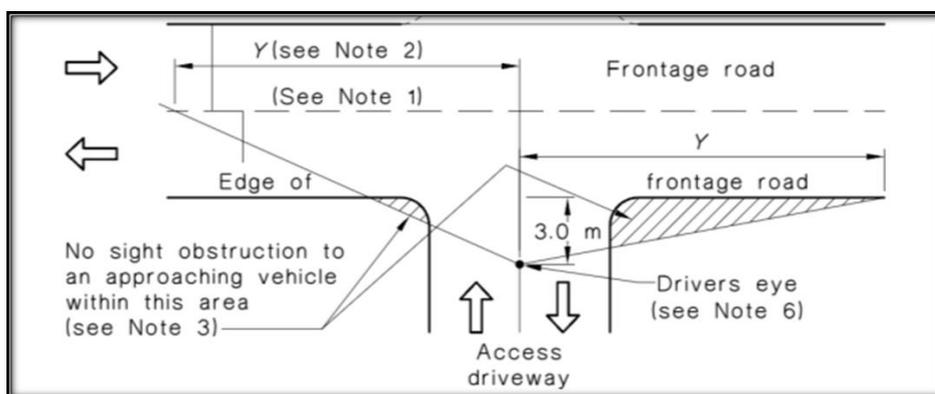


Figure 3: Proposed access and egress system

SIGHT DISTANCE FROM VEHICLE ACCESS

The vehicle exit from the site is off Boothendarra Road which is classified as an access Road. According to the Metropolitan Region Scheme (MRS), a recommended operating speed is 50km/hr. It will distribute traffic through to Coalara Road which is a local distributor road in the Main Roads WA Metropolitan Functional Road Hierarchy, with an operating speed of 60km/hr.

The sight distances have been assessed for an operating speed of 50km/hr on Boothendarra Road and an operating speed of 60km/hr on Coalara Road. Referring to Figure 3.3 of AS 2890.2:2004, it is recommended to leave the shaded area in the figure below (excerpt from AS 2890.2:2004) free of permanent obstacles for a length 'Y' of 69 metres.



Frontage road speed (Note 4) km/h	Distance (Y) along frontage road m		
	Access driveways other than domestic (Note 5)		Domestic property access (Note 6)
	Desirable 5 s gap	Minimum SSD	
40	55	35	30
50	69	45	40
60	83	65	55
70	97	85	70
80	111	105	95
90	125	130	Use values from 2 nd and 3 rd columns
100	139	160	
110	153	190	

The sight distances observed along Boothendarra Road for the proposed vehicle exit from the development site was 190 metres to the west and 200 metres to the east.

The sight distances observed along Coalara Road for the proposed vehicle exit from the development site was 190 metres to the north and 250 metres to the south.

All the sight distances observed exceed the desirable sight distance of 69 - 83 metres from the table above or the minimum sight distance required of 45 - 65 metres.

Figures 4 and 5 below show the observed sight distances from the development traffic entry/exit on Boothendarra Road and Coalara Road.



Figure 4: Observed sight distances from the site traffic entry/exit on Boothendarra Road



Figure 5: Observed sight distances from the site traffic entry/exit on Coalara Road

TRAFFIC IMPACTS OF THE PROPOSED DEVELOPMENT

The RTA NSW Guide to Traffic Generating Developments 2002 does not provide any traffic generation rate for a feed lot as defined in the proposed development. The traffic generation from the proposed development has been assessed using the Environmental Assessment as a guide.

The calculation of the traffic generated by the development at each subsequent stage has been summarised in Table 2 below.

Table 2: Summary of the calculation of trip generation

Stage	Standard Cattle Units (SCU)	Tonnage calculation at 80% occupancy	Tonnes	BD Loads	Trips/Year	Trips/Day
1	4,000	Total feedstock = (4,000 x 80% x 13.5 x 365/1000)	15,768	38	415	1.14
		1, tonnes of grain from CSC property	1,000	38	26.3	0.07
		All fibre production CSC property	2,365	38	62.2	0.17
		Net imported feed	12,402	38	326.4	0.89
		% of local imported feed	8,302	38	218.5	0.60
		% of Highway sourced feed	3,100	38	81.6	0.22
		Total cattle in @ 80% = (4,000 x 80% x 400 x 365/112)	4,171.4	36	115.9	0.32
		Total cattle out @ 75% = (4,000 x 75% x 635 x 365/112)	6539.4	36	181.6	0.50
		SUBTOTAL		53,647.8	300	1,275.4
2	6,000	Total feedstock = (6,000 x 80% x 13.5 x 365/1000)	23,652	38	622.4	1.70
		1.5 tonnes of grain from CSC property	1,500	38	39.5	0.11
		All fibre production CSC property	3,153	38	83.0	0.23
		Net imported feed	18,604	38	490.0	0.89
		% of local imported feed	13,953.1	38	367.2	0.60
		% of Highway sourced feed	4,651.0	38	122.4	0.33
		Total cattle in @ 80% = (6,000 x 80% x 400 x 365/112)	6,257.1	36	173.8	0.48
		Total cattle out @ 75% = (6,000 x 75% x 635 x 365/112)	9,312.4	36	258.7	0.71
		SUBTOTAL		81,082.6	300	1,769.9

Stage	Standard Cattle Units (SCU)	Tonnage calculation at 80% occupancy	Tonnes	BD Loads	Trips/Year	Trips/Day		
3 Final stage- (5 years after DA approval)	8,000	Total feedstock = (8,000 x 80% x 13.5 x 365/1000)	31,536	38	830	2.28		
		2, tonnes of grain from CSC property	2,000	38	53	0.14		
		All fibre production CSC property	4730.4	38	124	0.34		
		Net imported feed	24,805.6	38	653	1.78		
		% of local imported feed	18,604.2	38	490	1.35		
		% of Highway sourced feed	6,201.4	38	163	0.45		
		Total cattle in @ 80% = 8,000 x 80% x 400 x 365/112)	8342.86	36	232	0.64		
		Total cattle out @ 75% = (8,000 x 75% x 635 x 365/112)	13,078.7	36	363	1.00		
		SUBTOTAL			109,299.2	300	2,908.0	7.98

Table 3 below is a summary of the traffic generated by the 3 stages of the proposed development.

Table 3: Summary of the traffic generated by the 3 stages of the proposed development

Stage	SCU	BD Loads	Trips per year	Trips per day	Trips per hour
1	4,000	300	1,275.4	3.91	0.4/hr
2	6,000	300	1,769.9	4.84	0.48/hr
3	8,000	300	2,908.0	7.98	0.8/hr

The only traffic volume count from Main Roads data on the surrounding streets is for Watheroo Road which is 100 vehicles per day.

The Road Hierarchy for Western Australia gives some indication of the maximum desirable traffic volumes on roads based on their classification.

Coalara Road is considered to be a local distributor road with a maximum desirable traffic volume of 100 vehicles per day in non-built up areas. The recommended operating speed is 60 km/hr.

Boothendarra Road is considered to be an access road with a maximum desirable traffic volume of 75 vehicles per day.

The maximum daily trip rate as assessed in Table 3 above is 8 vehicles per day for stage 3 operation. Half of that traffic would access Watheroo Road. The percentage increase in traffic on Watheroo Road is = $(4/100) = 4\%$.

This is a low increase in traffic volume compared to the existing traffic flow on Watheroo and the surrounding roads. The maximum daily trip rate from the development at 8 Vehicles per day would have an insignificant impact on traffic using Coalara Road, Watheroo Road and nearby roads.

Impact on Surrounding Roads

The WAPC Transport Impact Assessment Guidelines (2016) provides the following guidance on the assessment of traffic impacts: “As a general guide, an increase in traffic of less than 10 per cent of capacity would not normally be likely to have a material impact on any particular section of road, but increases over 10 per cent may. All sections of road with an increase greater than 10 per cent of capacity should therefore be included in the analysis.

For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 per cent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.” The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. The expected increase is 0.8 vehicles per hour. Therefore, the impact on the surrounding road network is considered to be insignificant and acceptable.

The traffic generated by the proposed development will be distributed via the local road network to Coalara Road and Watheroo Road. The total proposed development peak hour traffic is detailed in Figure 6 below. The development traffic distribution modelled in this report has been evaluated by considering the catchment area of the proposed development, existing traffic patterns and the identified key traffic routes.

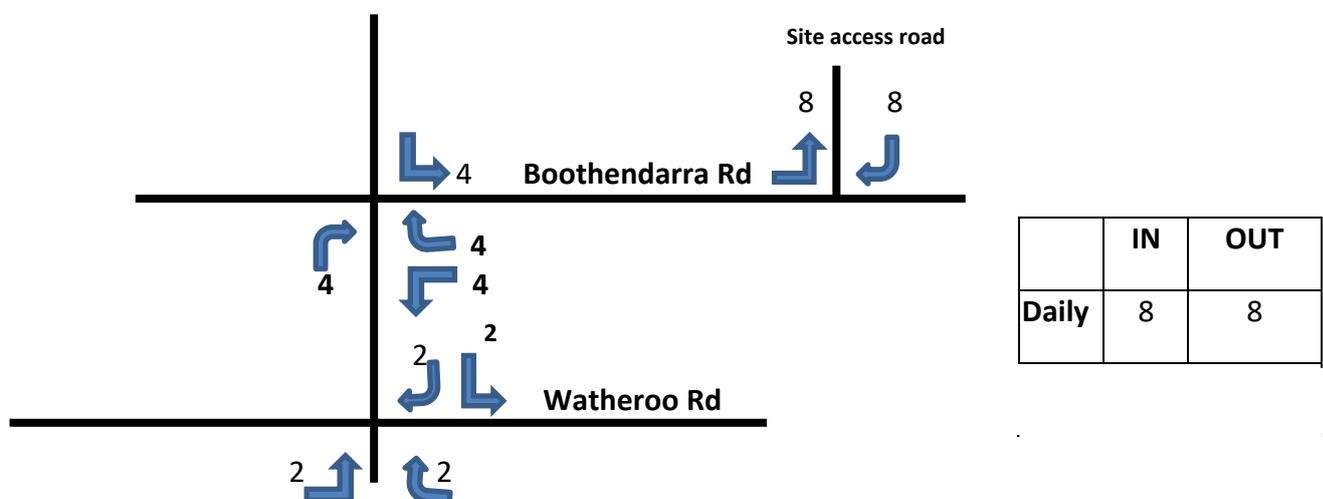


Figure 6: Daily traffic generated by stage 3 of the development.

PROPOSED ACCESS ROUTE TO AND FROM THE DEVELOPMENT

There are limited roads providing access to and from the site. The main access point is through the intersection of Boothendarra Road and Coalara Road. Traffic from the north would be travelling along Coalara Road. Traffic from the south would travel from Watheroo Road along Coalara Road.

Since Coalara Road is about 18kms long from Watheroo Road to the nearest main intersection with Marchagee Track, there are no suitable crossroads for traffic to divert from Coalara Road. However, the traffic impact analysis above has demonstrated that at the maximum stage 3, only 8 vehicles per day would be generated from the whole development.

This would have an insignificant impact on the existing road network used to provide access to and from the development site.

ASSESSMENT OF THE OPERATION OF THE DEVELOPMENT'S ACCESS TO COALARA ROAD

From Figure 6 above the total peak hour traffic turning in and out of the intersection of Boothendarra Road and Coalara Road is 8 vehicles per day. This represents only $(8/100) \% = 8 \%$ increase in Coalara Road daily traffic, which is a minor traffic increase on Coalara Road. This small increase would have no significant effect on the operation of the development's access from Boothendarra Road and Coalara Road.

Assessment under AustRoads Guide to Road Design (Part 3)

Sight Distance

Under Table 5.4 of the AustRoads Guide to Road Design (Part 3), adequate sight distance based on the road speed should be provided at the access driveway (reproduced here as **Table 4**).

Measurements taken off the Google Maps aerial photo indicate that more than 190 metres of sight distance can be provided in each direction along Coalara Road from the proposed access road of Boothendarra Road (see **Figure 5** above). From the values in Table 4, this distance is adequate for an operating speed of 60km/h. It is considered that, given the straight and wide cross-section of Coalara Road, the sight distance at the access road to the site (and therefore for the proposed development) is therefore considered to be adequate.

Table 4: Sight distance diagram from Table 5.4, AustRoads Guide to Road Design Part 3

Design speed (km/h)	Absolute minimum values Only for specific road types and situations ⁽¹⁾ based on $d = 0.46$ ^{(2), (3)}			Desirable minimum values for most urban and rural road types based on $d = 0.36$			Desirable values for major highways and freeways based on $d = 0.26$	
	$R_T = 1.5s^{(4)}$	$R_T = 2.0s^{(4)}$	$R_T = 2.5s$	$R_T = 1.5s^{(4)}$	$R_T = 2.0s^{(4)}$	$R_T = 2.5s$	$R_T = 2.0s$	$R_T = 2.5s$
40	30	36	–	34	40	45	–	–
50	42	49	–	48	55	62	–	–
60	56	64	–	64	73	81	–	–
70	71	81	–	83	92	102	113	123
80	88	99	–	103	114	126	141	152
90	107	119	132	126	139	151	173	185
100	–	141	155	–	165	179	207	221
110	–	165	180	–	193	209	244	260
120	–	190	207	–	224	241	285	301
130	–	217	235	–	257	275	328	346

Traffic Volumes and Gap Acceptance

The expected traffic volume entering to and from Coalara Road is 8 movements per day. Existing traffic using Coalara Road has been assessed as 100 vehicles per day from The Road Hierarchy for Western Australia.

The expected volume of up to 8 vehicles per day generated by the new development at stage 3 would lead to an increase of 8% vehicles per day. Equal numbers of right turn out from the site and left turns into the site may therefore be expected. It is considered that the width of Coalara Road at about 13 metres provides opportunities to enter and exit the site.

Table 5 and 6 show the required gap and follow-up headways for traffic entering a road. For left and right turns into Coalara Road the gap acceptance is 5 seconds. At 60km/h this distance is up to 83 metres. From the previous section on sight distance, the sight distances along Coalara Road are 190 to 250 metres. These easily exceed the desirable sight distance of 83 metres from the site to achieve the required gap acceptance. It is considered that the proposed development will not have a significant impact on the operation of Coalara Road traffic.

Table 5: Gap acceptance/follow-up headways from Table 3.4, Guide to Road Design (Part 4A)

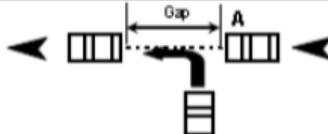
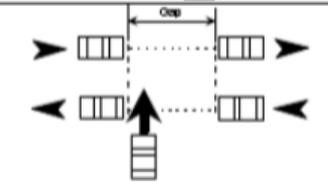
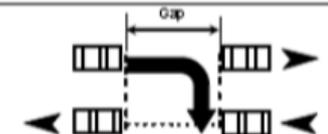
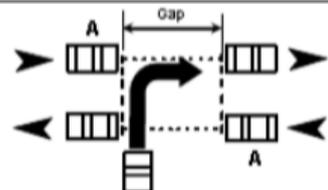
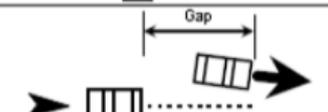
Movement	Diagram	Description	ta	tf
Left-hand turn		Not interfering with A Requiring A to slow	14-40 sec 5 sec	2-3 sec 2-3 sec
Crossing		Two lane/one way Three lane/one way Four lane/one way Two lane/two way Four lane/two way Six lane/two way	4 sec 6 sec 8 sec 5 sec 8 sec 8 sec	2 sec 3 sec 4 sec 3 sec 5 sec 5 sec
Right-hand turn from major road		Across one lane Across two lanes Across three lanes	4sec 5sec 6sec	2 sec 3 sec 4 sec
Right-hand turn from minor road		Not interfering with A One way Two lane/two way Four lane/two way Six lane/two way	14-40 sec 3 sec 5 sec 8 sec 8 sec	3 sec 3 sec 3 sec 5 sec 5 sec
Merge		Acceleration lane	3 sec	2 sec

Table 6: Minimum gap sight distance from Table 3.5, Guide to Road Design – Part 4A

Critical gap acceptance time (ta) (secs)	85th percentile speed of approaching vehicle (km/h)										
	10	20	30	40	50	60	70	80	90	100	110
4	11	22	33	44	55	67	78	89	100	111	122
5	14	28	42	55	69	83	97	111	125	139	153
6	17	33	50	67	83	100	117	133	150	167	183
7	19	39	58	78	97	117	136	155	175	194	214
8	22	44	67	89	111	133	155	178	200	222	244
9	25	50	75	100	125	150	175	200	225	250	275
10	28	56	83	111	139	167	194	222	250	278	305

The above assessment shows that the low daily traffic entering and leaving the site access to Coalara Road will have no difficulty in finding critical gaps to turn onto or from Coalara Road.

CONCLUSIONS

The proposed development will involve the operation of a farm with a beef cattle feedlot. The feedlot development will be constructed in 3 stages, starting with stage 1, to be completed 2 years from DA approval.

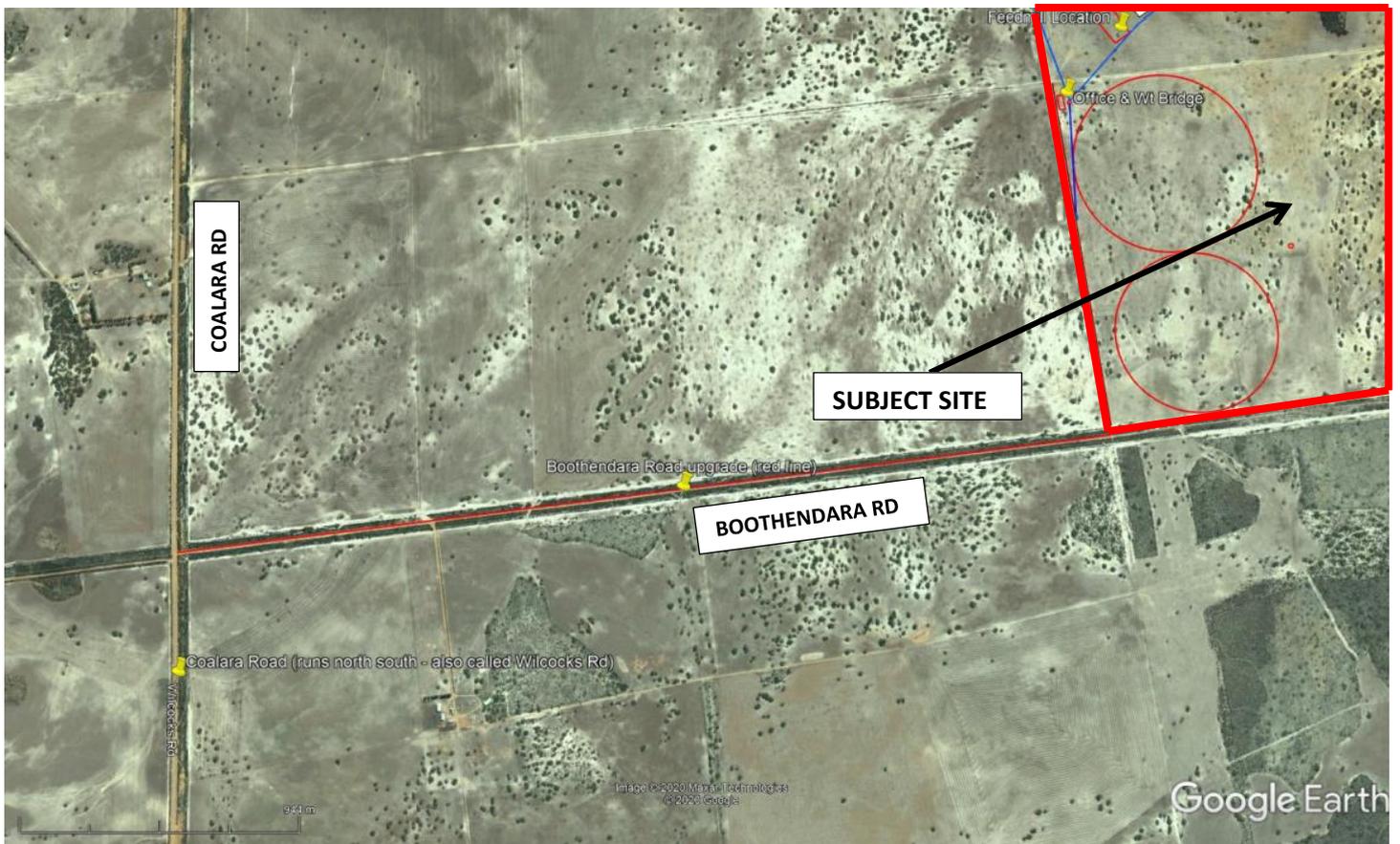
The assessment of the expected daily and peak hour vehicular traffic movements generated by the proposed development reveals low levels of increased vehicular traffic. The daily traffic generated by the development is 3.91 vehicles per day at stage 1, 4.84 vehicles per day at stage 2 and 7.98 vehicles per day at stage 3. The peak hour trip rate in stage 3 is 0.8 vehicles per hour. This low level of trips generated by the proposed development would have no significant effect on the traffic using Coalara Road and Watheroo Road. The daily traffic generated by the proposed development represents only 8% of the daily traffic on Coalara Road and 4% of Watheroo Road traffic.

The traffic generated by the proposed development at stage 3 is only 8 vehicles per day and therefore will have a less than minor impact on the existing traffic using Coalara Road and Watheroo Road.

The sight distances along Coalara Road for vehicles exiting the site through Boothendarra Road has been observed as 190 metres to the north and 250 metres to the south. The observed sight distances exceed the desirable sight distance of 83 metres for a critical gap to exit into the Coalara Road traffic. The site vehicle access complies with AS/NZS 2890.1-2004 in terms of sight distances. There is adequate sight distance for the rare pedestrians on Coalara Road.

Therefore, based on the assessment presented in this report, it is considered that the proposed development will have a less than minor effect on the existing traffic in the surrounding roads and very little to no effect on the on-street parking in the vicinity of the site.

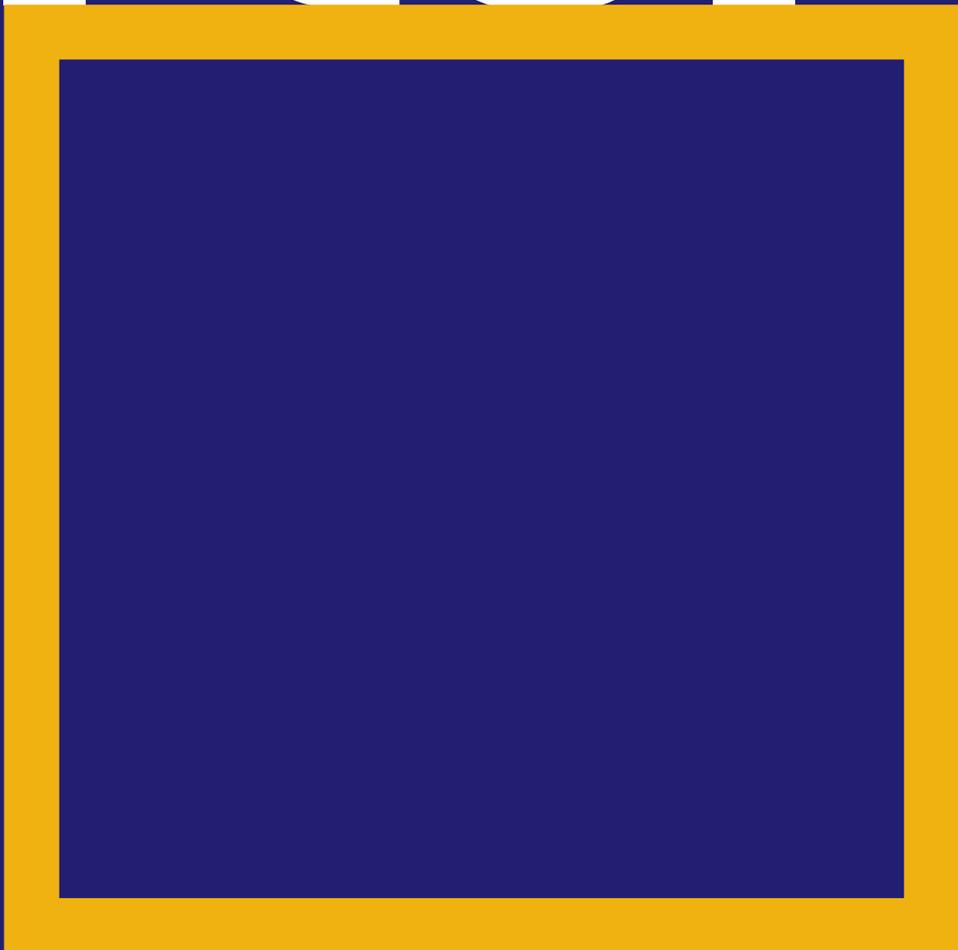
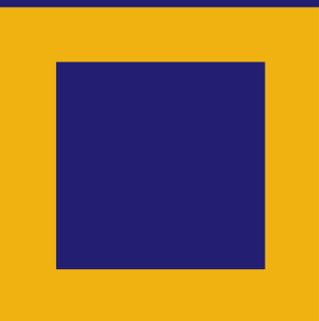
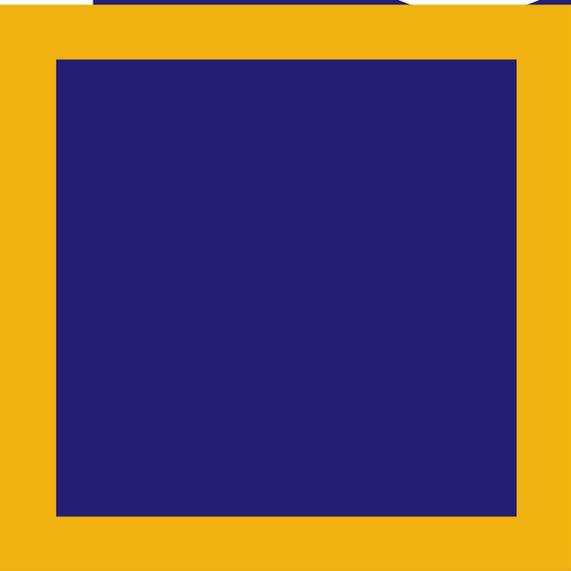
APPENDIX A: PROPOSED SITE LOCALE



2530 COALARA ROAD,
BOOTHENDARRA

PROPOSED FEEDLOT
TRAFFIC IMPACT ON
ROADS ASSESSMENT

Porter



REPORT PREPARED FOR

Shire of Dandaragan

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1.0 INTRODUCTION

1.1 Background

Porter Consulting Engineers has been commissioned by the Shire of Dandaragan to prepare a Traffic Impact on Roads Assessment of a Development Application received by the Shire for a proposed Cattle Feedlot at 2530 Coalara Road, Boothendarra. Access to the Site will be off Boothendarra Road north side approximately 3.3km east of Coalara Road.

The Site is located approximately 200km north of Perth. The location is shown in a regional context in **Figure 1** and in local context in **Figure 2**. Travelling on Coalara Road, Boothendarra Road is located approximately 25.6km north from North West Road and 7.2km north from Watheroo Road. Boothendarra Road is also located 24.5km south from Coorow Green Head Road along Willcocks Road and Coalara Road. Boothendarra Road, Coalara Road and Willcocks Road are all unsealed gravel roads. Marchagee Track at Coalara Road forms a northern boundary between the Shire of Dandaragan and Shire of Coorow.



Figure 1: Site Location – Regional Context (*GoogleMaps*)

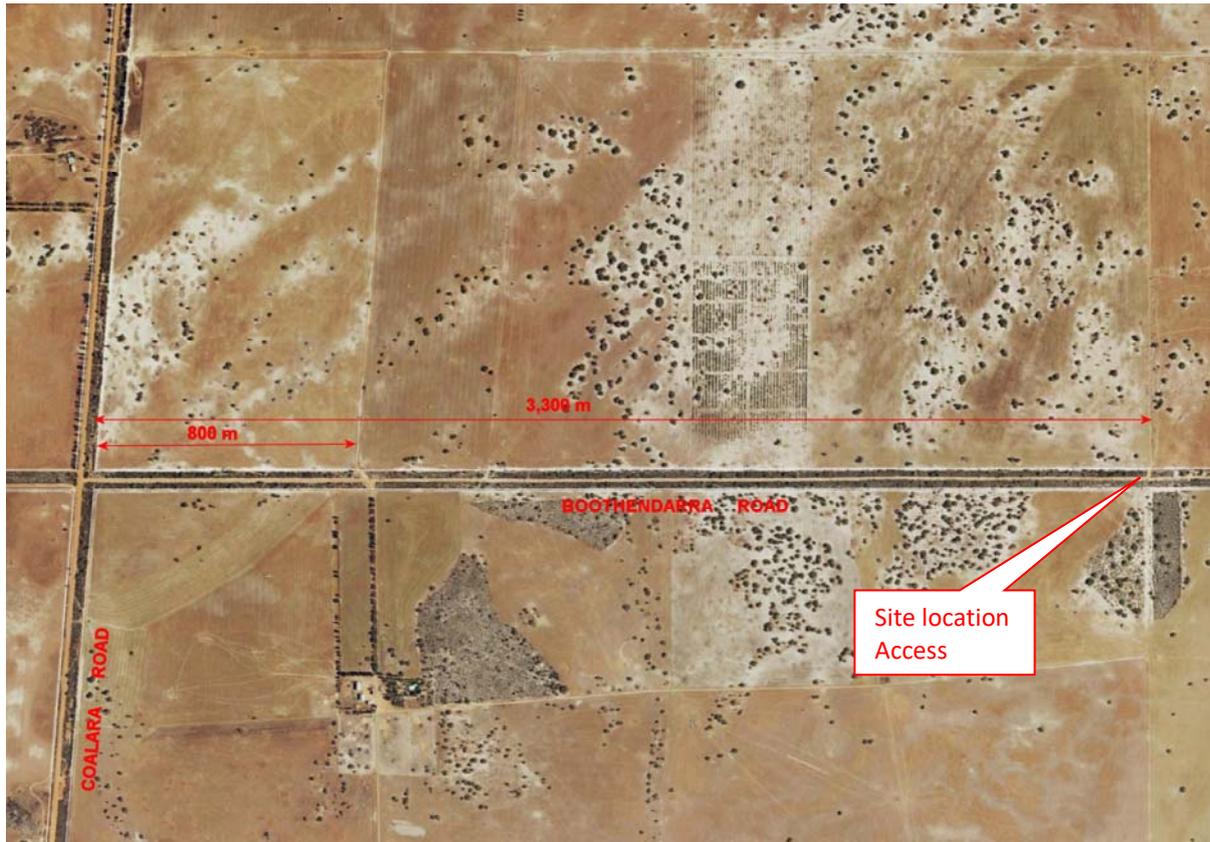


Figure 2: Site Location – Local Context (GoogleMaps)

1.2 Scope of Assessment

The Development Application proposes for the subject land (‘Sendem Downs’) to be used as a beef cattle feeding facility with the cattle transported into and away from the Site by trucks using the current road network.

In addition to the transportation of cattle there is also proposed to be transportation to the site by truck of grain for cattle feeding and a number of staff vehicles on a shift basis. The normal operating hours of the Site are proposed to be from 7.00am to 5.00pm, 7 days a week.

This report will review information supplied by the proponent’s Development Application Traffic Impact Assessment report prepared by Auswide dated December 2020 Revision 1.2 with the intent of making assessment of potential traffic impacts on the Shires road network and to provide recommendations.

The Shire of Dandaragan local government boundary northward along Coalara Road ends at Marchagee Track. Willcocks Road and Coorow Green Head Road are located in the Shire of Coorow and are accordingly under the control of the Shire of Coorow.

2.0 DEVELOPMENT PROPOSAL

2.1 Proposed Land Use

The Site is presently vacant cleared farmed land used for cropping and grazing. The proposed development is to create a beef cattle feedlot on the Site with development proposed in 3 stages to final full development as follows:

Stage 1: 4,000 standard cattle units (2 years after DA approval)

Stage 2: 6,000 standard cattle units (3 years after DA approval)

Stage 3: 8,000 standard cattle units (5 years after DA approval)

The development proposes vehicles access in and out of the site off Boothendarra Road located at approximately 3.3km east of Coalara Road.

The proponent has supplied the following tables of estimated traffic generation at 80% and 100% of full development (Stage 3).

Feedlot Occupancy	Light Vehicles Weekly			Trucks Weekly (B-Double Equivalents)					Weekly Total All Vehicles
	Staff	Other	Total	Local Feed	Other Feed	Cattle	Other	Total	
80%	16	5	21	9.4	3.1	11.4	1	25	46
100%	16	5	21	11.8	3.9	14.3	1	31	52

Assumed Annual Quantities	Total tonnes	B-Double Load (tonnes)	Trips per Year	Trips per Week	Trips per Day
Total feedstuffs @ 80% = 8,000 x 80% x 13.5 x 365/1,000	31,536	38	830	16	2.28
2,000 tonne of grain supplied from CSC properties	2,000	38	53	1.0	0.14
Fibre (hay, straw, silage) produced on CSC properties	4,730.4	38	124	2.4	0.34
Net imported feed	24,805.6	38	653	12.5	1.78
Local sourced feed	18,604.2	38	490	9.4	1.35
Highway sourced feed	6,201.4	38	163	3.1	0.45
Total cattle inward @ 80% = 8,000 x 80% x 400kg x 365/112	8,342.8	36	232	4.5	0.64
Total cattle out @ 80% = 8,000 x 79% x 635kg x 365/112	13,078.7	36	363	7.0	1.0
Cattle manure generated – to be re-purposed on the Site	0	0	0	0	0

2.2 Context to the Surrounds

Land surrounding this site is a mix of Nature Reserve and National Park or land that is largely similar to the current use on the Site of cleared for farming. There appear to be no higher intensity traffic generating developments in the surrounding near proximity.

3.0 EXISTING SITUATION

3.1 Road Infrastructure and Hierarchy

The proponent has indicated that trucks servicing the site will likely access Boothendarra Road from Coalara Road by 50% to the north from Coorow Green Head Road and 50% from the south from Watheroo Road.

The eastern 3.3km of Boothendarra Road between Coalara Road and the driveway access to the site is currently an unsealed gravel road. The first 800m of gravel pavement east of Coalara Road is slightly wider and appears to have more gravel basecourse than the remainder out to the 3.3km property access.

The southern 7km of Coalara Road between Watheroo Road and Boothendarra Road is currently an unsealed gravel road.

The northern 11.5km of Coalara Road and the 13km of Willcocks Road between Boothendarra Road and Coorow Green Head Road is currently an unsealed gravel road.

Watheroo Road between Coalara Road to Brand Highway is currently sealed as is Coorow Green Head Road between Willcocks Road to Brand Highway.

Figure 3 outlines the existing road geometry standard of Watheroo Road and the intersection with Coalara Road in the vicinity of the site. Coalara Road is sealed at the intersection only.



Figure 3: Road Standard of Adjacent Road Network (*Google Streetview*)

Road	Classification	Other Information
Boothendarra Road	Access Road	
Coalara Road	Local Distributor	
Willcocks Road	Local Distributor	School Bus Route
Watheroo Road	Regional Distributor	
Coorow Green Head Road	Regional Distributor	School Bus Route
Brand Highway	Primary Distributor	

Figure 4 outlines the road hierarchy classification of the surrounding road network.

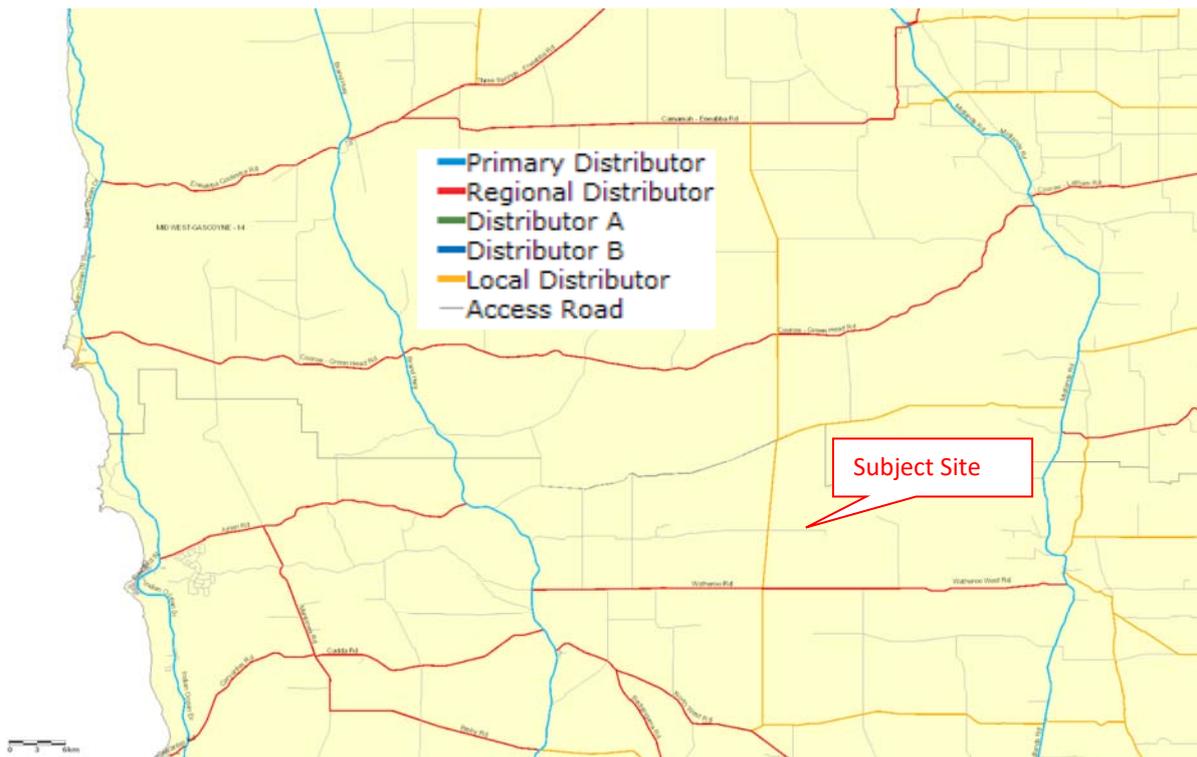


Figure 4: Road Hierarchy of Surrounding Road Network (*Main Roads website*)

3.2 Road Speed Zones

Main Roads WA website Road Information Mapping System provides the following speed limit details on the surrounding roads.

Road	Speed Zoning
Boothendarra Road	Unsigned 50kmh to 110kmh depending on design characteristics
Coalara Road	Unsigned 60kmh to 110kmh depending on design characteristics
Willcocks Road	Unsigned 60kmh to 110kmh depending on design characteristics
Watheroo Road	Unsigned up to 110kmh outside of built up area
Coorow Green Head Road	110kmh posted
Brand Highway	110kmh posted

3.3 Existing Traffic Volumes

Main Roads WA website Trafficmap provides available traffic counts data on roads surrounding the Site. A summary of these are outlined below.

Table 1: Existing Traffic Volumes of Existing Road Network

Road	AWT	Peak Hour	% Heavy Vehicles	85 th Percentile Speed	Date
Watheroo Road east of Brand Highway	33	1 – eastbound in AM 3 – westbound in AM 2 – eastbound in PM 1 – westbound in PM	18.2%	112 kmh	2020/21
Midlands Road south of Coorow Green Head Road	325	18 – northbound 18 – southbound	28.0%	114 kmh	2020/21
Midlands Road north of Watheroo Road	460	19 – northbound 20 – southbound	28.7%	102 kmh	2017/18
Brand Highway south of Watheroo Road	1,855	77 – northbound 99 – southbound	23.9%	112 kmh	2020/21
Brand Highway south of Coorow Green Head Road	1,177	47 – northbound 58 – southbound	28.0%	111 kmh	2016/17
Jurien Road west of Brand Highway	201	29 – eastbound in AM 1 – westbound in AM 2 – eastbound in PM 30 – westbound in PM	13.9%	112 kmh	2020/21

3.4 Crash History

Review of the recent crash history for surrounding intersections has been conducted for the five year period to the end of December 2019 from the Main Roads Western Australia Integrated Road Information System (IRIS) crash database.

	Coalara Rd/ Boothendarra Rd	Coalara Rd/ Watheroo Rd	Willcocks Rd/ Coorow Green Head Rd	Watheroo Rd/ Brand Highway
Total	0	0	0	1
Severity				
Hospital	-	-	-	-
Medical	-	-	-	-
Property Damage Major	-	-	-	1
Property Damage Minor	-	-	-	-
Crash Nature				
Rear End	-	-	-	-
Sideswipe	-	-	-	-
Right Angle	-	-	-	-
Right Turn Thru	-	-	-	-
Hit Object	-	-	-	-
Non Collision	-	-	-	1
Other/Unknown	-	-	-	-
Road Condition				
Dark	-	-	-	1
Dry	-	-	-	1
Curve	-	-	-	1

* Significantly over represented.

3.5 RAV Network

Main Roads Western Australia restricted access heavy vehicles routes mapping website indicates the following heavy vehicle combinations are permitted on the subject roads.

N6.1 – Tandem Drive RAV6 – 36.5m (88.5t)	IECC4 – Import/Export Containerised Cargo
N7.1 – Tandem Drive RAV7 – 36.5m (108.5t)	OBD1 – Oversize Road Train and B-Double (27.5m)
TD1.1 – Tri Drive Category 1 – 19.0m (52t)	OSDP6 – Oversize Divisible Products (36.5m)
TD4.3 – Tri Drive Category 4 – 36.5m (112t)	OWR2 – Over-width Routes (8.5m)

Road Section	RAV Network							
	N6.1	N7.1	TD1.1	TD4.3	IECC4	OBD1	OSDP6	OWR2
Boothendarra Road	x		x			x	x	
Coalara Road	x		x			x	x	
Willcocks Road	x		x			x	x	
Watheroo Road	x		x			x	x	
Coorow Green Head Road		x	x			x	x	
Midlands Road		x	x			x	x	
Brand Highway		x		x	x	x	x	x

Figure 3. RAV Network

4.0 ROAD OPERATING CONDITIONS

4.1 Affected Roads and Intersections

The Developer has proposed for the site to be accessed via two routes:

1. Commencing at Boothendarra Road, west to Coalara Rd, south on Coalara Rd to Watheroo Rd, west on Watheroo Rd to Brand Hwy
2. Commencing at Boothendarra Rd, west to Coalara Rd, north on Coalara Rd to Coorow Green Head Rd, west on Coorow Green Head Rd to Brand Hwy.

The Shire has indicated a preference for the first route only in order to constrain and limit damage to the current road network.

Roads	Sections	Road Length	Intersections
Boothendarra Road	From the Site Access to Coalara Rd	3.3 km	Boothendarra Rd / Coalara Rd
Coalara Road	Boothendarra Rd to Watheroo Rd	7.2 km	Coalara Rd / Watheroo Rd
Coalara Road	Boothendarra Rd to Marchagee Track	11.3 km	Coalara Rd / Marchagee Track
Willcocks Road	Marchagee Track to Coorow Green Head Rd	13.2 km	Willcocks Rd / Coorow Green Head Rd
Watheroo Road	Coalara Road to Brand Hwy	24.5 km	Watheroo Rd / Brand Hwy
Coorow Green Head Road	Willcocks Rd to Brand Hwy	42.2 km	Coorow Green Head Rd / Brand Hwy

Total length of the proposed route 1 from the Site to Brand Highway is 35km and the total length of the proposed route 2 from the Site to Brand Highway is 70km.

4.2 Intersection Sight Distances

The following tables list the minimum sight distance requirements for drivers for a typical reaction time of 2.0 seconds at intersections. Other factors that increase or decrease the minimum requirements include downhill and uphill gradients. Visually the gradients at these intersections appear below minimum thresholds and do not increase distances.

Road Sight Distance Requirements (Austroads)

Minimum Requirements (m)	110kmh
Stopping Sight Distance (SSD) (Car)	193m
Stopping Sight Distance (SSD) (Truck)	225m
Approach Sight Distance (ASD)	193m
Safe Intersection Sight Distance (SISD)	285m
Minimum Gap Sight Distance (MGSD) (5 sec)	153m

Property Access Sight Distance Requirements (AS2890.1)

Property Access Sight Distance (m)	110kmh
Minimum	153m
Desirable	190m

Available sight distances from site inspection.

Boothendarra Road

- a) at Property Access. Looking to the west the sightline is restricted by a low crest and vegetation in the verge from the fenceline to edge of road formation.



- b) at Coalara Road. North looking sightline along Coalara Rd from Boothendarra Rd there is a crest and a slight downhill grade that will extend vehicle braking distance on the gravel.



- c) at Coalara Road. South looking sightline along Coalara Rd is sufficient but there is restriction by vegetation to any vehicle exiting from the offset western leg of Boothendarra Road opposite.



Coalara Road

d) at Watheroo Road. East looking sightline along Watheroo Rd is sufficient.



e) at Watheroo Road. West looking sightline along Watheroo Rd is limited a crest.



Willcocks Road

f) at Coorow Green Head Road. East looking sightline is restricted by a crest.



g) at Coorow Green Head Road. West looking sightline is sufficient.



Watheroo Road

h) at Brand Highway. North looking sightline is sufficient.



i) at Brand Highway. South looking sightline is sufficient.



Coorow Green Head Road

j) at Brand Highway. North looking sightline is sufficient.



k) at Brand Highway. South looking sightline requires removal of a small area of verge vegetation on the corner.



Intersection	Permitted Speed (kmh)	Design Speed (kmh)	Minimum Required Sight Distance (m)	Available Sight Distance (m)
Property Access/ Boothendarra Rd	Up to 110 kmh	110 kmh	Minimum = 153m Desirable = 190m	Less than 50m, restricted by verge vegetation
Boothendarra Rd / Coalara Rd	Up to 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Approximately 250m to north (estimated). More than 300m to south.
Coalara Rd/ Watheroo Rd	Up to 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Less than 200m to west, restricted by crest. More than 300m to east.
Coalara Rd/ Marchagee Track	Up to 110 kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.
Willcocks Rd/ Coorow Green Head Rd	Posted 110 kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.
Watheroo Rd/ Brand Hwy	Posted 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.
Coorow Green Head Rd/ Brand Hwy	Posted 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.

4.3 Heavy Vehicle Turning Swept Paths

Intersection	Permitted Heavy Vehicles	Proposed Heavy Vehicles	Compliance
Boothendarra Rd / Coalara Rd	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Coalara Rd / Watheroo Rd	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Coalara Rd / Marchagee Track	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Willcocks Rd / Coorow Green Head Rd	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Watheroo Rd / Brand Hwy	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Coorow Green Head Rd / Brand Hwy	Up to B-Triple 36.5m and 108.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.

4.4 Road Formation

Road	Section	Existing	Comment
Boothendarra Road	From the Site Access to Coalara Rd	approx. 3.5m wide unsealed gravel formation	Poor suitability for HV's in even dry conditions.
Coalara Road	Boothendarra Rd to Watheroo Rd	approx. 8m wide unsealed gravel formation with soft gravel shoulders	Only suitable for trucks in dry conditions.
Coalara Road	Boothendarra Rd to Marchagee Track	approx. 8m wide unsealed gravel formation with soft gravel shoulders	Only suitable for trucks in dry conditions.
Willcocks Road	Marchagee Track to Coorow Green Head Rd	approx. 8m wide unsealed gravel formation with soft gravel shoulders	Only suitable for trucks in dry conditions.
Watheroo Road	Coalara Road to Brand Hwy	7m bitumen seal 1.0m unsealed shoulders	Suitable for low volume of HV's.
Coorow Green Head Road	Willcocks Rd to Brand Hwy	6.4m bitumen seal 1.0m unsealed shoulders	Suitable for low volume of HV's.

Austrroads provides rates of Passenger Car Equivalent (PCE) for heavy vehicles in order to determine Passenger Car Units (PCUs). The following table provides the PCE multiplier rates for the 27.5m and 36.5m heavy vehicles.

AUSTROADS Bin (Vehicle Class)	Passenger Car Equivalent PCEs	Heavy Vehicles
2-5	2	
6-9	3	B-Double (27.5m)
10-11	4	B-Triple (36.5m)
12	5	

MRWA provides recommended cross-sections for rural roads on the state road network and these are presented in the following table.

Element	Design (PCUs / day)			
	150 - 500	500 - 1000	1000 - 3000	3000 - 8000
Traffic lanes ⁽¹⁾	7.0m (2 x 3.5)	7.0m (2 x 3.5)	7.0m (2 x 3.5)	7.0m (2 x 3.5)
Total shoulder	1.0m	1.5m	1.5 or 2.0m	2.0 or 2.5m
Minimum shoulder seal ⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾	1.0m	1.5m	1.5 or 2.0m	2.0 or 2.5m
Wide centreline	N/A	N/A	None or 1m	None or 1m
Total carriageway	9.0m	10.0m	11.0m	12.0m

AADT is calculated based on Passenger Car Equivalent instead of AADT. The Passenger Car Equivalent (PCE) for large vehicles are used to convert vehicles/day to PCUs/day.

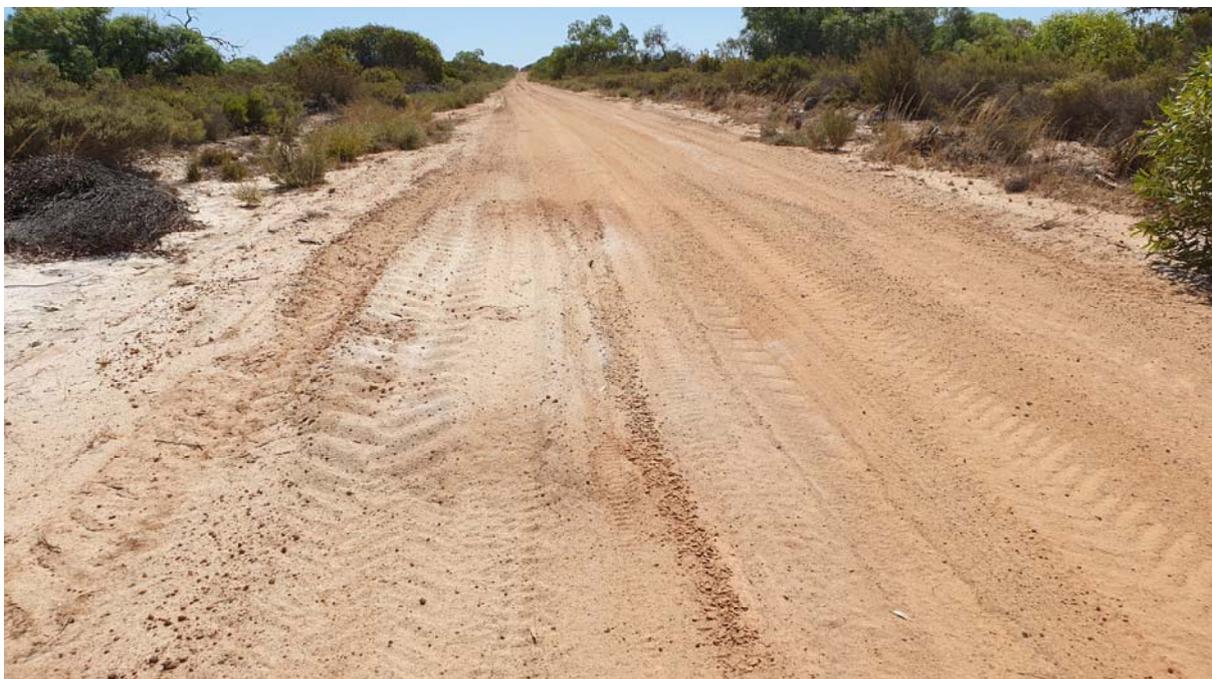
Unsealed shoulders are not used and are replaced by sealed shoulders. The reason for this is two-fold: (a) sealed shoulders generally have lower maintenance and Whole of Life Cycle Costs, and (b) research has shown that sealed shoulders up to 2.0m wide have a significant reduction effect on run-off-the-road and head-on KSI crashes.

The development proposal has indicated trip generation at 100% development of 21 light vehicles/week and 31 B-Doubles/week. This translates to PCUs as follows.

Vehicles/week	PCE factor	PCU
21 light vehicles	1	21
31 B-Doubles	3	93
Total		114

The trips are provided as vehicles per week and the development proposes to operate 7 day/week, so the equivalent daily traffic is 16 PCU/day. This is less than the 150 PCUs/day that is the MRWA recommended threshold minimum for the road to be sealed.

Boothendarra Road



The existing gravel formation is narrow (approx. 3.5m) and noticeably soft in several places where the underlying soil is coming through. The existing formation is not expected to be sufficient and could quickly break down from the expected number of B-Double trucks proposed. There is insufficient width of pavement formation for two-way traffic passing to occur and the abutting verges are mostly vegetated soft sand making it difficult for vehicles to safely pull over to one side to provide passing clearance.

Coalara Road

Advisory signing was noted cautioning drivers that Coalara Road is a School Bus Route.



The intersection of Boothendarra Road with Coalara Road does not have a road name sign installed to confirm to drivers that the roadway is Boothendarra Road. The only signing is that of 'Sendem Downs' placed adjacent to a private mail box. Boothendarra Road (both legs) have the appearance of being private driveway access and not necessarily a public road which may mislead drivers looking for this road.



Watheroo Road

There appears to have been relatively recent motor vehicle tyre skids performed on Watheroo Road at the Coalara Road intersection resulting on some stripping of the seal surface. There is also considerable loose stone from the seal on the Coalara Road north leg. Increasing heavy vehicle turning traffic through this intersection will result in further quicker stripping of the seal surface and lead to earlier failure if not maintained in time.



4.5 Vertical and Horizontal Geometry

Road	Section	Comment
Boothendarra Road	From the Site Access to Coalara Rd	Straight alignment, but narrow formation constrained by vegetation with some gradients that slow moving heavy vehicles could cause heavy rutting and may have difficulty with traction if only has a single driving axle.
Coalara Road	Boothendarra Rd to Watheroo Rd	Straight alignment with some gradients but none excessive.
Coalara Road	Boothendarra Rd to Marchagee Track	Mostly straight alignment with some gradients but none excessive. Shallow S-curve through the Marchagee Track intersection.
Willcocks Road	Marchagee Track to Coorow Green Head Rd	Mostly straight alignment with some gradients but none excessive. Has a shallow S-curve on the approach to Coorow Green Head Road.
Watheroo Road	Coalara Road to Brand Hwy	Mostly straight alignment with some significant gradients. Has a shallow S-curve on the approach to Brand Highway.
Coorow Green Head Road	Willcocks Rd to Brand Hwy	Sinuous alignment with vertical changes in grade. S-curve on the approach to Brand Highway and with Falcone Drive side road 75m from Brand Highway that provides access to Bush Fire Brigade, Gull Service Station and Tourist stop. Property accesses on curves. Tyre tracks on pavement evidence that HV's do not turn lane correct.

4.6 Road Maintenance

The Shire of Dandaragan has advised that their unsealed gravel roads are typically graded three times each year. Those being a maintenance winter grading, a summer grading and a minor touch up grading in between.

The Shire has further advised that their expectation of the impact on Coalara Road to the unsealed gravel formation by the proposed B-Double heavy vehicles is that it is likely the road will now require 7 or 8 maintenance gradings per year.

The main purpose of winter maintenance grading is to provide a good running surface and to form crossfalls so that water runs off and does not pool to form potholes. Moisture is a critical component in maintenance grading so it is best done after light rainfall. However, when the gravel is more heavily wetted it becomes unsuitable for traffic of heavy vehicles and they cannot be permitted on it. Only light vehicles are permitted at those times.

Summer maintenance grading is often done to remove corrugations and improve the running surface. However, summer grading may only be partially successful as there will be little or no moisture to aid compaction.

Maintenance gradings are important for maintaining the Coalara Road and Willcocks Road gravel surface as this is a school bus route.

It should be recognised that due to the grading of the gravel material back and forth between the edge and centre of formation, gravel roads can have soft shoulders that comprise of gravel material that may not be well compacted but visually to drivers will appear similar to the

compacted centre of road. An inspection of Coalara Road and Willcocks Road indicates that there are sections that do not have soft shoulders. The following photograph shows the difference in compaction between the left and right vehicle tracks, where the left wheel track is on the shoulder.



Driver control of a vehicle is significantly affected by differences in wheel tracking and if the road should also be rutted or corrugated, then vehicle control is further affected. Many drivers therefore travel along the centre of road. Should opposing traffic occur requiring each vehicle to pull to the side away from the centre then vehicles may become less controlled, or even destabilised. Therefore as track flows increase proper maintenance of the pavement increases in importance to minimise crash risk.

5.0 SUMMARY AND CONCLUSION

The development application proposes two routes for vehicles to access the Site including their heavy vehicles up to B-Double combination and carrying loads up to 38 tonne. The roads in both routes are Restricted Access Vehicle routes approved for vehicle combinations allowing for at least up to B-Triple 36.5m combinations and carrying up to 88.5 tonne. Accordingly, the development's proposed B-Double heavy vehicle combinations are permitted.

Total length of the proposed Route 1 between the Site's access and Brand Highway via Watheroo Road is 35km and the total length of the proposed Route 2 between the Site's access and Brand Highway via Coorow Green Head Road is 70km. Route 2 adds a significant 70km extra of Shire road network to be maintained.

Boothendarra Road, Coalara Road and Willcocks Road are unsealed gravel roads. Unsealed gravel roads are typically only suitable for heavy vehicles in dry conditions. As when wet the surface of the pavement does not have a bound wearing course and is therefore more easily

damaged particularly in locations where braking and turning occur. Truck damage to gravel roads in the wet can result in sufficient damage as to make it impassable to cars. For this reason it is not uncommon to ban trucks from unsealed gravel roads when the gravel pavement formation is wet.

Route 1 has 10.5km of unsealed gravel roads and Route 2 has 27.8km of unsealed gravel roads. 3.3km of the two routes is common resulting in an additional 24.5km of unsealed gravel road needing to be maintained if Route 2 is used. If only Route 1 is used this would require maintenance of 10.5km of unsealed gravel roads and if Route 2 is also used then it would require an additional 24.5km of unsealed gravel roads to be maintained.

Route	Total length	Unsealed Roads Length (3.3km common)	Sealed Roads length	Extra Unsealed Roads Length	Extra Sealed Roads Length	Total Extra Roads Length
Route 1	35 km	10.5 km	24.5 km	-	-	
Route 2	70 km	27.8 km	42.2 km	24.5 km	42.2 km	66.7 km

The development has indicated a total weekly traffic generation at full development of 52 vehicles. It can be expected there will be a significant saving in both unsealed gravel road and sealed road maintenance if all the proposed development's vehicle trips are limited to travel via Route 1 only.

The Shires' unsealed gravel roads maintenance gradings are typically three per year but the Shire is expecting that the proposed B-Double heavy vehicles would require maintenance grading to now occur up to 7 or 8 times per year, particularly as Coalara Road and Willcocks Road are a school bus route. The development should cover the cost by the Shire for any additional maintenance gradings.

Heavy vehicles must not use unsealed gravel roads when it is wet as the formation becomes much more susceptible to significant damage and may cause it to become hazardous or impassable to light vehicle traffic. At those times, should heavy vehicles to or from the development travel on Coalara Road and Willcocks Road causing it to become damaged to the point where it is a hazard or impassable to light vehicle traffic then the development should cover the cost of damages reinstatement of the road formation incurred by the Shire.

Summary of Conclusions for Shire Consideration	
1	Install Boothendarra Road street name signs on Coalara Road at the two intersections.
2	Upgrade Boothendarra Road unsealed road pavement formation suitable for the proposed weekly number of B-Double heavy vehicles and other development traffic.
3	Do not permit heavy vehicles to use unsealed road pavements when the formation is wet.
4	Permit the proposed heavy vehicles to use only Route 1 (i.e. via Watheroo Road) so as to limit the extent of road network impacted and consequent road maintenance costs.
5	The proposed development cover the annual cost of additional road maintenance incurred by the Shire as a consequence of the development traffic.
6	The proposed development cover costs incurred by the Shire where it reinstates road pavement following damage caused by development traffic that has rendered the road hazardous or impassable to traffic.

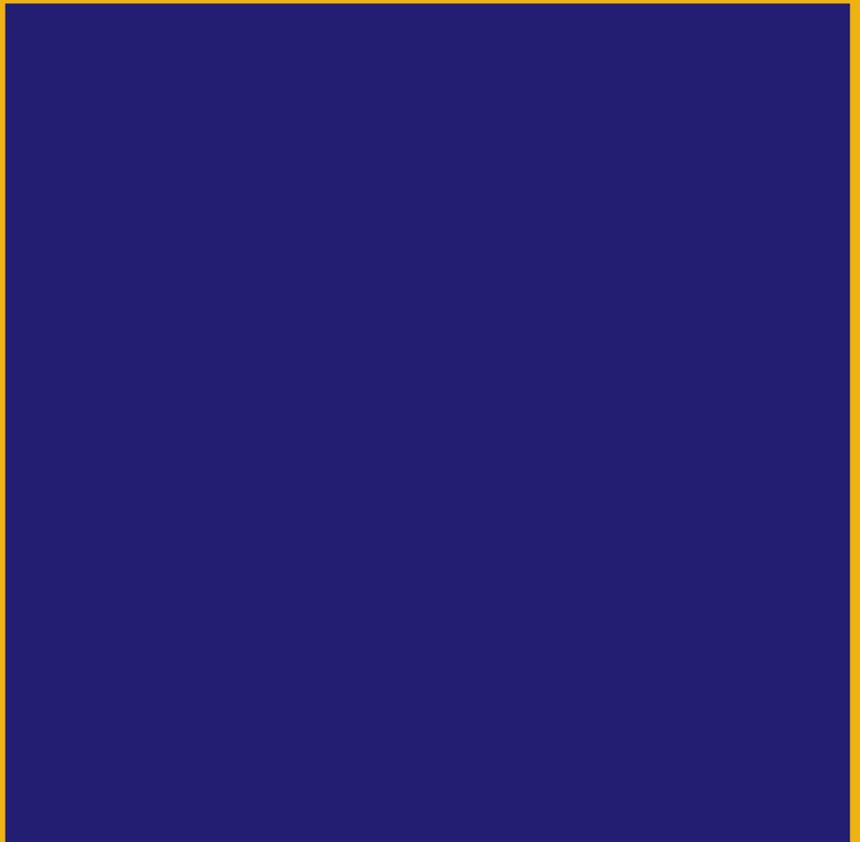
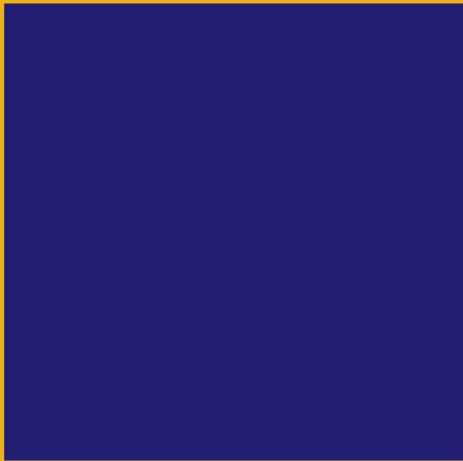


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58 Kishorn Road
Mount Pleasant 6153
Western Australia

PO Box 1036
Canning Bridge 6153
Western Australia

Tel: (08) 9315 9955
Email: office@portereng.com.au

www.portereng.com.au





Department of
**Primary Industries and
Regional Development**

Our reference: LUP 998
Enquiries: A Stuart-Street

Mr Brent Bailey
Chief Executive Officer
Shire of Dandaragan
PO Box 676
JURIEN BAY WA 6516
council@dandaragan.wa.gov.au

Date: 19 January 2021

Dear Brent

Proposed cattle feedlot – Sendem Downs, Coalara Rd, Boothendarra

Thank you for providing the Department of Primary Industries and Regional Development (DPIRD) with the opportunity to comment on the proposed development of a cattle feedlot which will eventually house up to 8 000 head of cattle. DPIRD would like to provide the following information for your consideration.

DPIRD has concerns about the suitability of the proposed land use on this property. These concerns are based on a number of issues not addressed by the proponent in the draft planning report. Consideration of these issues for planning is required in the State Planning Policy 2.5 Rural Planning (2016), Section 5.7 - Animal Premises and also in the Planning and Development (Local Planning Schemes) Regulations (2015), Part 9, Section 67(c), (o) and (q).

These concerns include:

Biosecurity:

- The property is surrounded on three sides by the Watheroo National Park. With the composting of cattle carcasses proposed onsite, as well as a concentration of grain, hay and odours associated with the feedlot activities, the risk of attracting vermin, particularly wild dogs and feral pigs, both known to be in the area, may be increased. If the facility is well managed, there should be minimal risk, and there is an active biosecurity group in the West Midlands who see management of feral pigs and wild dogs as a priority.
- DPIRD suggests monitoring for infestation of stable fly around feedlots, especially where cattle manure has been composted with straw and hay and spread across paddocks, as stable fly may be attracted to the area.

Environmental:

- The property containing the proposed feedlot sits over the Parmelia-Leederville aquifer in the Dandaragan Plateau Hydrozone. The closest long-term DPIRD groundwater monitoring site¹ to the proposed feedlot (BD1 located about 10km

¹ More information in Raper et al (2014) <https://researchlibrary.agric.wa.gov.au/rmtr/374/>

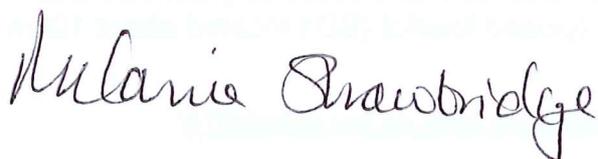
west of the property) shows rising groundwater trends (Attachment 1). Manure disposal, especially under centre pivot irrigation, could result in nutrient leaching over the aquifer.

- DPIRD requests more information on groundwater depths/qualities and any mitigation strategies designed to prevent any impact on groundwater.
- To achieve the planned installation of centre pivots and expansion of cropping areas for manure utilisation (including areas 2 and 3 south and west of the feedlot), clearing of native vegetation is needed, requiring the appropriate clearing permit from Department of Water and Environmental Regulation (DWER). Clearing of areas of native vegetation, however, may further contribute to an increase in the rate of water table rise beneath the property.
- The dominantly loose, sandy nature of the topsoil means the entire property has been rated as having an extreme risk of wind erosion. Some areas with surface ironstone gravels may have a reduced risk. Careful management of the groundcover to prevent loss of topsoil is important.
- The sandy and gravelly nature of the dominant soils means they have low to very low water storage and nutrient holding capacity with rapid profile permeability, so leaching losses may be high.
- DPIRD expects that feedlot pens will have a hardstand that has a permeability of at least 1×10^{-9} m/s. In the agricultural regions of Western Australia, soaking rains are more prominent than storm events and as such hardstands with a permeability of at least 1×10^{-9} m/s are required. DPIRD anticipates that the DWER will address this issue when assessing the works approval application.
- Animal Feed Manufacturing is a prescribed activity according to the *Environmental Protection Regulations 1987*, irrespective of whether the feed is to be used onsite or taken offsite (if the production capacity is more than 1000 tonnes per year). DPIRD would expect that this activity is assessed to ensure it is not impacting on the surrounding environment.
- DPIRD has not conducted a review of the Cropping Nutrient Balance (Section 6.3.5) as this will be assessed by DWER.
- DPIRD notes that there is no detail on the capacities of the wastewater containment infrastructure, including the effluent pond/s. It is assumed that this information will be provided to DWER as part of the works approval application process.

DPIRD expects the proponent to undertake a Nutrient and Irrigation Management Plan (NIMP) to establish how to manage the potential for degradation to the natural environment, particularly the dryland salinity hazard through rising groundwater and nutrient leaching.

I trust these comments inform you on this matter. If you have any queries, please contact Angela Stuart-Street at (08) 9780 6124 or angela.stuart-street@agric.wa.gov.au.

Yours sincerely



Dr Melanie Strawbridge
**Director Agriculture Resource Management Assessment
Sustainability and Biosecurity**

Attachment 1:

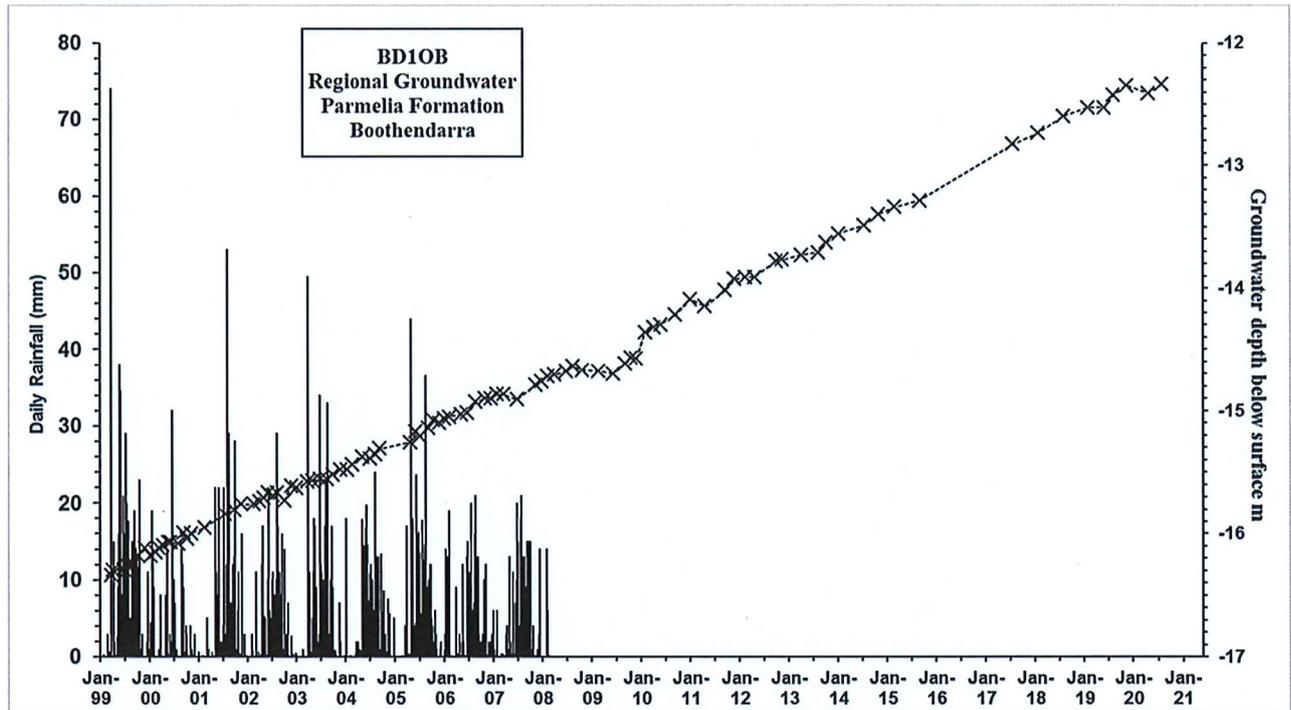


Figure 1a: Bore monitoring site BD1 is approximately 10km west of property



Department of Biodiversity,
Conservation and Attractions



*We're working for
Western Australia.*

Your ref: Sendem Downs
Our ref: PRS 46508
Enquiries: Anthony Desmond
Phone: 9964 0901
Email: anthony.desmond@dbca.wa.gov.au

Mr Rory Mackay
Planning Officer
Shire of Dandaragan
PO Box 676
JURIEN BAY WA 6516

Email: council@dandaragan.wa.gov.au

Dear Mr Mackay

PROPOSED CATTLE FEEDLOT – SENDEM DOWNS, BOOTHENDARRA

Thank you for your email of 8 December 2020 regarding the proposal for a cattle feedlot adjacent to Watheroo National Park.

The Department of Biodiversity, Conservation and Attractions (DBCA) provides the following advice in relation to the proposal.

All effluent, waste water runoff, dust and invasive weed control needs to be managed by the proponent so as not to have a detrimental impact on neighbouring conservation values.

Boundary fencing will need to be managed by the proponent to prevent cattle impacting on native vegetation in neighbouring conservation tenure.

Bushfire risk mitigation for the proposal by the proponent should not have undue expectations placed on the normal fire management practices of DBCA Moora District within Watheroo National Park.

Thank you for raising this matter to our attention. If you have any queries regarding these comments or would like to discuss further, please contact Anthony Desmond on 9964 0901

Yours sincerely

Nigel Sercombe
REGIONAL MANAGER
Midwest Region

13 January 2021



mainroads
WESTERN AUSTRALIA

Enquiries: Pia Marshall 08 9956 1210
Our Ref: 20/1399, D21#126638
Your Ref: NA

1 February 2021

Shire of Dandaragan
Rory Mackay
By email: rorym@dandaragan.wa.gov.au

Dear Rory,

Proposed Cattle Feedlot, 2530 Coalara Road, Boothendarra.

Thank you for consulting Main Roads on the proposed development of a Cattle Feedlot at 2530 Coalara Road, Boothendarra.

The proposed development site is not located within or adjacent to a road reserve under Main Roads jurisdiction and it is considered that the proposal would have no detrimental impact on the level of service, amenity or safety of users of the existing Main Roads network.

Notwithstanding, Main Roads supports the findings of the Traffic Impact Assessment prepared by Porter Consulting Engineers, in particular section 5.0 Summary and Conclusion, point 4 of the table "Permit the proposed heavy vehicles to use only Route 1 (i.e. via Watheroo Road) so as to limit the extent of road network impacted and consequent road maintenance costs".

If you would like any further information please contact Pia Marshall on (08) 9956 1210 or by email pia.marshall@mainroads.wa.gov.au

Yours sincerely,

for Bernie Miller
Regional Manager
Mid West-Gascoyne Region



SUSTAINABLE BEEF SYSTEMS

Pty Ltd

Our Ref: Mr R Mackay emails 01/02/2021
Your Ref: Coalara Feedlot Development

12 February 2021

Planning Officer
Shire of Dandaragan
69 Bashford Street
JURIEN BAY WA 6516

ATTENTION: Mr Rory Mackay

Dear Rory,

**SUBJECT: Central Stockcare Pty Ltd ATF The Ryan Family Trust
Coalara Feedlot Development Application
Response to mooted preliminary development conditions**

Thank you for your advisory emails of 1 February 2021.

Dean Ryan and I have considered your advice and the 4 email attachments.

This letter provides the proponent response to the list of draft conditions that are listed in your email and addresses matters implied and raised in departmental agency responses.

Specific proposed conditions of consent informed by the Porters "Road Assessment" and listed in your email were:

- Boothendarra Road will become a private gated access from Coalara Road via a \$10 per annum gate permit.
- Heavy vehicles will not be permitted on Coalara Rd when the road is wet.
- Heavy vehicles will be limited to 'Route 1 (via Watheroo Rd)' only.
- Road user agreement for use of Coalara Rd will be established between the Shire and Central Stockcare - annual payment of additional road maintenance undertaken by the Shire as a result of the feedlot traffic. This will be at full 8,000 head capacity - 4x additional gradings and 1-2x rollings, estimated around \$10-15K at this stage.
- Road damages condition - if Coalara Rd is used by the feedlot's heavy vehicles when closed during wet periods and the road is rendered impassable to traffic, Central Stockcare will be required to pay the extra costs incurred by the Shire in reinstating the road pavement.

Boothendarra Road private gated access

We accept that Boothendarra Road will become a private gated access from Coalara Road via a \$10 per annum gate permit.

27 Marns Street
Wagga Wagga
NSW 2650

We accept that the road upgrade and maintenance cost to the east of the private gate on Boothendarra Road is the responsibility of the proponent.

Wet weather road conditions (Coalara Rd)

We accept that heavy vehicles will not be permitted on Coalara Rd when the road is closed in wet weather.

Heavy vehicle route to the Coalara Feedlot

We accept that heavy vehicles entering and exiting the feedlot will be limited to 'Route 1 (via Watheroo Rd)' only.

Road user agreement

We have concerns about the proposed road user agreement mooted in dot point 4.

The beef feedlot business is a capital intensive, high turnover, low margin business. Beef feedlots generate beneficial flow-on effects to the local community, the state and the nation. The multiplier effect acts to provide many more jobs offsite than onsite.

The Coalara Feedlot will be funded from private borrowings raised by the Ryan family. The Ryan family is a relatively small family business. This financial model is quite unlike publicly listed mining companies involved in non-renewable extractive activity. The business as a primary food producer is potentially indefinitely sustainable.

We accept that a road user agreement would contain provision for repairs at cost for damage caused by using a closed road in wet weather (see road damages condition below). However, we would request that no annual ongoing fee be charged for public road maintenance outside the private gate on the Boothendarra Road on the basis that it erodes viability in a low margin business. We also advise that it will be a significant period before the business reaches the maximum proposed capacity upon which the Shire indicates it will strike the charge rates.

If a public road user agreement were to contain an annual maintenance cost (which as noted above the proponent does not support), then a "variable but capped" levy linked to the annual truck activity of the feedlot would be a more equitable system. Such a system (if agreed) would also need to be linked to the CPI (or other appropriate index) to ensure escalation did not occur in the case of a change in philosophy or administration. In poor trading environments feedlots at times close-down and cease business activity. In such a time of financial hardship it would be unreasonable to expect the operator to pay the Shire for road maintenance.

Road damages condition

We accept in principle that if the feedlot heavy vehicles use a closed road during wet weather and render the road impassable to traffic, then the feedlot operator will be required to pay extra costs incurred by the Shire to reinstate the road pavement.

DPIRD matters of concern

It is noted that DPIRD officers raised a significant number of matters as “concerns” in response to Shire advice of the proposed feedlot development. DPIRD officers did not have a copy of the full Works Approval Application (WAA) documents now lodged with DWER and may therefore have “concerns” that have been addressed in the full set of WAA papers. Following are advisory notes in respect of each matter raised by DPIRD.

Biosecurity

DPIRD have raised concerns in respect of biosecurity matters.

The proponent has committed in WAA documents submitted to DWER, to become, and maintain accreditation, under the Feedlot Industry Accreditation Scheme (FLIAS).

A key plank of the FLIAS (recently upgraded) is the management of biosecurity issues on site including the management of pests and vermin on the premises. We consider that an appropriate condition (if one was determined to require application as a development consent condition) is the achievement and maintenance of accreditation under the FLIAS.

The proponent also understands that the DWER will consider this issue and has in the recent past prescribed conditions in other environmental licences issued to similar developments. We believe it is unnecessary for the Shire to include such conditions in the DA consent.

Environmental – Groundwater and native vegetation

The full WAA document set deals at length with the groundwater issues. Detail sought by DPIRD has been supplied to DWER in a series of reports including the feedlot Environmental Assessment.

In addition, the proponent has engaged in significant interaction with DWER to reach agreement on the issue of a groundwater licence for this development. It is understood that the rising groundwater in the aquifer a key reason to grant a licence for access to the groundwater resource for this premises and therefore aid in stabilising the groundwater levels.

Groundwater licence conditions prescribed by DWER in licence GWL205125(1) aim to prevent and monitor possible contamination of the Parmelia-Leederville aquifer. It is recommended that DPIRD read this licence to gather the additional information they indicate is required.

DPIRD have made certain assumptions in respect of clearing of native vegetation in cropping areas nominated for compost utilisation. The areas identified for manure utilisation on dryland cropping areas have been farmed for dryland cereal cropping in the past and do contain scattered timber that will be retained in future cropping programs. Further clearing in these dryland areas is not proposed. Spreading of manure on irrigation pivots is not proposed.

The centre pivot irrigation areas remarked upon by DPIRD are not an element of this development application and therefore not a matter for the Shire to regulate as part of this development consent. These matters have been, and will be, dealt with by DWER.

Environmental – Soils and feedlot hardstand

The full WAA document set deals at length with the premises soils, cropping programmes and the feedlot hardstand issues. Detail sought by DPIRD has been supplied to DWER in a series of reports including the feedlot Environmental Assessment.

If deemed appropriate, DWER will address these concerns in their determination and in the application of conditions in the DWER environmental licence.

Environmental – Feedlot feed-milling

The full WAA document sets out the nature and scale of animal feed milling and mixing proposed for the development including the postulation that all feed manufactured on site will be used on the premises. Control of possible environmental impacts related to feed milling are covered in the Environmental Assessment. The case for licencing under the provisions of the Act relating to animal feed manufacturing activity will be determined by DWER and dealt with in the environmental licence specifications and conditions.

Environmental – Cropping nutrient balance and wastewater containment

The full WAA document set supplied to DWER deals with the cropping programmes, nutrient balance, and wastewater containment.

If deemed appropriate it is understood that DWER will address these concerns in their determination and with licence conditions in the environmental licence.

Environmental – Nutrient and Irrigation Management Plan

In gaining irrigation licence, GWL205125(1), the proponent prepared and supplied a nutrient and irrigation management plan to DWER for the management of the irrigation pivots. As noted above the pivots and the water licence are not integral elements included in this development application and as such are not matter's for consideration by the Shire in determining the feedlot development application and conditions of consent.

Department of Biodiversity, Conservation and Attractions

We note the response from this agency and believe the comments to be fair and reasonable. We understand that these matters will be considered and dealt with in the WAA before DWER. Matters of importance raised by DBCA are more appropriately conditions of environmental licencing.

We believe it is unnecessary for the Shire to include conditions related to these matters in the DA consent.

Main Roads Western Australia

We note the response from Main Roads Western Australia and believe the comment to be fair and reasonable particularly in respect of the reference to the designated heavy vehicle route. We understand that the comments in this response will be incorporated into Shire development consent conditions.

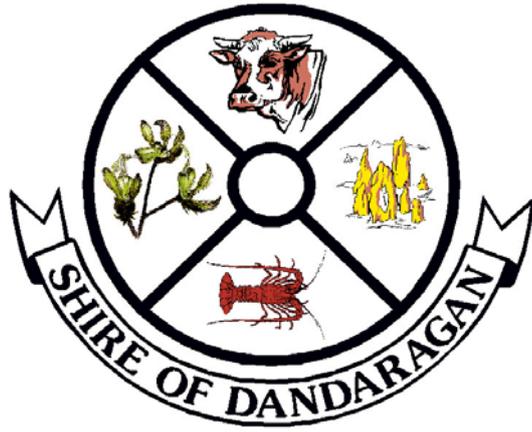
Please call if you have any queries.

Yours faithfully,
Sustainable Beef Systems Pty Ltd

A handwritten signature in blue ink, appearing to read 'Peter Paradice', is centered on a light pink rectangular background.

Peter Paradice
Director
0404 444650

CC Dean Ryan – Central Stockcare Pty Ltd



SHIRE
of
DANDARAGAN

AGENDA AND BUSINESS PAPERS

for the

ORDINARY COUNCIL MEETING

to be held

AT THE COUNCIL CHAMBERS, JURIE BAY

on

THURSDAY 25 FEBRUARY 2021

COMMENCING AT 4.00PM

(THIS DOCUMENT IS AVAILABLE IN LARGER PRINT ON REQUEST)



ORDINARY COUNCIL MEETING

THURSDAY 25 FEBRUARY 2021

Welcome to the Ordinary Council Meeting of the Shire of Dandaragan.

Please be advised that the Ordinary Meeting of Council will be held on the following dates, times and venues:

DAY	DATE	TIME	MEETING VENUE
Thurs	25 February 2021	4.00pm	Jurien Bay
Thurs	25 March 2021	4.00pm	Jurien Bay
Thurs	22 April 2021	4.00pm	Badgingarra
Thurs	27 May 2021	4.00pm	Jurien Bay
Thurs	24 June 2021	4.00pm	Jurien Bay

Brent Bailey
CHIEF EXECUTIVE OFFICER



DISCLAIMER

INFORMATION FOR THE PUBLIC ATTENDING A COUNCIL MEETING

Please note:

The recommendations contained in this agenda are Officer's Recommendations only and should not be acted upon until Council has considered the recommendations and resolved accordingly.

The resolutions of Council should be confirmed by perusing the Minutes of the Council Meeting at which these recommendations were considered.

Members of the public should also note that they act at their own risk if they enact any resolution prior to receiving official written notification of Council's Decision.

Brent Bailey
CHIEF EXECUTIVE OFFICER



COUNCIL MEETING INFORMATION NOTES

1. Your Council generally handles all business at Ordinary or Special Council Meetings.
2. From time to time Council may form a Committee, Working Party or Steering group to examine subjects and then report to Council.
3. Generally all meetings are open to the public; however, from time to time Council will be required to deal with personal, legal and other sensitive matters. On those occasions Council will generally close that part of the meeting to the public. Every endeavour will be made to do this as the last item of business of the meeting.
4. Public Question Time. It is a requirement of the Local Government Act 1995 to allow at least fifteen (15) minutes for public question time following the opening and announcements at the beginning of the meeting. Should there be a series of questions the period can be extended at the discretion of the Presiding Member.

Written notice of each question should be given to the Chief Executive Officer fifteen (15) minutes prior to the commencement of the meeting. A summary of each question and response is included in the Minutes.

When a question is not able to be answered at the Council Meeting a written answer will be provided after the necessary research has been carried out. Council staff will endeavour to provide the answers prior to the next meeting of Council.

Council has prepared an appropriate form and Public Question Time Guideline to assist.

5. **Councillors** may from time to time have a financial interest in a matter before Council. Councillors must declare an interest and the extent of the interest in the matter on the Agenda. However, the Councillor can request the meeting to declare the matter **trivial, insignificant** or **in common with a significant number of electors** or **ratepayers**. The Councillor must leave the meeting whilst the matter is discussed and cannot vote unless those present agree as above.

Members of staff, who have delegated authority from Council to act on certain matters, may from time to time have a financial interest in a matter on the Agenda. The member of staff must declare that interest and generally the Presiding Member of the meeting will advise the Officer if he/she is to leave the meeting.

6. Agendas including an Information Bulletin are delivered to Councillors within the requirements of the Local Government Act 1995, i.e. seventy-two (72) hours prior to the advertised commencement of the meeting. Whilst late items are generally not considered there is provision on the Agenda for items of an urgent nature to be considered.

Should an elector wish to have a matter placed on the Agenda the relevant information should be forwarded to the Chief Executive Officer in time to allow the matter to be fully researched by staff. An Agenda item including a recommendation will then be submitted to Council for consideration should it be determined appropriate by the Chief Executive Officer.

The Agenda closes the Monday week prior to the Council Meeting (i.e. ten (10) days prior to the meeting).

The Information Bulletin produced as part of the Agenda includes items of interest and information, which does not require a decision of Council.

7. Agendas for Ordinary Meetings are available in the Shire of Dandaragan Administration Centre and all four libraries as well as on the website www.dandaragan.wa.gov.au seventy-two (72) hours prior to the meeting and the public are invited to secure a copy.
8. Agenda items submitted to Council will include a recommendation for Council consideration. Electors should not interpret and/or act on the recommendations until after they have been considered by Council. Please note the Disclaimer in the Agenda (page 3).
9. Public Inspection of Unconfirmed Minutes (Reg 13)

A copy of the unconfirmed Minutes of Ordinary and Special Meetings will be available for public inspection in the Shire of Dandaragan Libraries and on the website www.dandaragan.wa.gov.au within ten (10) working days after the Meeting.

NOTE:

10.3 Unopposed Business

- (1) Upon a motion being moved and seconded, the person presiding may ask the meeting if any member opposes it.
- (2) If no member signifies opposition to the motion the person presiding may declare the motion in sub clause (1) carried without debate and without taking a vote on it.
- (3) A motion carried under sub clause (2) is to be recorded in the minutes as a unanimous decision of the Council or committee.
- (4) If a member signifies opposition to a motion the motion is to be dealt with according to this Part.

This clause does not apply to any motion or decision to revoke or change a decision which has been made at a Council or committee meeting.

SHIRE OF DANDARAGAN QUESTIONS FROM THE PUBLIC

The Shire of Dandaragan welcomes community participation during public question time as per the Shire of Dandaragan Standing Orders Local Law.

A member of the public who raises a question during question time is requested to:

- (a) provide a copy of his or her questions at least 15 minutes prior to the commencement of the meeting;
- (b) first state his or her name and address;
- (c) direct the question to the President or the Presiding Member;
- (d) ask the question briefly and concisely;
- (e) limit any preamble to matters directly relevant to the question;
- (f) ensure that the question is not accompanied by any expression of opinion, statement of fact or other comment, except where necessary to explain the question;
- (g) each **member of the public** with a question is **entitled to ask up to 3 questions** before other members of the public will be invited to ask their questions;
- (h) when a member of the public gives written notice of a question, the President or Presiding Member may determine that the question is to be responded to as normal business correspondence.

The following is a summary of procedure and a guide to completion of the required form.

1. This is a "question" time only. Orations, explanations or statements of belief will not be accepted or allowed.
2. Questions must relate to a matter affecting the Shire of Dandaragan.
3. Questions must be appropriate and made in good faith. Those containing defamatory remarks, offensive language or question the competency or personal affairs of council members or employees may be ruled inappropriate by the Presiding Member and therefore not considered.
4. Frame your question so that it is both precise and yet fully understood. Long questions covering a multitude of subjects are easily misunderstood and can result in poor replies being given.
5. Write your question down on the attached form, it helps you to express the question clearly and provides staff with an accurate record of exactly what you want to know.
6. When the President or presiding member calls for any questions from the public, stand up and wait until you are acknowledged and invited to speak. Please start by giving your name and address first, then ask the question.
7. Questions to be put to the President or presiding member and answered by the Council. No questions can be put to individual Councillors.
8. The question time will be very early in the meeting. **There is only 15 minutes available for Question Time.** Questions not asked may still be submitted to the meeting and will be responded to by mail.
9. When you have put your question, resume your seat and await the reply. If possible, the President or presiding member will answer directly or invite a staff member with special knowledge to answer in his place. However, it is more likely that the question will have to be researched, in which case the President or presiding member will advise that the question will be received and that an answer will be forwarded in writing. Please note under NO circumstances, will the question be debated or discussed by Council at that meeting.
10. To maximise public participation only three questions per person will initially be considered with a time limit of 2 minutes per person. If there is time after all interested persons have put their questions the President or presiding member will allow further questions, again in limits of two per person.
11. To fill out the form, just enter your name and address in the appropriate areas together with details of any group you are representing, then write out your question.
12. Please ensure your form is submitted to the minute's secretary.

If you have difficulty in or are incapable of writing the question, Shire staff are available on request to assist in this task.

We hope this note assists you in the asking of your question and thank you for your interest and participation in the affairs of our Shire.

SHIRE OF DANDARAGAN

QUESTIONS FROM THE PUBLIC

Any member of the public wishing to participate in Public Question Time during Council or Committee meetings is welcome to do so, however, Council requires your name, address and written questions to be provided to the meeting secretary.

Name: _____ Signature: _____

Address: _____

Contact No: _____ Meeting Date: _____

Council Agenda

Item No: _____

Name of Organisation Representing: _____
(if applicable)

QUESTION:

Each member of the public is entitled to ask up to 3 questions before other members of the public will be invited to ask their question. 15 Minutes is allotted to Public Question Time at Council Meetings.

Please see notes on Public Question Time overleaf...

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1 DECLARATION OF OPENING / ANNOUNCEMENT OF VISITORS**1.1 DECLARATION OF OPENING**

"I would like to acknowledge the traditional owners of the land we are meeting on today, the Yued people of the great Nyungar Nation and we pay our respects to Elders both past, present and emerging."

1.2 DISCLAIMER READING

"No responsibility whatsoever is implied or accepted by the Shire of Dandaragan for any act, omission, statement or intimation occurring during this meeting.

It is strongly advised that persons do not act on what is heard, and should only rely on written confirmation of Council's decision, which will be provided within fourteen days."

2 RECORD OF ATTENDANCE / APOLOGIES / APPROVED LEAVE OF ABSENCE**Members**

Councillor L Holmes (President)
 Councillor J Clarke
 Councillor A Eyre
 Councillor W Gibson
 Councillor R Rybarczyk
 Councillor R Shanhun

Staff

Mr B Bailey (Chief Executive Officer)
 Mr S Clayton (Executive Manager Corporate & Community Services)
 Mr D Chidlow (Executive Manager Development Services)
 Mr B Pepper (Executive Manager Infrastructure)
 Ms R Headland (Council Secretary & Personal Assistant)
 Mr R Mackay (Planning Officer)
 Ms M Perkins (Manager Community & Customer Service)
 Mr T O'Gorman (Manager Economic Development)

Apologies

Councillor P Scharf

Approved Leave of Absence

Councillor D Slyns

3 RESPONSE TO PREVIOUS PUBLIC QUESTIONS TAKEN ON NOTICE**4 PUBLIC QUESTION TIME****5 APPLICATIONS FOR LEAVE OF ABSENCE****6 CONFIRMATION OF MINUTES****6.1 MINUTES OF THE ORDINARY MEETING HELD 28 JANUARY 2021****7 NOTICES AND ANNOUNCEMENTS BY PRESIDING MEMBER WITHOUT DISCUSSION****8 PETITIONS / DEPUTATIONS / PRESENTATIONS / SUBMISSIONS**

Cervantes Historical Society – Business Plan Presentation

9 REPORTS OF COMMITTEES AND OFFICERS

9.1 CORPORATE & COMMUNITY SERVICES

9.1.1 ACCOUNTS FOR PAYMENT – JANUARY 2021

Location:	Shire of Dandaragan
Applicant:	N/A
Folder Path:	Business Classification Scheme / Financial Management / Creditors / Expenditure
Disclosure of Interest:	None
Date:	12 February 2021
Author:	Scott Clayton, Executive Manager Corporate & Community Services
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

To accept the cheque, EFT, BPAY and direct debit listing for the month of January 2021.

BACKGROUND

As part of the Local Government Act 1995, Financial Management Regulations 1996, a list of expenditure payments is required to be presented to Council.

COMMENT

The cheque, electronic funds transfer (EFT), BPAY and direct debit payments for January 2021 totalled \$1,353,138.51 for the Municipal Fund.

Should Councillors wish to raise any issues relating to the January 2021 Accounts for payment, please do not hesitate to contact the Executive Manager Corporate and Community Services prior to the Council Meeting, in order that research can be undertaken and details provided either at the time of the query or at the meeting.

CONSULTATION

- Chief Executive Officer

STATUTORY ENVIRONMENT

- Regulation 13 of the Local Government Financial Management Regulations 1997.

POLICY IMPLICATIONS

There are no policy implications relevant to this item.

FINANCIAL IMPLICATIONS

There are no adverse trends to report at this time.

STRATEGIC IMPLICATIONS

There are no strategic implications relevant to this item.

ATTACHMENTS

Circulated with the agenda are the following items relevant to this report:

- Cheque, EFT and direct debit listings for January 2021 (Doc Id: 170735)

(Marked 9.1.1)

VOTING REQUIREMENT

Simple majority

OFFICER RECOMMENDATION

That the Cheque and EFT listing for the period ending 31 January 2021 totalling \$1,353,138.51 be adopted.

9.1.2 FINANCIAL STATEMENTS - MONTHLY REPORTING FOR THE PERIOD ENDING 31 JANUARY 2021

Location:	Shire of Dandaragan
Applicant:	N/A
Folder	Business Classification Scheme / Financial Management / Financial Reporting / Periodic Reports
Disclosure of Interest:	None
Date:	15 February 2021
Author:	Scott Clayton, Executive Manager Corporate and Community Services
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

To table and adopt the monthly financial statements for the period ending 31 January 2021.

BACKGROUND

As part of the Local Government Act 1995 and Financial Management Regulations (1996), monthly financial statements are required to be presented to Council. Circulated are the monthly financial statements for the period ending 31 January 2021.

COMMENT

Regulation 34 of the Financial Management Regulations (1996) requires the following information to be provided to Council:

1. Net Current Assets

Council's Net Current Assets [i.e. surplus / (deficit)] position as at the 31 January 2021 was \$3,401,580. The composition of this equates to Current Assets minus Current Liabilities less Cash Assets that have restrictions on their use placed on them, in this case Reserves and Restricted Assets. The current position indicates that Council can easily meet its short-term liquidity or solvency.

The Net Current Asset position is reflected on page 12 and reconciled with the Statement of Financial Activity on page 3 of the financial statements.

The amount raised from rates, shown on the Statement of Financial Activity (page 3), reconciles with note 6 (page 13) of the financial statements and provides information to Council on the budget vs actual rates raised.

2. Material Variances

During budget adoption a 10 percent and \$10,000 threshold for these variances to be reported was set.

Note 12 of the attached report details any significant variances. Should Councillors wish to raise any issues relating to the 30 November 2020 financial statements, please do not hesitate to

contact the Executive Manager Corporate and Community Services prior to the Council Meeting in order that research can be undertaken and details provided either at the time of the query or at the meeting.

CONSULTATION

- Chief Executive Officer

STATUTORY ENVIRONMENT

- Regulation 34 of the Local Government Financial Management Regulations (1996)

POLICY IMPLICATIONS

There are no policy implications relevant to this item.

FINANCIAL IMPLICATIONS

There are no adverse trends to report at this time.

STRATEGIC IMPLICATIONS

There are no strategic implications relevant to this item.

ATTACHMENTS

Circulated with the agenda is the following item relevant to this report:

- Financial statements for the period ending 31 January 2021 (Doc Id: 170890)

(Marked 9.1.2)

VOTING REQUIREMENT

Simple majority

OFFICER RECOMMENDATION

That the monthly financial statements for the period 31 January 2021 be adopted.

9.1.3 FUNDING REQUEST - CONSTRUCTION OF THE TURQUOISE WAY TRAIL HILL RIVER BRIDGE

Location:	Jurien Bay
Applicant:	Jurien Bay Chamber of Commerce
Folder Path:	Business Classification Scheme / Roads / Maintenance / Bridges
Disclosure of Interest:	Nil
Date:	15 February 2021
Author:	Tony O'Gorman, Economic Development Manager
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

Council is being asked to consider a funding request from the Jurien Bay Chamber of Commerce to facilitate the construction of the bridge over the Hill River on the Turquoise Way Trail.

BACKGROUND

The Turquoise Way Trail to Hill River was completed in 2016 following a funding arrangement between the State Government and the Jurien Bay Chamber of Commerce (Chamber).

In 2019 the Chamber applied to the Wheatbelt Development Commission, Regional Economic Development Fund (REDS) round for an amount of \$150,000 to construct a bridge over the Hill River based on a business case and estimate of construction costs. They were successful in gaining funding towards the project however there was a shortfall in the grant received after \$100,000 was allocated towards the project.

As part of the funding mix \$100,000 was acquired through the Jurien Bay Community Fund (a community fund established through the Beachridge development process) and Ardross Developments / Mr. H. Hoffman provided an additional commitment of \$100,000. The Chamber is contributing \$6,963 which is made up of surplus funds from the first stage of the Turquoise Way Trail project. The Chamber advise that they have also funded pre-construction works and engineering totalling \$22,810.

The Chamber called for tenders for the project and received three submissions from local businesses. The conforming tender with the best price including a contingency provision leaves the overall project \$44,037 over budget.

The Chamber has requested that Council consider funding 50% of the current shortfall in funding (\$7,018) and allocate a further provision of up to \$15,000 to cover a 50% share of the contingency amount. The Chamber has committed to funding the remaining 50% of project variations. The contribution towards the contingency would only be drawn down if required through approved variations if unforeseen expenditure arises during the construction process.

The final component of the Chamber's request is to provide a cash advance interest free for a period up to twelve months to assist their cash flow associated with the remittance and recoup of GST. As the Chamber only submits an annual BAS return the Chamber's executive are concerned about their ability to remain a going concern while concurrently managing a significant construction project. It is expected that this cash advance would be in place for up to 12 months.

All funds and contributions would be subject to an independent financial audit which is a funding acquittal requirement under the REDS grant.

COMMENT

Council has demonstrated a significant level of support for this project to date in a number of ways. The Turquoise Way Trail to Cervantes project is identified as a marquee project within its Corporate Business Plan. Council have already agreed to fund an amount of \$150,000 to extend the Turquoise Way path to the bridge location. The funds for this have been acquired through the Federal Government's Drought Communities Program and form part of a larger \$1m grant to the Shire. The Shire has also been advocating funding contributions via various Government departments and Ministers for a number of years.

Given the existing level of Council support for the project, if Council choose to approve the Chamber's request, the funds could be drawn from the Infrastructure Construction Reserve.

If the proposed bridge is not constructed within the proposed timeline the \$100,000 grant from the REDS fund may be forfeited which will impact the timely progress of any future stages of the Turquoise Way Trail.

CONSULTATION

Jurien Bay Chamber of Commerce

STATUTORY ENVIRONMENT

Local Government Act 1995

6.8 Expenditure from municipal fund not included in annual budget

- (1) *A local government is not to incur expenditure from its municipal fund for an additional purpose except where the expenditure —*
- (a) *is incurred in a financial year before the adoption of the annual budget by the local government; or*
 - (b) *is authorised in advance by resolution*;* or
 - (c) *is authorised in advance by the mayor or president in an emergency.*

**Absolute majority required.*

POLICY IMPLICATIONS

Nil

FINANCIAL IMPLICATIONS

There will be a nil impact on the overall budgeted surplus/deficit as it is proposed that the contribution/s will be funded via a transfer from the Infrastructure Construction Reserve. The current balance of this reserve is \$62,523.

Funds associated with repayment of the short term loan would be budgeted for repayment in the 2021/2022 financial year.

STRATEGIC IMPLICATIONS

Strategic Community Plan - Envision 2029

01 Infrastructure	The Shire will sustain a dynamic infrastructure network responsive to usage demand that attracts and retains residents and businesses.
Priority Outcomes	Our Roles
Our communities contain vibrant, activated public open space and buildings with high levels of utilisation and functionality	To manage and facilitate community assets that are flexible, vibrant, adaptable and enjoyable places to occupy employing the principals of place making and design thinking.

ATTACHMENTS

Circulated with the agenda is the following item relevant to this report.

- Letter from the Jurien Bay Chamber of Commerce (Doc Id:170856) - Confidential
 - Chamber Hill River Bridge Construction Budget (Doc Id: 171067) - Confidential
- (Marked 9.1.3)**

VOTING REQUIREMENT

Absolute Majority

OFFICER RECOMMENDATION

That Council:

- 1. Approve the funding request from the Jurien Bay Chamber of Commerce in accordance with the following provisions:**
 - a) \$7,018 as an upfront direct contribution to the Hill River Bridge Construction Project;**
 - b) 50% of any contract variations up to \$15,000, subject to review and approval of the CEO; and**
 - c) \$35,100 as a no interest cash advance repayable within twelve months for the purpose of meeting GST liabilities associated with the project;**
- 2. Authorise a transfer of \$57,118 from the Infrastructure Construction Reserve.**

9.2 INFRASTRUCTURE SERVICES

9.3 DEVELOPMENT SERVICES

9.3.1 PROPOSED COALARA CATTLE FEEDLOT

Location:	2530 Coalara Road, Boothendarra
Applicant & landowner:	Central Stockcare
File Ref:	Development Services Apps/ Development Applications/ 2020 / 79
Disclosure of Interest:	Nil
Date:	5 February 2021
Author:	Rory Mackay, Planning Officer
Senior Officer:	David Chidlow, Executive Manager of Development Services

PROPOSAL

For Council to consider a development application for an intensive cattle feedlot upon 'Sendem Downs' farming property (Lot 10331 on Deposited Plan 206634) within the locality of Boothendarra. The application proposes the development of an intensive cattle feeding facility with the capacity to accommodate up to 8,000 head of cattle over a five-year staged development.

BACKGROUND

Central Stockcare (the proponent) is proposing a \$5 million cattle management system which in their own words will be: *designed to take the cropland energy and protein harvested in November and December each year and meter that nutrient out over the other 10 months of the year to cattle. The proposed feedlot system will deliver thriving cattle at optimal age for slaughter that produce repeatable, high eating quality meat all year around.*

The proponent has operated a similar feedlot on the farming property of 'Springfield' in the Shire of Gingin for more than a decade. This site abuts the Brand Highway and therefore has had no impact on local Gingin roads. However, this site has now been sold to mining interests with the feedlot arrangement allowed to continue via a short-term lease arrangement. Hence the proponent is seeking approval for this new feedlot to transition from the Springfield property.

The development is proposed to be constructed in the following three stages depending on market forces:

1. 4,000 head cattle 24 months from approvals
2. 6,000 head cattle 36 months from approvals
3. 8,000 head cattle 60 months from approvals

The maximum stocking density resulting from these stages will be 10.8m² per cattle. The majority of feed and cattle infrastructure will

be established during the first stage of development. The subsequent stages will see extensions added relative to the additional number of cattle to be contained on site. The location of these facilities is shown on the site plan that is included in the appendix of the attached environmental assessment report.

Given the development is denoted as a prescribed premise under the *Environmental Protection Act 1986*, a works approval application has concurrently been submitted to the Department of Water and Environmental Regulation (DWER) for consideration. A condensed version of the environmental report was submitted with the development application, however the full report as submitted to DWER is attached for Council's reference.

The subject property has historically been used for extensive livestock grazing and grain production and as result, is largely cleared with no significant remnant vegetation. The Site is also generally flat topography, ranging from 300m AHD to 270m AHD.

The site is dissected by the unconstructed road reserve of Boothendarra Road. The feedlot infrastructure will be sited on the north-eastern section of approximately 1550Ha, while the remaining area and the south section of 1430Ha will remain broadacre farming. The proponent also owns 2615 Coalara Road, Boothendarra situated west of the development property. The feedlot property is surrounded by the Watheroo National Park to the north, east and majority of south. The hybrid map image shown below outlines the location of the proposal (red outline) from Brand Highway.



The property is zoned 'Rural' under the Shire's Local Planning Scheme No.7 (the Scheme). The Scheme objective for the Rural zone is:

To provide for a range of rural activities such as broadacre and diversified farming so as to retain the rural character and amenity of the locality, in such a way as to prevent land degradation and further loss of biodiversity.

A cattle feedlot aligns with the Scheme land use definition of '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.

This land use is listed as discretionary ('D') under the Scheme for the Rural zone. Meaning the development cannot commence without Council showing discretion in their land use development decision making.

COMMENT

Examination of the land capability to withstand potential environmental impacts of the development do not form part of this assessment as this will be undertaken by DWER in their assessment of the environmental works application for the proposed feedlot.

The feedlot is sited to meet the 1km Environmental Protection Authority rural buffer distance from sensitive receptors / neighbouring dwellings. The nearest neighbouring dwelling at 2297 Coalara Road, Boothendarra is located 6km away from the feedlot footprint. Therefore, the development does not present a significant risk to the amenity (noise & odour) of the locality.

The proponent has obtained a ground water licence from the Department of Water and Environmental Regulation to access up to 2250.95 megalitres of water per year for the purposes of: dust suppression; intensive stock watering; and irrigation of pasture.

The development will provide employment for up to 13 full time personnel when fully developed. This includes staff undertaking administrative, livestock handling, feed storage, preparation and delivery, and waste management activities. The existing dwelling on the subject land will be used for accommodating a small number of management staff. However, all other staff shall reside off-site, with no additional staff accommodation to be provided on-site.

Portions of the development site are located within designated Bushfire Prone Areas as determined by the Department of Fire and Emergency Services. However, all of the habitable areas in which people would be working on a regular basis (i.e. the feeding pens, feed mill, cattle handling facilities, weighbridge and office) are located outside the identified Bushfire Prone Areas.

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Accordingly, it is not considered necessary to address the requirements under *State Planning Policy 3.7 – Planning in Bushfire Prone Areas*, on the basis that:

- Part 10A of the Deemed Provisions of the Scheme do not apply, as no habitable buildings are proposed within Bushfire Prone Areas; and
- Planning Bulletin 111/2016 clearly contemplates exemptions for infrastructure (including roads and dams) and rural activities within Bushfire Prone Areas, as proposed.

Therefore, an exemption is practical and entirely appropriate in this instance, as the no structures are proposed within the identified Bushfire Prone Areas.

The application is accompanied by a Traffic Impact Assessment (TIA) prepared by Auswide, attachment. This TIA concluded that the development would have a low impact of increased vehicle traffic in the locality. However, the TIA did not consider the capacity or capability of the local road network to handle the amount of traffic generated by the development, especially heavy haulage on the unsealed Coalara Road. As such, Shire staff sought a third-party traffic assessment (including a site inspection) by Porter Engineers (Porter).

The resulting TIA from Porter (also included as an attachment) made the following recommendations to the Shire:

	Summary of Conclusions for Shire Consideration
1	Install Boothendarra Road street name signs on Coalara Road at two intersections
2	Upgrade Boothendarra Road unsealed road pavement formation suitable for the proposed weekly number of B-Double heavy vehicles and other development traffic
3	Do not permit heavy vehicles to use unsealed road pavements when the formation is wet
4	Permit the proposed heavy vehicles to use only Route 1 (i.e. via Watheroo Road) so as to limit the extent of road network impacted and consequent road maintenance costs
5	The proposed development cover the annual cost of additional road maintenance incurred by the Shire as a consequence of the development traffic
6	The proposed development cover costs incurred by the Shire where it reinstates road pavement following damage caused by development traffic that has rendered the road hazardous or impassable to traffic

Staff responses to each recommendation for Council considerations are:

1 & 2 – Make Boothendarra Road Reserve east from Coalara road private gated access for the proponent via an annual gate permit. Road standard and maintenance for this portion of Boothendarra Road would then solely be that of the proponent. No other property owner uses this unconstructed road reserve. The gate access leg is shown in purple highlight below.



3 – This is standard practice for unsealed Shire road in the wetter months of the year. Truck damage to gravel roads in the wet can result in sufficient damage as to make it impassable to cars.

4 – Use of 'Route 1' only for heavy haulage on the roads of Watheroo and Coalara Roads is recommended as a condition of approval. The following table taken from the Porter TIA summarises the difference between Route 1 and 2 and why Route 1 should only be used by heavy haulage to avoid an additional 24.5km of unsealed gravel road maintenance.

Route	Total length	Unsealed Roads Length (3.3km common)	Sealed Roads length	Extra Unsealed Roads Length	Extra Sealed Roads Length	Total Extra Roads Length
Route 1	35 km	10.5 km	24.5 km	-	-	
Route 2	70 km	27.8 km	42.2 km	24.5 km	42.2 km	66.7 km

5 – A recommended condition of approval calls for a road user agreement to be established between the proponent and the Shire. This is to enable the proponent to meet the road maintenance costs relative to the development's heavy haulage. As stated within the Porter TIA the Shire's road crew usually grade unsealed roads three times a year (a winter, summer and touch up grade). It is expected through the development's heavy vehicle traffic numbers that grading of Coalara Road will need to be upped to 7-8 gradings per year at full 8,000 head capacity, especially as this road is school bus route. The Porter TIA concluded that the feedlot development should cover the cost by the Shire for these additional maintenance gradings rather than the general Shire ratepayer. It is noted by the Porter TIA that the development traffic

is 134 units below the Main Roads threshold for the requirement for Coalara Road to be sealed by the developer.

6 - It is recommended a road damages condition be imposed on the proponent to ensure any non-compliance with the closure of Coalara Road in the wetter months to heavy haulage by the proponent does not result in an additional cost to the Shire to reinstate the road formation where it becomes a hazard or impassable to light vehicle traffic. There may be special occurrences where trucks will have to use Coalara road in the wet to unloaded cattle for animal welfare issues, such circumstances will be agreed by the proponent and Shire via the road user agreement to be developed.

The proponent provided a response to each of the above mooted preliminary conditions, of which is attached to this item. The proponent supports each preliminary condition except for the condition regarding recommendation 5 and establishing a Coalara Road user agreement. The proponent has raised concern that an annual ongoing road maintenance fee will generally erode the viability of low margin business. As stated, in poor trading environments feedlots at times close-down and cease business activity. In such a time of financial hardship it would be unreasonable to expect the operator to pay the Shire for road maintenance. As such, the proponent has requested that a variable but capped road maintenance levy linked to the annual truck activity of the feedlot, also linked to an appropriate index be used, if at all. The Shire currently use a similar arrangement to levy road maintenance contributions from extractive industries. This item calls for the road user agreement to be agreed by both parties prior to the use of the feedlot. If this approach is supported by Council, negotiations of the road user agreement would take place between the proponent and Shire staff at a later date.

In summary, the proposed cattle feedlot represents an intensive form of agricultural land use that will contribute to a more diverse land use profile in the Shire's Rural zone, and conversely, retains rural land for primary agriculture production, consistent with the Shire's strategic land use planning direction. Additionally, the development has no potential for conflict with the established amenity of the locality. Therefore, the development application is recommended for approval subject conditions, including conditions regarding the use of Coalara Road by the developer.

CONSULTATION

The subject development application was advertised to the following parties

- Department of Primary Industries & Regional Development;
- Department of Biodiversity, Conservation & Attractions;
- Main Roads WA; and
- Surrounding land owners.

The submissions from the State authorities have been attached to this item for Council's reference. The proponent has provided a response to each of these submissions as shown in the relevant attachment.

Only one neighbour submission was received. This submission objected to the proposal until: odour; flies and stable flies; and traffic on local (gravel) roads were addressed. These factors have been addressed in the comment section above and are to be reinforced by recommended conditions of development approval and/or further supported by the environmental assessment that rests with DWER.

STATUTORY ENVIRONMENT

- Local Planning Scheme No. 7
- Environmental Protection Act 1986

POLICY IMPLICATIONS

- State Planning Policy 2.5: Rural Planning
- State Planning Policy 3.7: Planning in Bushfire Prone Areas
- State Planning Policy 3.6: Infrastructure Contributions

Developer Agreements

Contributions may also be implemented in limited circumstances through Developer Agreements or by a voluntary agreement between a landowner or developer and the relevant local government, pursuant to a request from the landowner or developer. Limited circumstances include large-scale, single ownership projects with a long development timeframe, or in regional areas where a formal Development Contribution Plan is not considered by local government and contributing owners to be necessary to achieve desired infrastructure delivery outcomes.

...infrastructure contributions prepared under this arrangement should be consistent with the principles outlined in this policy and any decision to deviate from these principles, including the provision of facilities of a higher quality or specification than standard, should be a voluntary decision by all parties to the agreement.

Principles underlying infrastructure contributions

Contributions for all infrastructure must be levied in accordance with the following principles:

- a) Need and the nexus: The need for the infrastructure must be clearly demonstrated (need) and the connection between the development and the demand created should be clearly established (nexus).*
- b) Transparency: Both the method for calculating the infrastructure contribution and the manner in which it is applied should be clear, transparent, and simple to understand and administer.*

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- c) *Equity: Infrastructure contributions should be levied equitably from all identified stakeholders within a contribution area.*
- d) *Certainty: The scope, timing, and priority for delivering infrastructure items, and the cost of infrastructure contributions and methods of accounting for escalation, should be clearly identified and agreed.*
- e) *Consistency: The system for infrastructure contributions for apportioning, collecting and spending contributions should be consistent, efficient and transparent.*
- f) *Accountable: That there is accountability in the manner in which infrastructure contributions are determined and expended.*

FINANCIAL IMPLICATIONS

The proponent has paid a total application fee of \$12,311 for the development estimated to cost \$5million. The Porter TIA commissioned by Shire Staff cost \$6,800 (ex GST). Council may choose to use the application monies to offset cost or it could choose to back charge the TIA cost as additional to the proponent.

This ability is provided in Regulation 49 of the *Planning and Development Regulations 2009* which states:

Additional costs and expenses payable by applicants

(b) costs and expenses of any specific assessment, such as an environmental assessment, required in relation to the application.

STRATEGIC IMPLICATIONS

Local Planning Strategy 2020:

Rural Land – Facilitate more intensive and diverse use of rural land for higher value agricultural products which are compatible with land capability attributes and surrounding farming practices, subject to availability of adequate water supply.

Strategic Community Plan – Envision 2029

02 – Propensity	The Shire will experience broad economic and population growth with decreasing economic barriers, diversified agriculture and fisheries output and vibrant visitor economy.
Priority Outcomes	Our Roles
Our Shire has a contemporary land use planning system that responds to, and creates, economic opportunities.	Ensuring that our planning framework is modern and meets the needs of industry, small business and emerging opportunities.
Our region is celebrated as a major contributor to the State's food production with a diverse range of agricultural, fishery and horticultural enterprises.	Advocate for and facilitate the reduction in economic barriers such as access to water, electricity, logistics infrastructure and telecommunications.

ATTACHMENTS.

Circulated with the agenda are the following items relevant to this report:

- Public Environmental Report (Doc Id: 170727)

- Auswide TIA (Doc Id: 170728)
- Porter TIA (Doc Id: 170720)
- DPIRD Submission (Doc Id: 170722)
- DBCA Submission (Doc Id: 170723)
- Main Roads WA Submission (Doc Id: 170724)
- Proponent response letter (Doc Id: 170719)

(Marked 9.3.1)

VOTING REQUIREMENT

Simple majority

OFFICER RECOMMENDATION

That Council:

- A. resolve to back charge to the proponent the cost of Traffic Impact Assessment prepared by Porter Engineers in accordance with Regulation 49 of the *Planning and Development Regulations 2009*; and**
- B. grant development approval for animal husbandry intensive (cattle feedlot) upon Lot 10331 on Deposited Plan 206634 in the locality of Boothendarra subject to the following conditions and advice:**

Conditions:

- 1. The land use and development shall be in accordance with the approved plans and specifications unless otherwise conditioned by this approval.**
- 2. The endorsed plans shall not be modified or altered without the prior written approval of the Shire of Dandaragan.**
- 3. The use when established shall at all times comply with the definition of 'animal husbandry - intensive (cattle feedlot)' contained within the *Shire of Dandaragan Local Planning Scheme No. 7*.**
- 4. This approval is for Stage 1 to 3 of the development with the maximum head of cattle not to exceed 8,000 at any one time.**
- 5. Access and egress to the subject site from Coalara Road shall be from the unconstructed Boothendarra Road Reserve which adjoins the boundary of the subject property via an annual Shire Gate Permit arrangement.**
- 6. Prior to commencement of the use, access and egress to the subject site and any associated road works shall be located and constructed to the satisfaction of the Shire of Dandaragan and include all necessary drainage and signage. Costs applicable to the construction of the access point onto the site and related issues shall be borne by the proponent.**
- 7. At the commencement of the approved use, a report detailing all activities and tonnages of livestock and materials transported to and from the facility is to be**

- submitted to the Shire of Dandaragan each month until cessation of the use.
8. Prior to the commencement of the use, the proponent is to enter in an agreement with the Shire of Dandaragan regarding the utilisation of Coalara Road by the development's heavy haulage to establish contributions by the proponent necessary to achieve the desired infrastructure standard for Coalara Road for the life of the development.
 9. Should the development's heavy haulage use Coalara Road when the road is closed due to the road formation being wet and damages the road to a hazardous state or impassable to light vehicle traffic as determined by the Shire of Dandaragan, the proponent shall cover the costs incurred by the Shire of Dandaragan to reinstate the road pavement to the satisfaction of the Shire of Dandaragan.
 10. The development's heavy haulage shall only use the Shire of Dandaragan's local roads of Watheroo Road and Coalara Road to access and exit the development site to the satisfaction of the Shire of Dandaragan.
 11. The transportation of materials, goods and commodities to and from the development shall be conducted so that dust emissions have minimal impact on the locality.
 12. Prior to the completion of the use, the applicant shall supply to the satisfaction of the Shire of Dandaragan the following plans:
 - a. construction management plan;
 - b. nutrient and irrigation management plan (including wastewater effluent management);
 - c. solid waste management plan;
 - d. air quality management plan (including dust and odour management);
 - e. fire management plan; and
 - f. environmental monitoring and reporting plan;
 on the advice of the relevant state government agency.

Advice Notes:

- a) The applicant is to implement and maintain reporting mechanisms for complaints concerning the operation of the development. In the event of a substantiated complaint being received the applicant is required to demonstrate mitigation response(s) to the approval of the Shire of Dandaragan.
- b) Should the Applicant be aggrieved by the decision (in part or whole) there is a right pursuant to the Planning and Development Act 2005 to have the decision reviewed by the State Administrative Tribunal. Such an Application must be lodged within twenty-eight (28) days from the date of the decision.
- c) This approval is not an authority to ignore any constraint to

development on the land which may exist through contract or on title, such as an easement, memorial or restrictive covenant. It is the responsibility of the applicant and landowner and not the Shire of Dandaragan to investigate any such constraints before commencing development. This approval will not necessarily have regard to any such constraint to development, regardless of whether or not it has been drawn to the Shire of Dandaragan's attention.

- d) This is a development approval of the Shire of Dandaragan under its *Local Planning Scheme No.7*. It is not a building permit or an approval to commence or carry out development under any other law. It is the responsibility of the applicant/landowner to obtain any other necessary approvals, consents, permits and licenses required under any other law, and to commence and carry out development in accordance with all relevant laws.
- e) Failure to comply with any of the conditions of this development approval constitutes an offence under the provisions of the *Planning and Development Act 2005* and the *Shire of Dandaragan Local Planning Scheme No.7* and may result in legal action being initiated by the Shire of Dandaragan.
- f) It is advised that the cattle feedlot should at all times comply with the *Biosecurity & Agriculture (Stable Fly) Management Plan 2013* in order to minimise the effects of stable flies on the community.
- g) The design and operation of the cattle feedlot is to be generally in accordance with the *National Guidelines for Beef Cattle Feedlots* and *National Beef Cattle Feedlot Environmental Code of Practice*.

9.4 GOVERNANCE & ADMINISTRATION

9.4.1 CERVANTES INDUSTRIAL LOT LEASE

Location:	11 Gazeley Way Cervantes
Applicant:	Not Applicable
Folder Path:	Business Classification Scheme / Council Properties / Leasing Out /
Disclosure of Interest:	Nil
Date:	15 February 2021
Author:	Brent Bailey, Chief Executive Officer
Senior Officer:	Not Applicable

PROPOSAL

The purpose of this report is for Council to consider advertising for lease 11 Gazeley Way Cervantes.

BACKGROUND

11 Gazeley Way is an industrial zoned property in the South East area of Cervantes. The property is predominantly vacant with the exception of a telecommunications tower on a 109m² portion of the lot which is leased to Optus Mobile Pty Ltd (Optus).



In December 2020 an unsolicited offer to lease the property was received from a business owner within the Shire. This has triggered a review of the Shire's ongoing requirements for the property revealing that the property is surplus to the Shire's current operational needs which has also been identified in the Land Rationalisation Project review process. Currently the site is used by the Infrastructure Department as a lay down area for bulk materials. Storage of these materials would be relocated to the Waste Management Facility should the site be leased out.

It is proposed to assign a local real estate agent to advertise the property, collate and evaluate offers for a lease of the site once a market valuation has been ascertained. The offers would then be

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considered at a subsequent Council meeting and finalised by a Disposal of Property in accordance with Section 3.58(3) of the Local Government Act 1995.

COMMENT

The Optus lease on the property expires on 31 July 2026 and accordingly a disposal of this land is more appropriate via lease rather than outright sale given the relatively short timeframe until the land is unencumbered and may present additional opportunities or value to the Shire. Ideally the ongoing land use will contribute to the Shire's economic development and support new business or an expansion of existing business.

There are a number of options suitable for a disposal of land in this situation summarised as follows:

Disposal Type	Advantages	Disadvantages
Outright sale	Capital from sale realised on settlement. Greater security and long term opportunity for buyer. Limited industrial lots available presents strong marketability.	Complicated by existing leasehold over portion of the property and associated revenue forgone. No future lots currently available for Shire purposes if required in Cervantes.
Lease via Tender	Reduced timeframe for execution. Fixed lease to govern terms and land use. Lease can coincide with Optus Term or longer.	Would require Council to predetermine key conditions such as lease term which may limit offers.
Request for Proposals – Lease by Private Treaty	Fixed lease to govern terms and land use. Increased flexibility for negotiation on key outcomes including term of lease. Greater scrutiny and evaluation of offers. Increased public transparency over proposed land use. Lease can coincide with Optus Term or longer.	Longer timeframe for execution. More complicated for prospective lessees needing to address response criteria. Increased staff resources required.
Utilise local real estate agent – Lease by Private Treaty	Fixed lease to govern terms and land use. Increased flexibility for negotiation on key outcomes	Increased external costs in disposition.

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	<p>including term of lease.</p> <p>Increased public transparency over proposed land use.</p> <p>Simpler for lessees to discuss and submit offers through the agent.</p> <p>Lease can coincide with Optus Term or longer.</p>	
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Given the relative simplicity of the disposal and the current project workload on existing staff, the preferred option of disposal is to utilise a local real estate agent to facilitate and evaluate the offers process. This would include consideration of proposals for the length of term associated with the lease. Shire staff would work with the agent to develop a summarised report for Council consideration after a minimum advertising and response timeframe of 4 weeks.

In accordance with Section 3.58(3) of the Local Government Act 1995, the disposal of property using this method would then require public advertising and for Council to consider any submissions. At the conclusion of this process a finalised lease document can be executed.

CONSULTATION

Nil

STATUTORY ENVIRONMENT

Local Government Act 1995 S3.58 – Disposing of Property
 Local Government (Functions and General) Regulations 1996
 Section 30

3.58. Disposing of property

(1) *In this section —*

dispose *includes to sell, lease, or otherwise dispose of, whether absolutely or not;*

property *includes the whole or any part of the interest of a local government in property, but does not include money.*

(2) *Except as stated in this section, a local government can only dispose of property to —*

(a) *the highest bidder at public auction; or*

(b) *the person who at public tender called by the local government makes what is, in the opinion of the local government, the most acceptable tender, whether or not it is the highest tender.*

- (3) *A local government can dispose of property other than under subsection (2) if, before agreeing to dispose of the property —*
- (a) *it gives local public notice of the proposed disposition —*
 - (i) *describing the property concerned; and*
 - (ii) *giving details of the proposed disposition; and*
 - (iii) *inviting submissions to be made to the local government before a date to be specified in the notice, being a date not less than 2 weeks after the notice is first given;*

and
 - (b) *it considers any submissions made to it before the date specified in the notice and, if its decision is made by the council or a committee, the decision and the reasons for it are recorded in the minutes of the meeting at which the decision was made.*
- (4) *The details of a proposed disposition that are required by subsection (3)(a)(ii) include —*
- (a) *the names of all other parties concerned; and*
 - (b) *the consideration to be received by the local government for the disposition; and*
 - (c) *the market value of the disposition —*
 - (i) *as ascertained by a valuation carried out not more than 6 months before the proposed disposition; or*
 - (ii) *as declared by a resolution of the local government on the basis of a valuation carried out more than 6 months before the proposed disposition that the local government believes to be a true indication of the value at the time of the proposed disposition.*
- (5) *This section does not apply to —*
- (a) *a disposition of an interest in land under the Land Administration Act 1997 section 189 or 190; or*
 - (b) *a disposition of property in the course of carrying on a trading undertaking as defined in section 3.59; or*
 - (c) *anything that the local government provides to a particular person, for a fee or otherwise, in the performance of a function that it has under any written law; or*
 - (d) *any other disposition that is excluded by regulations from the application of this section.*

30. Dispositions of property excluded from Act s. 3.58

- (1) *A disposition that is described in this regulation as an exempt disposition is excluded from the application of section 3.58 of the Act.*
- (2) *A disposition of land is an exempt disposition if —*

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- (a) *the land is disposed of to an owner of adjoining land (in this paragraph called the **transferee**) and —*
- (i) *its market value is less than \$5 000; and*
 - (ii) *the local government does not consider that ownership of the land would be of significant benefit to anyone other than the transferee;*
- or*
- (b) **the land is disposed of to a body, whether incorporated or not —**
- (i) **the objects of which are of a charitable, benevolent, religious, cultural, educational, recreational, sporting or other like nature; and**
 - (ii) **the members of which are not entitled or permitted to receive any pecuniary profit from the body's transactions;**

POLICY IMPLICATIONS

There are no policy implications relevant to this item.

FINANCIAL IMPLICATIONS

There will be market valuation and real estate fees estimated at < \$4,000 associated with the proposed process.

STRATEGIC IMPLICATIONS

Strategic Community Plan – Envision 2029

02 – Prosperity	The Shire will experience broad economic and population growth with decreasing economic barriers, diversified agriculture and fisheries output and vibrant visitor economy
Priority Outcomes	Our Roles
Our Shire has a contemporary land use planning system that responds to, and creates, economic opportunities	Ensuring that our planning framework is modern and meets the needs of industry, small business and emerging opportunities. Identify and activate under-utilised economic and land assets to promote employment and economic activity.

ATTACHMENTS

Nil

VOTING REQUIREMENT

Simple Majority

OFFICER RECOMMENDATION

That Council:

- 1. Endorse the proposal to offer for lease in accordance with Section 3.58(3) of the Local Government Act 1995, 11 Gazeley Way Cervantes.**

- 2. Endorse a minimum 4 weeks public advertising and response timeframe for the lease opportunity.**
- 3. Authorise the Chief Executive Officer to appoint a local real estate agent to advertise the lease, collate and evaluate offers for the property.**

9.4.2 TENDER – PAVILION – JURIEN BAY FORESHORE RESERVE 28541

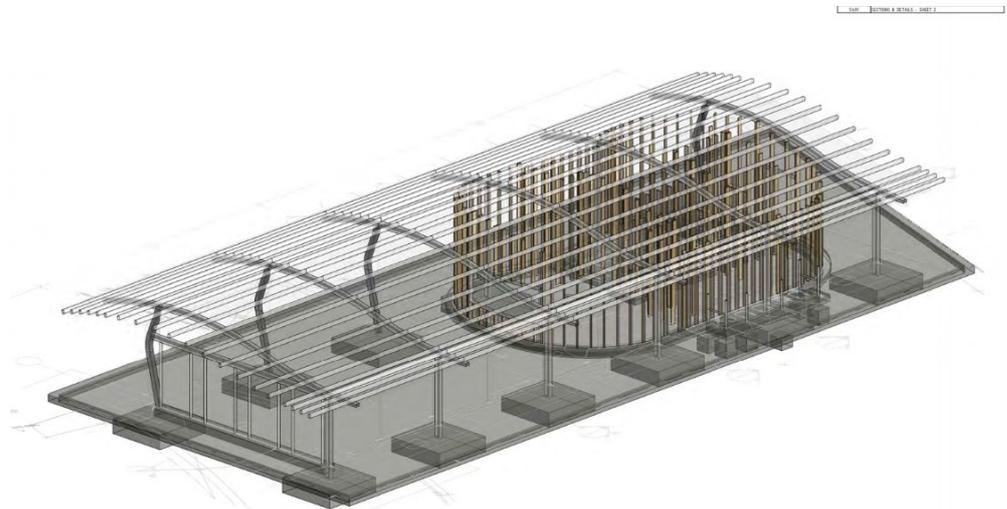
Location:	Reserve 28541 Jurien Bay Foreshore
Applicant:	N/A
Folder Path:	Tenders / 2021 / RFT 001-21
Disclosure of Interest:	None
Date:	5 February 2021
Author:	David Chidlow, Executive Manager Development Services
Senior Officer:	Brent Bailey, Chief Executive Officer

PROPOSAL

This item addresses the recent tender which was called for the construction of the Jurien Bay Foreshore Pavilion. It is recommended that Council reject all tenders and proceed with direct negotiations with businesses for the construction of the facility.

BACKGROUND

Council endorsed the design of a pavilion/café/ablutions facility on the Jurien Bay Foreshore to proceed to tender at the October 2020 Council meeting. The architect's design is shown below and was developed in consultation with the Foreshore Working Group with the allocated construction budget guiding the size and scale of the development.



Following the finalisation of the detailed design process in January 2021, which included electrical design components coordinated with other projects being completed on the foreshore, tenders were invited for the construction activities.

Tenders closed on the 16 February at 4:00pm with five electronic tenders received.

COMMENT

All tenders received were significantly above the budgeted amount of \$650,000 construction cost. The prices ranged from \$969,233 up to \$1,493,251 (excl GST). The following table sets out the prices received;

Price	
1	\$969,233.00
2	\$996,787.51
3	\$1,015,498.88
4	\$1,185,543.29
5	\$1,493,251.00

A detailed assessment of the submissions is provided as a confidential attachment to this item. In summary, the significant divergence between the tendered amounts and the proposed budget warrants the rejection of tenders to allow negotiations to commence on price and potentially scope of the project. There has also been a significant shift in pricing and demand within the Western Australian building industry which has anecdotally influenced the capacity and lead times of many local trades.

Following these negotiations it is proposed that a further item be brought back to Council to progress the project to construction.

CONSULTATION

The tender was advertised in State and regional Newspapers, social media and the Shire website, as well as directly to ten builders operating in this region.

STATUTORY ENVIRONMENT

Local Government Act 1995 s3.57 – Tenders for providing goods or services

3.57. Tenders for providing goods or services

- (1) *A local government is required to invite tenders before it enters into a contract of a prescribed kind under which another person is to supply goods or services.*
- (2) *Regulations may make provision about tenders.*

Local Government Regulations 1996 s11(1)

11. When tenders have to be publicly invited

- (1) *Tenders are to be publicly invited according to the requirements of this Division before a local government enters into a contract for another person to supply goods or services if the consideration under the contract is, or is expected to be, more, or worth more, than \$250 000 unless subregulation (2) states otherwise.*

Local Government Act 1995 s5.23(2)(e)(iii)

(2) *If a meeting is being held by a council or by a committee referred to in subsection (1)(b), the council or committee may close to members of the public the meeting, or part of the meeting, if the meeting or the part of the meeting deals with any of the following — (e) a matter that if disclosed, would reveal — (iii) information about the business, professional, commercial or financial affairs of a person,*

Local Government Regulations 1996 s18(5)

18. Rejecting and accepting tenders

(5) *The local government may decline to accept any tender.*

POLICY IMPLICATIONS

Policy 1.1 C-1PAT01 – Purchasing and Tender

\$250,000+ Public tender process to be undertaken unless excluded under Exemptions listed below. Prior to any documentation being issued a Request for Tender (RFT) number must be obtained from the Executive Manager of Corporate and Community Services, as applicable provided to maintain the Shire's Tender Register.

FINANCIAL IMPLICATIONS

The pre-tender construction estimate for this project as advised by the architect was \$650,000 which excludes additional design and procurement, project management and land costs. The total budgeted sum for this project is \$750,000.

Since the budget was set there has been change in the building industry and demand for labour and tradespersons. This is due to federal and state funding towards new home builders putting builders at or above capacity.

STRATEGIC IMPLICATIONS

Strategic Community Plan – Envision 2029

01 Infrastructure	The Shire will sustain a dynamic infrastructure network responsive to usage demand that attracts and retains residents and businesses.
Priority Outcomes	Our Roles
Our communities contain vibrant, activated public open space and buildings with high levels of utilisation and functionality.	To manage and facilitate community assets that are flexible, vibrant, adaptable and enjoyable places to occupy employing the principals of place making and design thinking.

ATTACHMENTS

Circulated with the agenda is the following item relevant to this report:

- Confidential 01/2021 Tender Evaluation (Doc Id: 171131)
(Marked 9.4.2)

VOTING REQUIREMENT

Simple Majority

OFFICER RECOMMENDATION

That Council:

- 1. rejects all tenders for Tender 01/2021 – Jurien Bay Foreshore Pavilion**
- 2. authorises the Chief Executive Officer to enter negotiations with suitably qualified and experienced builders and report back to Council.**

9.5 COUNCILLOR INFORMATION BULLETIN**9.5.1 SHIRE OF DANDARAGAN – JANUARY 2021 COUNCIL STATUS REPORT**

Document ID: 170908

Attached to the agenda is a copy of the Shire's status report from the Council Meeting held 28 January 2021. **(Marked 9.5.1)**

9.5.2 SHIRE OF DANDARAGAN – BUILDING STATISTICS – JANUARY 2021

Document ID: 170862

Attached to the agenda is a copy of the Shire of Dandaragan Building Statistics for January 2021. **(Marked 9.5.2)**

9.5.3 SHIRE OF DANDARAGAN – PLANNING STATISTICS – JANUARY 2021

Document ID: 170859

Attached to the agenda is a copy of the Shire of Dandaragan Planning Statistics for January 2021. **(Marked 9.5.3)**

9.5.4 SHIRE OF DANDARAGAN TOURISM / LIBRARY REPORT FOR JANUARY 2021

Document ID: 170785

Attached to the agenda is monthly report for Tourism / Library for January 2021 **(Marked 9.5.4)**

9.5.5 CERVANTES CWA APPRECIATION

Document ID: 171100

Attached to the agenda is correspondence from the Cervantes CWA in relation to lighting at the Cervantes Community Recreation Centre **(Marked 9.5.5)**

10 NEW BUSINESS OF AN URGENT NATURE – INTRODUCED BY RESOLUTION OF THE MEETING**11 CONFIDENTIAL ITEMS FOR WHICH MEETING IS CLOSED TO THE PUBLIC****12 ELECTED MEMBERS MOTIONS OF WHICH PREVIOUS NOTICE HAS BEEN GIVEN****13 CLOSURE OF MEETING**



ATTACHMENTS

FOR ORDINARY COUNCIL MEETING 25 FEBRUARY 2021

SHIRE OF DANDARAGAN

ACCOUNTS FOR PAYMENT

FOR THE PERIOD ENDING

31 JANUARY 2021

SUMMARY OF SCHEDULE OF ACCOUNTS JANUARY 21

<u>FUND</u>					<u>AMOUNT</u>
<u>MUNICIPAL FUND</u>					
CHEQUES			-		\$0.00
EFT'S	EFT	489	-	EFT 497	\$1,277,750.88
DIRECT DEBITS	GJBDEB	4312		GJBDEB 4337	\$50,178.66
BPAY	BPAY	080121	-	BPAY 290121A	\$25,208.97
TOTAL MUNICIPAL FUND					<u>\$1,353,138.51</u>
<u>TRUST FUND</u>					
CHEQUES			-		\$0.00
EFT'S	EFT		-	EFT	\$0.00
TRANSFER	Trust		-	Muni	\$0.00
					<u>\$0.00</u>

This schedule of accounts to be passed for payment, covering vouchers as detailed above, which was submitted to each member of Council has been checked and is fully supported by vouchers and invoices which are submitted herewith and which have been duly certified as to the receipt of goods and the rendition of services and as to prices, computations, and costings and the amounts shown the amounts show are due for payment.

Posting Date	Document Type	Document No.	Description	Amount
4/01/2021		GJBDEB-4314	BWA - Paper Trans Fee - Dec 20	\$21.60
4/01/2021		GJBDEB-4315	BWA - BPay Mtncce Fee - Dec 20	\$15.00
4/01/2021		GJBDEB-4316	BWA - Over the Counter Fee - Dec 20	\$38.00
4/01/2021		GJBDEB-4317	BWA - BPay Trans Fee - Dec 20	\$214.40
4/01/2021		GJBDEB-4318	BWA - Mtncce Fee ex 117-006592-7	\$20.00
4/01/2021		GJBDEB-4319	BWA - OBB Record Fee - Dec 20	\$14.20
4/01/2021		GJBDEB-4320	ANZ - Merchant Fee - Dec 20	\$61.77
4/01/2021		GJBDEB-4322	BWA - Merchant Fee Dec 20 - TCVC	\$64.28
7/01/2021		GJBDEB-4312	Salary Packaging	\$3,040.74
7/01/2021		GJBDEB-4313	SuperChoice - December 20	\$19,759.92
15/01/2021		GJBDEB-4323	BWA - Merchant Fees - Dec 20 - JB Admin	\$238.64
15/01/2021		GJBDEB-4326	SecurePay - Trans Fee Dec 20 - JB Admin	\$5.94
15/01/2021		GJBDEB-4327	WEX Fuel Usage - Dec 20	\$499.78
20/01/2021		GJBDEB-4328	M/C - Councillor Xmas Dinner	\$531.30
20/01/2021		GJBDEB-4328	M/C - Fuel PLV257	\$74.06
20/01/2021		GJBDEB-4329	M/C - Fuel PLV257	\$119.48
20/01/2021		GJBDEB-4330	M/C - Phone Cover	\$20.00
20/01/2021		GJBDEB-4331	M/C - iAuditor subscription	\$118.80
20/01/2021		GJBDEB-4332	M/C - National Police Cert. Application	\$55.80
20/01/2021		GJBDEB-4333	M/C - Build. Surveyor Reg. renewal	\$649.00
21/01/2021		GJBDEB-4324	Salary Packaging	\$2,538.60
21/01/2021		GJBDEB-4325	SuperChoice - December 20	\$19,472.03
25/01/2021		GJBDEB-4334	AusPost - Commission Dec 20 - TCVC	\$149.24
25/01/2021		GJBDEB-4335	AusPost - Commission Dec 20 - JB Admin	\$100.67
25/01/2021		GJBDEB-4336	Govt. G'Tee Fees - SSL's @ 31/12/20	\$1,098.10
27/01/2021		GJBDEB-4337	Easifleet - ERV Lease pmt 46 of 48	\$1,257.31
				\$50,178.66

No Cheques for the period 01/01/21 to 31/01/21

Date	BPAY Number	Vendor	Invoice Number	Description	Amount
8/01/2021	BPAY080121	V80818 - Telstra Corporation			
			3009311972/DEC20	CESC Usage 20/12 to 19/01/21	\$233.04
			7863675800/DEC20	JB Office shared data Dec 20	\$13,493.13
			2175531868/JAN21	Fuel Systems to 01/01/21	\$29.98
			2503689339/JAN21	Library usage to 01/01/21	\$194.90
			2175531686/JAN21	Mobile Usage to 01/1/21	\$3,051.27
				Total V80818	\$17,002.32
				Total BPAY080121	\$17,002.32
15/01/2021	BPAY150121	V81671 - Water Corporation			
			9007258734/JAN21	3 Quin Pl 4/11/20-06/01/21	\$159.66
			9016739556/JAN21	31C Dandy rd S/Charge 1/1-28/2/21	\$42.73
			9007258232/JAN21	13 Dandy Rd 4/11/20-6/1/21	\$61.00
			9007258523/DEC20	7B Dandy rd 5/11/20-6/1/21	\$329.50
			9007258566/JAN21	31B Dandy rd S/Charge 1/1-28/2/21	\$42.73
			9007258558/JAN21	31A Dandy Rd S/Charge 1/1-28/2/21	\$42.73
			9007258531/JAN21	7A Dandy rd 4/11/20-6/1/21	\$82.92
			9007258443/JAN21	2 Dandy rd 4/11/20-6/1/21	\$50.04
			9007248739/JAN21	BCC 2/11-4/1/21	\$1,525.33
			9008594764/JAN21	Badgingarra standpipe 2/11-4/1/21	\$1,229.54
				Total V81671	\$3,566.18
				Total BPAY150121	\$3,566.18
22/01/2021	BPAY220121	V81671 - Water Corporation			
			9007258494/JAN21	Dandy Depot 4/11/20-6/1/21	\$220.95
			9007258646/JAN21	Dandy Corn Centre 04/11/20-6/1/21	\$372.68
			9007258355/JAN21	Clark st Standpipe 04/11/20 to 6/1/21	\$430.92
				Total V81671	\$1,024.55
				Total BPAY220121	\$1,024.55
22/01/2021	BPAY220121A	V82552 - Western Power			
			CORPB0529489	Design works for Roberts st underground power	\$3,300.00
				Total V82552	\$3,300.00
				Total BPAY220121A	\$3,300.00
29/01/2021	BPAY290121	V84421 - Optus Billing Services Pty Ltd			
			61939377/JAN21	Sat Phone plan 05/012/20-04/01/21	\$30.00
				Total V84421	\$30.00
				Total BPAY290121	\$30.00
29/01/2021	BPAY290121A	V80818 - Telstra Corporation			
			3009311972/JAN21	CESC 20/1 to 19/02/21	\$285.92
				Total V80818	\$285.92
				Total BPAY290121A	\$285.92
				Grand Total - Other	\$25,208.97

Date	EFT Number	Vendor	Invoice Number	Description	Amount	
7/01/2021	489	Payroll	Payroll 07/01/21	Payroll 07/01/21	\$104,639.05	
					Total EFT 489	\$104,639.05
8/01/2021	490/1036	V80003 - Redgum Reports Inc	20200358	Shire Matters - Ed 22	\$979.00	
				Total V80003	\$979.00	
		V80021 - BOC Gases	5005234432	Cylinder Hire Usage Dec 20	\$90.62	
				Total V80021	\$90.62	
		V80087 - Synergy	089860550/DEC20	Badgy fire station 21/10 to 18/12/20	\$155.34	
			438517550/DEC20	Pioneer park toilets 22/10-18/12/20	\$373.97	
			825693390/DEC20	Creek pump 24/10-21/12/20	\$108.83	
			295333350/DEC20	Zendora rd standpipe 22/10-17/12/20	\$157.97	
				Total V80087	\$796.11	
		V80150 - RDI Transport	43049	Freight - Hino Prime Mover	\$1,100.00	
				Total V80150	\$1,100.00	
		V80163 - Badgingarra Community Assn	2020-153	2021 Community grant - Aust day	\$750.00	
				Total V80163	\$750.00	
		V80228 - Arrow Bronze	703456	Cemetery Plaques	\$888.14	
				Total V80228	\$888.14	
		V80240 - RBC Rural	28694	Meter Plan Charge Dec 20	\$2,078.65	
				Total V80240	\$2,078.65	
		V80279 - Jurien Sport and Recreation Centre	OPERATOR RETURN 29/12/20	BookEasy Bookings 29/12/20	\$353.00	
			OPERATOR RETURN 04/01/21	BookEasy Booking 9076433	\$3,073.00	
				Total V80279	\$3,426.00	
		V80289 - Jurien Pharmacy	12882/JAN21	Fitness for work test kits	\$799.80	
				Total V80289	\$799.80	
		V80405 - Coastal Trimming	6800	Manufacture windsocks	\$835.12	
				Total V80405	\$835.12	
		V80910 - Mcleods Barristers And Solicitors	117055	Legal Expense - Litter Act Prosecution	\$406.99	
				Total V80910	\$406.99	
		V81002 - Landgate	361480	Gross rental valuations	\$225.86	
			1065821	Documents	\$26.70	
				Total V81002	\$252.56	
		V81114 - Boral Construction materials Group Ltd	AWWPS00337-001	Supply & Spray bitumen spray	\$207,368.37	
				Total V81114	\$207,368.37	
		V81352 - Jurien Signs	5029	Street Blade & Hoop Signage	\$234.50	
			5035	Skate park signage	\$1,555.00	
			5036	Caution slip hazard sign	\$55.00	
			5037	Corflute insert signs	\$100.00	
			5052	Rural road number	\$27.20	
				Total V81352	\$1,971.70	
		V81374 - Building and Construction Industry Training Fund	86164-H7N1Q3	BCITF - 070121090413	\$251.75	
			86161-H1V4B0	BCITF - 070121090049	\$1,334.12	
			86158-P4M3J6	BCITF - 070121085752	\$578.38	
			86156-V2N2S7	BCITF - 070121085148	\$434.44	
			86154-G1Z1L3	BCITF - 070121084635	\$83.75	
				Total V81374	\$2,682.44	
		V81382 - Cervantes Hardware and Marine	163306	Kwikset premix concrete	\$18.70	
			163532	24 hr timer	\$12.10	
			163539	Fuchs Titan oil	\$59.40	
			163621	PVC Fittings, plumbers tape, timer	\$104.61	
				Total V81382	\$194.81	
		V81506 - Afagri Equipment Australia Pty Ltd	1988101	Oil Filters & filler cap	\$312.13	
			1994429	Bucket repairs - PCL009	\$3,651.90	
			1994430	Service & repair - PCL008	\$1,609.71	
				Total V81506	\$5,573.74	
		V81688 - Swan Aussie Sheds	9037	Supply flashings	\$150.00	
				Total V81688	\$150.00	
		V81740 - Engineering Technology Consultants	10140	Electrical Consultancy - Beach Pavilion	\$3,894.00	
				Total V81740	\$3,894.00	
		V81860 - Shadbolt Electrical	4501247	Electrical work - Jurien Bay Airport	\$6,255.67	
				Total V81860	\$6,255.67	
		V81973 - Fuel Distributors of WA Pty Ltd	481002871	Diesel - Dandy depot	\$17,610.46	
			408114	Diesel - Jurien Depot	\$5,259.83	
				Total V81973	\$22,870.29	
		V82028 - Avon Waste	41915	Fortnightly Rubbish Removal	\$14,632.02	
			41979	Fortnightly Rubbish Removal	\$14,962.52	
				Total V82028	\$29,594.54	
		V82057 - Ray White Jurien Bay		Staff Housing 13/01 - 26/01/20	\$670.00	
				Total V82057	\$670.00	
		V82138 - Avon Midland Country Zone Of WA	339	2020/21 Membership	\$2,200.00	
				Total V82138	\$2,200.00	
		V82274 - Vari-Skilled	15857	Shire Mowing Dec 20	\$14,422.39	
				Total V82274	\$14,422.39	

V82282 - Isweep Town & Country	2559	Sweeping of roads	\$10,543.50
		Total V82282	\$10,543.50
V82672 - Jurien Bay Tourist Park	OPERATOR RETURN 29/12/20	BookEasy Booking 8986030	\$1,076.25
	OPERATOR RETURN 04/01/21	BookEasy Booking 8207850	\$1,050.00
		Total V82672	\$2,126.25
V82823 - The Last Drop Plumbing Co	4137	Clear blocked drains - Catalonia st	\$561.00
		Total V82823	\$561.00
V82993 - Jurien Bay Mitre 10	540413	Valve box, globes, ConctEnd	\$25.90
	540407	ConctEnd, poly bush, valve ball, reducer bush	\$30.10
	540447	Flat washers, anchor sleeves, screwdrivers	\$41.80
	540563	Cable ties	\$33.50
	540193	Jumbo toilet rolls	\$110.00
	540942	Sikallex sealant	\$27.75
	540943	Poly pipe blueiline & joiner	\$205.30
	540831	Rope 6mm	\$375.00
	540460	Jumbo toilet rolls	\$165.00
	540219	Chainsaw files	\$29.00
	540296	Spray Marker Dye Red	\$39.00
	540335	Screwdriver set	\$31.25
	540186	Acetone, silicone remover, rags, wheel co met inox	\$70.35
	540226	CLR Cleaner	\$19.95
	540231	Hydro Acid, nylon elbows	\$36.15
	540961	S/Steel coach screws	\$3.50
	540972	Coach screws	\$3.95
	541042	Energizer batteries, bond Crete pail	\$66.45
	541229	Pressure pipe, PVC fittings	\$91.55
	541230	Pressure pipe	\$65.00
	541618	Female adaptor, poly bush, adaptor	\$25.80
	541739	Rectangle valve box	\$41.00
	542083	Post Crete, hose, angle brackets	\$96.65
	541922	hydraulic Door closer	\$130.00
	541878	Jumbo toilet rolls	\$110.00
	542584	Order 69224	\$14.50
	542581	Butane, traps, felt pads	\$54.10
	542181	Stihl synthplus bar and cutter oil	\$39.50
	543447	Onga Pump	\$640.00
	543810	Brass padlock	\$22.50
	541737	Screws, Batteries, wood polish	\$40.25
	541460	Jumbo toilet rolls	\$110.00
	542756	Large straw hat	\$13.50
	542905	Jumbo toilet rolls	\$110.00
	543173	Jumbo toilet rolls	\$110.00
	543674	Jumbo toilet rolls	\$110.00
		Total V82993	\$3,138.30
V83121 - Dandaragan Community Resource Centre Inc	68617	Dandaragan Cleaning & Maintenance Contract Dec 21	\$1,320.92
		Total V83121	\$1,320.92
V83145 - Avdata Australia	150029051/106	Jurien Airport flight data Dec 20	\$438.00
		Total V83145	\$438.00
V83188 - Leslee Holmes (Cr)	TRAVEL ALL OCT-DEC 20	Members Travel Oct to Dec 20	\$697.47
		Total V83188	\$697.47
V83278 - The Workwear Group Pty Ltd	12778310	Staff Uniforms	\$79.99
		Total V83278	\$79.99
V83310 - AMPAC Debt Recovery (WA) Pty Ltd	71762	Legal Expenses 17/12-31/12/20	\$745.80
		Total V83310	\$745.80
V83420 - Porter Consulting Engineers	20746	Jurien Bay airport detailed design	\$2,997.50
	20779	Jurien Bay foreshore Electrical consultant Co-ordination	\$825.00
	21001	Jurien Bay foreshore Electrical consultant Co-ordination	\$9,341.20
		Total V83420	\$13,163.70
V83427 - Bridged Group Pty Ltd	25385	Datto Backupify for office 365 - Jan 21	\$198.00
		Total V83427	\$198.00
V83507 - Council First	SI006140	Sinefa Usage Jan 21	\$257.40
	SI006150	STP Transactions Dec 20	\$24.64
		Total V83507	\$282.04
V83694 - Elite Electrical Contracting Pty Ltd	82608	Connect submersible bore with new cable & plug	\$220.00
		Total V83694	\$220.00
V83736 - Waterlogic Australia Pty Ltd	10656512	Water Filter & Ice Machine Lease January 21	\$877.80
	10656512A	Water Filter & Ice Machine Lease January 21	\$678.70
		Total V83736	\$1,556.50
V83780 - Pinnacles Traffic Management Services	97	Traffic management JER	\$3,432.00
		Total V83780	\$3,432.00
V83888 - Aztec Signs & Murals	J112074	Directional Pillar Signs - Bashford st	\$59,400.00
	J12075	Precinct Pedestrian Signs	\$19,690.00
		Total V83888	\$79,090.00
V83914 - Turquoise Safaris	BOOEASY BOOKING 8557195	BookEasy Booking	\$1,602.50
	OPERATOR RETURN 04/01/21	BookEasy Booking	\$195.50
		Total V83914	\$1,798.00
V84004 - Department of Water and Environmental Regulation	TF016477	Controlled Waste tracking 16/12-23/12/20	\$484.00
	DL003768	Controlled Waste Licence	\$60.00
		Total V84004	\$544.00

V84155 - Jurien Hardware - Thrifty Link

20-00036347	Cleaning materials	\$71.48
20-00036564	Garden bags	\$8.56
20-00036345	Easysee spay marker dye	\$21.85
20-00036441	Bolts & washers	\$19.95
20-00036569	Various reticulation parts	\$91.30
20-00036676	Spark plugs	\$30.40
20-00036675	Starter rope	\$1.42
20-00036425	Key wall safe	\$24.22
20-00036683	Protective clothing	\$415.20
20-00036684	Protective clothing	\$190.00
20-00037236	Rapid set cement	\$484.80
20-00037294	HR auto yard watering kit	\$141.55
20-00036593	Poly tees, bushes & nipples	\$9.98
20-00036908	Large foam kneeling pad	\$9.02
20-00037026	9kg gas refills	\$66.50
20-00037141	Nuts & bolts	\$2.66
20-00037161	Pruner & saw set	\$38.00
20-00037266	Eversure extension lead	\$9.50
20-00037293	Reticulation fittings	\$58.75
20-00037259	Black cable ties	\$11.88
20-00037361	Solvent Cement	\$11.40
20-00037477	Paint brush	\$5.89
20-00037613	Padlock brass	\$14.25
20-00037979	Poly fittings, teflon tape	\$99.99
20-00038088	Bow shackle, pink brick line	\$13.30
20-00038155	Various retic parts	\$176.71
20-00038179	Various retic parts	\$32.88
20-00038312	Blank house keys	\$9.50
20-00038258	Various retic parts	\$75.52
20-00038730	Rivet gun	\$31.30
20-00038982	Cable ties	\$9.02
20-00039160	P8 nylon hose	\$23.75
20-00039791	Cable joiner	\$45.98
20-00037028	9 kg gas refill	\$66.50
20-00039567	9kg gas refills	\$66.50
	Total V84155	\$2,389.51

V84221 - Holiday Guide Pty Ltd

2524	Marketing fee	\$235.46
	Total V84221	\$235.46

V84246 - Blue Sky Apartment

OPERATOR RETURN 29/12/20	BookEasy Booking 9029557	\$392.87
	Total V84246	\$392.87

V84273 - Building And Energy

DANDARAGAN BSL DEC 2020	BSL Remittance for Dec 20	\$5,411.04
	Total V84273	\$5,411.04

V84371 - Nessa Hall - Nessay Cleaning Management Services

7164	Cervantes cleaning contract Dec 20	\$3,474.63
	Total V84371	\$3,474.63

V84422 - Jurien Tyre & Auto

51709	Fit & balance new tyres - PLV258	\$786.00
51885	Service air conditioner - PLV233	\$247.00
	Total V84422	\$1,033.00

V84434 - Convic Pty Ltd

1093	Progress claim 5 - Jurien Bay Skate Park	\$132,501.60
	Total V84434	\$132,501.60

V84445 - DIRTT Window Cleaning & Maintenance Services

181	Clean windows	\$770.00
	Total V84445	\$770.00

V84454 - Common Ground Trails Pty Ltd

18363	Progress claim 3 - pump track design	\$2,475.00
	Total V84454	\$2,475.00

V84458 - Professionals Jurien Bay

	Staff Housing 13/01 - 26/01/20	\$760.00
	Total V84458	\$760.00

V84475 - Brown Geotechnical

20135.1	Provide Geotechnical report	\$3,520.00
	Total V84475	\$3,520.00

V84476 - Leigh Pinker

BOND REIMBURSEMENT	Cat/Fox trap bond reimbursement	\$100.00
	Total V84476	\$100.00

V84477 - DL & J Hooton

REFUND RATES CREDIT	Refund rates credit	\$3,037.67
	Total V84477	\$3,037.67

V84478 - Vestone Capital

114305	Councillor Lap Tops Lease 4/1-31/03/20	\$2,700.20
	Total V84478	\$2,700.20
	Total EFT01036	\$588,987.39

15/01/2021

491/1037

V80033 - Derricks Auto-Ag & Hardware Plus

10229899	Tee Adaptor, Poly fittings, sprinklers	\$286.40
	Total V80033	\$286.40

V80087 - Synergy

415004990/DEC20	Dandy depot 22/10-18/12/20	\$727.73
113698450/DEC20	Canover standpipe 22/10-18/12/20	\$134.56
429026190/DEC20	Jurien depot 20/11-17/12/20	\$1,554.26
182506710/DEC20	Jurien Bay Vista Fire Hydrant 22/10-18/12/20	\$107.00
164741840	Ocean View Pde Fire Hydrant 22/10-18/12/20	\$108.43
208476200/DEC20	2 Way towers 8/10-2/12/20	\$139.18
610385240/DEC20	Cambewarra Dv Standpipe 22/10-17/12/20	\$132.70
919109010/DEC20	Powerwatch security lighting 1/12-31/12/20	\$412.52
411619200/DEC	New admin centre 20/11-16/12/20	\$3,903.15
153530590/DEC20	Badgingarra oval 21/10-18/12/20	\$2,208.72
721287150/JAN21	Street Lights 25/11-24/12/20	\$15,379.18
317260610/JAN21	JCC 28/11-29/12/20	\$925.76
298673950/DEC20	Badgy Oval lights 21/10-18/12/20	\$111.51
538463750/JAN21	Dobbyn park nth 7/11/20-8/1/21	\$253.72
246525150/JAN21	Retic Eric Collinson Pk 6/11/20-7/1/21	\$693.22
261265300/JAN21	New Fauntleroy Park 07/11/20-7/01/21	\$852.70
906148990/JAN21	Pioneer park 7/11/20-7/1/21	\$242.40
713393800/JAN21	Pioneer park nth 7/11/20-8/1/21	\$266.93

	124478710/JAN21	Passamani Park 6/1120-8/1/21	\$295.76
	114850720/JAN21	Lot 306 Pinetree cct	\$346.65
	589405930/JAN21	Dobbyn park south 7/11/20-8/1/21	\$415.62
	553162190/JAN21	Jurien Hall GWN 5/11/20-6/1/21	\$193.72
	317207730/JAN21	Jurien Airstrip 5/11/20-6/1/21	\$500.60
	017389700/JAN21	Family Resource Centre 05/11/20-6/1/21	\$1,354.33
	513665230/JAN21	Dam Pump 10/12/20-12/1/21	\$1,400.56
	732141310/JAN21	Jurien F/S Amenities 7/11/20-8/1/21	\$400.41
	976944290/JAN21	Weld park retic pump	\$549.89
		Total V80087	\$33,611.21
V80150 - RDI Transport			
	43049A	Freight - Jurien Depot	\$165.00
	43218	Freight - roll artificial turf	\$82.50
		Total V80150	\$247.50
V80163 - Badgingarra Community Assn			
	2020-154	General Maintenance Contract December 20	\$3,400.10
		Total V80163	\$3,400.10
V80279 - Jurien Sport and Recreation Centre			
	OPERATOR RETURN 110121	BookEasy Booking 9077878	\$1,226.00
		Total V80279	\$1,226.00
V81031 - AN & A Whybrow			
	4409	Machine hire - removal of trees	\$3,960.00
	4415	Hire of prime mover & double side tippers	\$5,082.00
		Total V81031	\$9,042.00
V81172 - WA Hino Sales & Service			
	HTCM133764	Diagnose & fix fault with SCR unit	\$15,687.35
		Total V81172	\$15,687.35
V81382 - Cervantes Hardware and Marine			
	163318	Cable ties	\$3.30
	162155	Poly fittings	\$123.86
		Total V81382	\$127.16
V81490 - Ricoh Finance			
	312901	Photo copier lease 08/02-07/03/21	\$1,337.60
		Total V81490	\$1,337.60
V81545 - Winc Australia Pty Limited			
	9034328997	Stationery	\$52.25
	9034355465	Stationery	\$85.18
	9034739021	Stationery	\$59.40
	9034721004	Stationery	\$60.72
	9034734227	Stationery	\$66.00
		Total V81545	\$323.55
V81795 - Jurien Bay Community Resource Centre			
	1352	Santa suit hire	\$50.00
	1369	Summer tales - advertising	\$250.00
		Total V81795	\$300.00
V81860 - Shadbolt Electrical			
	4501272	Upgrade electrical System	\$1,803.02
		Total V81860	\$1,803.02
V81882 - Jurien Trenching & Excavations			
	1434	Supply & install practise cricket nets	\$16,000.00
		Total V81882	\$16,000.00
V81912 - Moore Stephens WA Pty Ltd			
	1177	2020 Financial reporting training	\$1,782.00
		Total V81912	\$1,782.00
V81924 - Toll Transport Pty Ltd			
	0496-D583590	Freight - Jurien Admin	\$10.73
	0494-D583590	Freight - Jurien Admin	\$130.52
	0495-D583590	Freight - Dandy Depot	\$59.29
		Total V81924	\$200.54
V82028 - Avon Waste			
	42064	Fortnightly rubbish removal 19/12/20-01/01/21	\$22,849.13
		Total V82028	\$22,849.13
V82225 - Midcoast Hydraulic Services			
	0744	Wet hire water cart - JER	\$10,510.50
		Total V82225	\$10,510.50
V82228 - Marketforce Pty Ltd			
	36496	Advertising - Local govt tenders	\$615.90
		Total V82228	\$615.90
V82474 - Direct Contracting Pty Ltd			
	2137	Hire of plant & equip - Hanson Bay Rd	\$44,682.00
	2138	Hire of water tanker & loader	\$25,245.00
	2139	Remove kerb & dispose off site	\$924.00
	2144	Installation of drainage	\$60,775.00
		Total V82474	\$131,626.00
V82672 - Jurien Bay Tourist Park			
	OPERATOR RETURN 110121	BookEasy Booking 8864977	\$656.25
		Total V82672	\$656.25
V82774 - T-Quip			
	96685#5	Chain, Filters, air cleaner, belts	\$882.35
	97889#7	V-Belt	\$34.70
		Total V82774	\$917.05
V82823 - The Last Drop Plumbing Co			
	4146	Repair basin & water fountain	\$2,115.85
		Total V82823	\$2,115.85
V83094 - Dave Watson Contracting Pty Ltd			
	2151	Pruning of trees	\$5,252.50
		Total V83094	\$5,252.50
V83121 - Dandaragan Community Resource Centre Inc			
	124029	2nd instalment Services Support 20/21	\$18,326.30
		Total V83121	\$18,326.30
V83420 - Porter Consulting Engineers			
	20782	Completion of final drawings	\$24,612.50
		Total V83420	\$24,612.50
V83480 - Jurien Bay Newsagency			
	SN00035131122020	Reflex copy paper	\$9.95
		Total V83480	\$9.95
V83495 - Dandaragan Store			
	C56/DEC20	Dining and Refreshments (office hours)	\$48.66
		Total V83495	\$48.66
V83660 - D Greenwood			
	DEC20/16	Waste Management - Badgy Tip Dec 20	\$1,280.00
		Total V83660	\$1,280.00

V83705 - Telstra			04169079/P023546464-1	Whispir Usage Dec 20	\$463.63
				Total V83705	\$463.63
V83738 - George P Mostert			VERGE BOND REFUND	Verge Bond refund 105/2019	\$500.00
				Total V83738	\$500.00
V83863 - Badgingarra Roadhouse & Tourist Park			1081758	Diesel	\$239.07
				Total V83863	\$239.07
V83900 - Tronox Management Pty Ltd			REFUND OF RATES	Refund of rates	\$788.25
				Total V83900	\$788.25
V83914 - Turquoise Safaris			OPERATOR RETURN 11/01/21	BookEasy Booking 9046610	\$370.50
				Total V83914	\$370.50
V83925 - BookEasy Pty Ltd			18938	BookEasy Monthly booking fee Dec 20	\$330.00
				Total V83925	\$330.00
V83975 - Corsign (WA) Pty Ltd			52710	Smart plastic sleeves	\$907.50
				Total V83975	\$907.50
V84006 - Badgingarra Motors			53040	Penrite Penlue AdBlue	\$70.00
				Total V84006	\$70.00
V84117 - Vanguard Press			28497	Brochure distribution	\$134.05
				Total V84117	\$134.05
V84136 - J Bay Concreting			183	Installation of bollards - Shingle Ave	\$1,188.00
			184	Installation of solar bollards - Cervantes	\$1,391.50
				Total V84136	\$2,579.50
V84175 - Ni Luh Eyden			JAN21/48	Cleaning toilets & BBQ's - Sandy Cape	\$1,505.00
				Total V84175	\$1,505.00
V84327 - Lyall Ward			DEC20/11	Waste management Dandy tip Dec 20	\$2,112.00
			DEC20/12	Loader hire - push up Dandy tip	\$165.00
				Total V84327	\$2,277.00
V84371 - Nessa Hall - Nessay Cleaning Management Services			7145	Cleaning Contract Dec 20	\$5,411.29
			7166	Additional Cleaning Services - Festival Season	\$3,388.00
				Total V84371	\$8,799.29
V84422 - Jurien Tyre & Auto			51886	Repairs to low water alarm - PTL021	\$620.15
			51900	Fit new truck tyre to rim - PTL021	\$600.00
			52000	Repairs to fire pump - PLV232	\$148.00
			52112	100w globe	\$18.00
			52073	Repair brakes - PTT001	\$3,835.40
				Total V84422	\$5,221.55
V84462 - Jurien Bay Oceanic Experiences			OPERATOR RETURN 11/01/21	BookEasy Booking 9192751	\$805.00
				Total V84462	\$805.00
V84479 - Burns's Painting Service			531	Painting of Dandy Community Sports Centre	\$5,478.79
				Total V84479	\$5,478.79
V84480 - John Brandenburg			CROSSOVER CONTRIBUTION	Crossover contribution	\$495.00
				Total V84480	\$495.00
V84481 - Tasha Winzer			REFUND OVERPAYMENT OF RATES	Refund overpayment of rates	\$40.00
				Total V84481	\$40.00
V84482 - Carrington Associates			010-20-1	Hydraulic Services Design	\$4,200.00
				Total V84482	\$4,200.00
				Total EFT01037	\$339,399.15
21/01/2021	492	Cancelled	Cancelled	Cancelled	\$0.00
				Total EFT 492	\$0.00
21/01/2021	493	Cancelled	Cancelled	Cancelled	\$0.00
				Total EFT 493	\$0.00
21/01/2021	494	Cancelled	Cancelled	Cancelled	\$0.00
				Total EFT 494	\$0.00
21/01/2021	495	Payroll	Payroll 14/01/21	Payroll 14/01/21	\$102,721.67
				Total EFT 495	\$102,721.67
22/01/2021	496/1038				
V80033 - Derricks Auto-Ag & Hardware Plus			10229939	Auto shut fuel nozzle	\$439.00
				Total V80033	\$439.00
V80087 - Synergy			454515450/JAN21	Marine fields standpipe 12/11/20-12/1/21	\$121.54
			263827240/JAN21	Beachridge Estate entry 11/11/20 to 12/1/21	\$116.22
			902806950/JAN21	Baudin Park 12/11/20-12/01/21	\$292.92
			111890000/JAN21	Pacman Park 11/11/20-12/1/21	\$585.56
			111890190/JAN21	5A Park 11/11/20-12/1/21	\$119.09
				Total V80087	\$1,235.33
V80102 - Westrac Equipment			PI5329157	Hydraulic ram seal kit	\$303.03
				Total V80102	\$303.03
V80150 - RDI Transport			43322	Freight - Dandy depot	\$495.00
				Total V80150	\$495.00
V80279 - Jurien Sport and Recreation Centre			OPERATOR RETURN 18/01/21	BookEasy booking 9182670	\$164.00
				Total V80279	\$164.00
V81038 - AV Truck Services Pty Ltd			738399	Sensor - coolant level	\$764.13
			R040216	Repair fault with DPF system - PTH015	\$8,077.07
				Total V81038	\$8,841.20
V81097 - Australia Post			1010205006	Jurien Admin Postage Dec 20	\$974.65
				Total V81097	\$974.65
V81115 - Chadson Engineering Pty Ltd			A0091119	Photo chlorine & PH tablets	\$102.85
				Total V81115	\$102.85

V81252 - Brooks Hire Service Pty Ltd	173684	Hire of smooth drum roller	\$6,043.84
	173884	Hire smooth drum roller	\$4,230.69
		Total V81252	\$10,274.53
V81343 - Dandaragan Mechanical Services	6315	Supply & fit fuel pump - PTC025	\$1,558.15
	6326	Repairs to Hino - PTH016	\$1,447.50
	6327	Repairs to hydraulic leak - PTC022	\$264.10
	6379	Repairs to water truck - PTH017	\$574.20
	6557	Replace sight glass on hydraulic tank - PTC020	\$91.05
	6496	Tyres	\$352.00
		Total V81343	\$4,287.00
V81348 - Russ - Hills Contracting	4230	Freight - Dandy Depot	\$97.57
		Total V81348	\$97.57
V81352 - Jurien Signs	5033	900x600 4mm No Jumping - Jetty Sign	\$217.80
	5030	200x200 No Dog Signs	\$240.00
	5053	Protective Clothing - Gloves	\$1,365.00
	4814	Signs - no vehicle beyond this point	\$352.00
		Total V81352	\$2,174.80
V81382 - Cervantes Hardware and Marine	163776	Stanley knife, kwikset concrete	\$15.95
	163793	Chrome universal tap handles	\$12.10
	163967	Ultra thin cutting disc	\$26.95
	163971	Galv cup head, flat washer	\$6.49
	163929	Solenoid & PVC fittings	\$315.37
		Total V81382	\$376.86
V81545 - Winc Australia Pty Limited	9034872965	Daily pre start books	\$530.46
	9034355462A CR	Credit Stationery	-\$85.18
		Total V81545	\$445.28
V81581 - St John Ambulance Australia	1446	Off road first aid kits	\$220.00
		Total V81581	\$220.00
V81593 - Worldwide Printing Solutions	603343	Sandy cape camp fee envelopes	\$1,600.00
		Total V81593	\$1,600.00
V81688 - Swan Aussie Sheds	9038	Fence Post	\$125.25
		Total V81688	\$125.25
V81860 - Shadbolt Electrical	4501255	Replace rear carpark light lamp	\$655.60
		Total V81860	\$655.60
V81874 - Child Support	PJ003453	Child Support	\$171.91
		Total V81874	\$171.91
V81882 - Jurien Trenching & Excavations	1435	Supply & lay cement pads	\$3,000.00
		Total V81882	\$3,000.00
V81896 - Mid Coast Contracting	6444	Testing & tagging hand tools	\$922.30
		Total V81896	\$922.30
V81963 - Lewis Motors	59630	Wheel hub seal	\$32.14
		Total V81963	\$32.14
V82057 - Ray White Jurien Bay		Staff Housing 27/01 TO 09/02/21	\$670.00
		Total V82057	\$670.00
V82470 - D A Christie Pty Ltd T/as Christie ParkSafe	5307299	Brickwork large cabinet with cooktops	\$9,899.01
		Total V82470	\$9,899.01
V82649 - Jurien Garden Soils	DEC20/26	Mixed plants	\$408.00
		Total V82649	\$408.00
V82672 - Jurien Bay Tourist Park	OPERATOR RETURN 18/01/21	BookEasy booking 9193486	\$135.62
		Total V82672	\$135.62
V82767 - Fowler Electrical Contracting	R007771	Supply & install new water pump	\$5,363.16
		Total V82767	\$5,363.16
V82823 - The Last Drop Plumbing Co	4116	Repairs to standpipe	\$735.90
	4172	Unblock drain	\$583.00
		Total V82823	\$1,318.90
V83012 - Moora Tyres	58435	O-Ring, inner-liner seal	\$129.60
		Total V83012	\$129.60
V83047 - Dick Panizza & Co	69119	Supply of gravel	\$27,456.00
		Total V83047	\$27,456.00
V83278 - The Workwear Group Pty Ltd	12618935	Staff Uniforms	\$399.00
	824873	Staff Uniforms - Return	\$115.06
	12721326	Staff Uniforms	\$115.06
	834566	Staff Uniforms - return	\$115.06
	12682077	Staff Uniforms	\$399.00
	829532	Staff Uniforms	\$144.19
	829700	Staff Uniforms - return	\$32.37
	12797652	Staff Uniforms	\$147.22
	12686340	Staff Uniforms	\$399.00
	832398	Staff Uniforms - returned	\$182.48
	12704926	Staff uniforms	\$440.79
	831602	Staff uniforms - returned	\$396.79
	12758857	Staff Uniforms	\$215.21
		Total V83278	\$1,129.33
V83340 - CONNECT Call Centre Services	104747	After hrs call Dec 20	\$369.66
		Total V83340	\$369.66
V83413 - Direct Lighting Albany	76208	Light Starters & tubes	\$507.00
	76210	Light starters	\$40.00
		Total V83413	\$547.00

V83694 - Elite Electrical Contracting Pty Ltd	82627	Repair motion sensor light	\$104.50
	82603	Check & repair air conditioner	\$78.38
	82644	Repairs to server room air conditioner	\$223.09
		Total V83694	\$405.97
V83899 - All-Type Engraving	44828	Councillor name plates	\$79.20
		Total V83899	\$79.20
V83926 - Alcolizer Technology	224791	Service of HH3 Breath Tester	\$125.40
		Total V83926	\$125.40
V84100 - Jurien Bay Motel Apartments	OPERATOR RETURN 18/01/21	BookEasy booking 9197248	\$140.25
		Total V84100	\$140.25
V84458 - Professionals Jurien Bay		Staff Housing 27/01 TO 09/02/21	\$760.00
		Total V84458	\$760.00
		Total EFT496/1038	\$85,875.40

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497/039

V80043 - Jurien Bay IGA	07/DEC20	Jurien Bay Administration Consumables December 20	\$678.96
		Total V80043	\$678.96
V80087 - Synergy	818063790/JAN21	Cervantes F/S amenities 14/11/20-14/1/21	\$143.08
	905537000/JAN21	Memorial Cnr 14/11/20-14/1/21	\$211.40
	686912910/JAN21A	Cervantes Oval 14/11/20-14/1/21	\$2,275.39
	903907310/JAN21	Cervantes F/S Amenities 14/11/20-14/01/21	\$352.34
	113142450/JAN21	Cervantes Waste Transfer Stn 13/11/20-13/01/21	\$181.26
	853497790/JAN21	Cervantes Depot 12/11/20-13/01/21	\$116.22
	108788340/JAN21	Cervantes CBD rest area 13/11/20-14/01/21	\$141.19
	125055780/JAN21	Weston st park 14/11/20-14/01/21	\$114.37
	411619200/JAN21	New admin centre 17/12/20-20/01/21	\$6,563.29
	429026190/JAN21	Jurien depot 18/12/20-20/01/21	\$2,064.06
		Total V80087	\$12,162.60
V80121 - Kleenheat Gas Pty Ltd	4342084	45gk Cylinder Service Charge 2021	\$85.80
		Total V80121	\$85.80
V80240 - RBC Rural	28786	Meterplan charge Jan 20	\$2,822.00
		Total V80240	\$2,822.00
V80279 - Jurien Sport and Recreation Centre	OPERATOR RETURN 25/01/21	BookEasy Booking 9123528	\$758.00
		Total V80279	\$758.00
V80549 - BP Jurien Bay	9643	Repair tyre puncture	\$100.00
		Total V80549	\$100.00
V81352 - Jurien Signs	4647	Cancer council sunscreen	\$89.70
	5058	Rural Road Numbers	\$101.60
		Total V81352	\$191.30
V81924 - Toll Transport Pty Ltd	0497-D583590	Freight - Dandy Depot	\$10.73
	0498-D583590	Freight - Jurien Admin	\$127.82
	0499-D583590	Freight - Dandy Depot	\$43.45
		Total V81924	\$182.00
V82672 - Jurien Bay Tourist Park	OPERATOR RETURN 25/01/21	BookEasy booking 9248251	\$131.25
		Total V82672	\$131.25
V83074 - Indian Ocean Rock Lobster	33053	Function food & Refreshments	\$7,427.50
		Total V83074	\$7,427.50
V83121 - Dandaragan Community Resource Centre Inc	124045	Cleaning & maintenance contract January 21	\$1,320.92
		Total V83121	\$1,320.92
V83298 - Shaun Turbett Welding & Fabrication Services	1274	Visitor Centre Merchandise	\$243.98
		Total V83298	\$243.98
V83484 - Cervantes Community Men's Shed	11	Visitor centre merchandise - mats	\$442.00
		Total V83484	\$442.00
V83507 - Council First	SI006172	Office 365 - Feb 21	\$1,055.26
		Total V83507	\$1,055.26
V83663 - Concept AV	11292	Soft conference camera for chambers	\$7,817.70
		Total V83663	\$7,817.70
V83715 - Pinnacles Holiday Park	OPERATOR RETURN 25/01/21	BookEasy Booking 9204872	\$78.75
		Total V83715	\$78.75
V83914 - Turquoise Safaris	OPERATOR RETURN 25/01/21	BookEasy Booking 9229512	\$545.50
		Total V83914	\$545.50
V83976 - Turquoise Coast Smash Repairs	468	Repairs to left hand panel - PLV262	\$764.50
		Total V83976	\$764.50
V84004 - Department of Water and Environmental Regulation	TF016831	Controlled Waste tracking 04/01/21	\$88.00
		Total V84004	\$88.00
V84062 - IQ Merchandising	4159	Visitor Centre Merchandise	\$889.85
		Total V84062	\$889.85
V84422 - Jurien Tyre & Auto	52150	Assembly clutch master cylinder	\$52.35
	52236	Repair tyres - PCL008	\$246.00
		Total V84422	\$298.35
V84430 - MCG Architects Pty Ltd	2375	Structural Engineer & contract documentation	\$14,905.00
		Total V84430	\$14,905.00
V84483 - Jonathan Epps	INVOICE 190121	Travel, accomodation, & tree inspect & report	\$2,660.00
		Total V84483	\$2,660.00
V84484 - Linda Quanchi	JAN21/2	Visitor centre merchandise	\$479.00
		Total V84484	\$479.00
		Total EFT497/1039	\$56,128.22

Grand Total - EFT Payment

\$1,277,750.88



Monthly Statements

for the period ending 31 January 2021

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SHIRE OF DANDARAGAN
 FINANCIAL ACTIVITY STATEMENT by Department
 as at 31 January 2021

	Leg.	Note	Budget 2020/2021	Y-T-D Budget 2020/2021	Actual 2020/2021	Variance
			\$	\$	\$	
OPERATING ACTIVITIES						
Adjusted net current assets at start of financial year - surplus/(deficit)	FMR34(2)(a)		723,612	739,166	739,166	
Revenue from operating activities (excluding rates)						
Governance			78,168	16,527	12,759	77%
General purpose funding			739,452	371,576	391,399	105%
Law, order & public safety			405,503	399,601	384,057	96%
Health			4,290	2,200	36,461	1657%
Education & welfare			10,500	0	0	100%
Community amenities			1,359,940	1,149,039	1,151,254	100%
Recreation and culture			427,586	249,332	278,238	112%
Transport			276,093	258,907	281,438	109%
Economic services			229,166	155,741	168,086	108%
Other property and services			136,571	85,686	153,030	179%
			3,667,270	2,688,609	2,856,722	
Expenditure from operating activities						
Governance			(642,760)	(314,712)	(306,961)	98%
General purpose funding			(197,086)	(107,263)	(100,360)	94%
Law, order & public safety			(1,344,056)	(720,266)	(738,023)	102%
Health			(321,579)	(170,697)	(165,355)	97%
Education & welfare			(110,359)	(35,586)	(31,920)	90%
Community amenities			(2,262,988)	(1,304,894)	(1,257,101)	96%
Recreation and culture			(3,144,733)	(1,881,601)	(1,728,675)	92%
Transport			(5,397,208)	(3,137,972)	(3,146,006)	100%
Economic services			(726,692)	(404,767)	(366,722)	91%
Other property and services			(619,246)	(126,907)	(77,970)	61%
			(14,766,706)	(8,204,664)	(7,919,093)	
Non-cash amounts excluded from operating activities			6,308,988	3,447,201	3,468,843	
Amount attributable to operating activities			(4,066,836)	(1,329,688)	(854,361)	
INVESTING ACTIVITIES						
Non-operating grants, subsidies and contributions	11		7,193,247	5,490,593	1,965,165	
Proceeds from disposal of assets	3		33,600	33,600	0	
Purchase land and buildings	2		(1,751,317)	(1,021,602)	0	
Purchase furniture and equipment	2		(341,547)	(199,236)	(7,107)	
Purchase plant and equipment	2		(7,000)	(4,083)	0	
Purchase infrastructure assets - roads	2		(5,173,070)	(3,017,624)	0	
Purchase infrastructure assets - parks & reserves	2		(529,977)	(309,153)	0	
Purchase infrastructure assets - other	2		(4,093,467)	(2,387,856)	0	
Purchases - Works in Progress (Not Capitalised)	2		0	0	(3,951,421)	
Amount attributable to investing activities			(4,669,531)	(1,415,361)	(1,993,363)	
FINANCING ACTIVITIES						
Proceeds from new borrowings	4		1,340,000	1,340,000	50,000	
Repayment of borrowings	4		(157,986)	(104,515)	(58,934)	
Payment of self supporting loan to community group	4		(50,000)	(50,000)	(50,000)	
Self-supporting loan principal income	4		45,436	28,397	23,486	
Community group cash advance principal income	4		2,076	2,076	2,076	
Payment of right of use lease			(40,530)	(25,617)	(26,770)	
Transfer to reserves	8		(187,045)	(11,667)	(16,923)	
Transfer from reserves	8		(818,335)	(0)	(0)	
Amount attributable to financing activities			(1,770,286)	(1,178,675)	77,066	
Budgeted deficiency before general rates			6,966,081	1,566,374	2,924,789	
Estimated amount to be raised from general rates	6		(6,300,242)	(6,301,235)	(6,326,369)	
Adjusted net current assets at end of financial year - surplus/(deficit)	FMR34(2)(a)	5	665,839	(4,734,861)	(3,401,580)	
Budget adjustment - Provisions	FMR32(f)		(665,839)	(665,839)		
Budget Surplus / (Deficiency)			(0)	(5,400,700)		

This statement is to be read in conjunction with the accompanying notes.

FMR = Local Government (Financial Management) Regulations 1996

SHIRE OF DANDARAGAN
STATEMENT OF FINANCIAL POSITION
as at 31 January 2021

Description	Note	for the year	for the period
		ended 30	ending 31
		June 2020	January 2021
		\$	\$
CURRENT ASSETS			
Cash and cash equivalents	7	7,647,366	9,399,208
Trade receivables		966,912	1,083,163
Other financial assets at amortised cost		42,602	21,950
Other current assets		5,514	0
Inventories		32,574	14,565
TOTAL CURRENT ASSETS		8,694,968	10,518,887
NON-CURRENT ASSETS			
Other financial assets at amortised cost		170,113	215,202
Trade receivables		50,124	0
Land		2,903,000	2,903,000
Buildings and improvements		29,775,900	29,095,675
Furniture and equipment		796,707	736,376
Plant and equipment		3,645,180	3,283,921
Right of use assets		89,542	63,907
Infrastructure		247,954,139	249,621,398
TOTAL NON-CURRENT ASSETS		285,384,705	285,919,479
TOTAL ASSETS		294,079,673	296,438,366
CURRENT LIABILITIES			
Trade and other payables		(1,088,748)	(96,706)
Contract liabilities		(458,071)	(836,789)
Lease liabilities		(40,530)	(13,760)
Borrowings		(112,406)	(58,382)
Employee related provisions		(673,805)	(452,362)
TOTAL CURRENT LIABILITIES		(2,373,560)	(1,458,000)
NON-CURRENT LIABILITIES			
Lease liabilities		(49,619)	(49,619)
Borrowings		(157,012)	(202,101)
Employee related provisions		(122,432)	(122,432)
Other provisions		0	0
TOTAL NON-CURRENT LIABILITIES		(329,062)	(374,151)
TOTAL LIABILITIES		(2,702,622)	(1,832,152)
TOTAL NET ASSETS		291,377,051	294,606,214
EQUITY			
Retained earnings		(197,037,451)	(200,249,690)
Reserves - cash backed	8	(5,692,576)	(5,709,499)
Revaluation surplus		(88,647,025)	(88,647,025)
TOTAL EQUITY		291,377,051	294,606,214

This statement is to be read in conjunction with the accompanying notes.

SHIRE OF DANDARAGAN
STATEMENT OF COMPREHENSIVE INCOME by Nature or Type
as at 31 January 2021

	Note	Budget 2020/2021	Y-T-D Budget 2020/2021	Actual 2020/2021
		\$	\$	\$
Revenue				
Rates	6	6,300,242	6,301,235	6,326,369
Operating grants, subsidies and contributions		1,208,418	737,074	813,674
Fees and charges		2,315,079	1,877,651	1,958,056
Interest earnings		22,000	12,250	19,636
Other revenue		121,773	61,634	65,355
		9,967,512	8,989,844	9,183,090
Expenses				
Employee costs		(4,047,580)	(2,053,335)	(1,984,664)
Materials and contracts		(2,753,108)	(1,596,842)	(1,416,071)
Utilities		(459,742)	(264,498)	(238,843)
Insurance		(420,188)	(420,189)	(421,075)
Other expenses		(753,722)	(407,810)	(437,096)
Depreciation		(6,308,988)	(3,447,201)	(3,418,719)
		(14,743,328)	(8,189,875)	(7,916,468)
		(4,775,816)	799,969	1,266,622
Borrowing costs expense	4	(23,378)	(14,790)	(2,625)
Grants & Subsidies (towards non-operating activities)		7,193,247	5,490,593	1,965,165
Fair Value adjustment through profit and loss		0	0	0
Profit / Loss on Disposal of Assets	3	0	0	0
Net result		2,394,053	6,275,773	3,229,163
Other comprehensive income				
Changes on revaluation of non-current assets		0	0	0
Total other comprehensive income		0	0	0
Total comprehensive income		2,394,053	6,275,773	3,229,163

This statement is to be read in conjunction with the accompanying notes

SHIRE OF DANDARAGAN
STATEMENT OF COMPREHENSIVE INCOME by Department
as at 31 January 2021

	Note	Budget 2020/2021	Y-T-D Budget 2020/2021	Actual 2020/2021
		\$	\$	\$
Governance		78,168	16,527	12,759
General purpose funding		7,039,694	6,672,811	6,717,768
Law, order & public safety		405,503	399,601	384,057
Health		4,290	2,200	36,461
Education & welfare		10,500	0	0
Community amenities		1,359,940	1,149,039	1,151,254
Recreation and culture		427,586	249,332	278,238
Transport		276,093	258,907	281,438
Economic services		229,166	155,741	168,086
Other property and services		136,571	85,686	153,030
		9,967,512	8,989,844	9,183,090
Expenses excluding finance costs				
Governance		(634,346)	(309,914)	(305,466)
General purpose funding		(197,086)	(107,263)	(100,360)
Law, order & public safety		(1,343,921)	(720,187)	(737,918)
Health		(321,579)	(170,697)	(165,355)
Education & welfare		(106,984)	(35,586)	(31,920)
Community amenities		(2,262,988)	(1,304,894)	(1,257,101)
Recreation and culture		(3,142,356)	(1,880,126)	(1,727,976)
Transport		(5,397,208)	(3,137,972)	(3,145,908)
Economic services		(726,692)	(404,767)	(366,722)
Other property and services		(610,169)	(118,469)	(77,743)
		(14,743,328)	(8,189,875)	(7,916,468)
		(4,775,816)	799,969	1,266,622
Finance costs				
Governance		(8,413)	(4,798)	(1,495)
Law, order & public safety		(135)	(79)	(105)
Education & welfare		(3,375)	0	0
Recreation and culture		(2,378)	(1,475)	(699)
Transport		0	0	(98)
Other property and services		(9,076)	(8,438)	(228)
		(23,378)	(14,790)	(2,625)
Non- operating grants and subsidies				
Health		2,000	2,000	0
Recreation and culture		1,702,654	0	0
Transport		5,483,593	5,483,593	1,965,165
Economic services		5,000	5,000	0
		7,193,247	5,490,593	1,965,165
Profit / (loss) on asset disposal				
		0	0	0
Net result		2,394,053	6,275,773	3,229,163
Other comprehensive income				
Changes on revaluation of non-current assets		0	0	0
Total other comprehensive income		0	0	0
Total comprehensive income		2,394,053	6,275,773	3,229,163

This statement is to be read in conjunction with the accompanying notes

SHIRE OF DANDARAGAN
STATEMENT OF CHANGES IN EQUITY
as at 31 January 2021

Note	Retained Surplus	Reserves Cash Backed	Revaluation Surplus	Total Equity
	\$	\$	\$	\$
Balance as at 30 June 2020	197,037,451	5,692,576	88,647,025	291,377,051
Comprehensive Income				
Net result	3,229,163	0	0	3,229,163
Changes on revaluation of non-current assets	0	0	0	0
Total comprehensive income	3,229,163	0	0	3,229,163
Transfers from/(to) reserves	(16,923)	16,923	0	0
Balance as at 31 January 2021	200,249,690	5,709,499	88,647,025	294,606,214

This statement is to be read in conjunction with the accompanying notes.

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

2 DETAILED ACQUISITION

Description	FA#	LOCN	Schedule	Total	Land & Buildings \$	Plant & Equipment \$	Furniture & Equipment \$	Parks & Reserves \$	Roads \$	Other \$
Soft Conferencing additions		180009	Governance	7,107	7,200		7,107	7,200		
Community Noticeboard - Other - RenewalSLK-		130064	Governance	0	100,000					100,000
JBAdmin Emerg. lighting test circuit		150180	Governance	696	1,000	696	1,000			
Shredder			Governance	0	5,000					5,000
Switches / Antennas and Access Points			Governance	0	49,592					49,592
Generator - Wellness		160013	Health	0	7,000		7,000			
Dandaragan House (GROH)		150196	Education & Welfare	18,600	540,000	18,600	540,000			
JBFRCP ground remodel & refurb Wet area		150220	Education & Welfare	15,114	31,096	15,114	31,096			
Dand cemetery wing walls		130054	Community Amenities	5,136	4,000	5,136	4,000			
FRC Emerg. lighting test circuit		150182	Community Amenities	887	1,000	887	1,000			
FRC Softfall		150195	Community Amenities	11,472		11,472				
DandCRC Emerg. lighting test circuit		150187	Community Amenities	2,689	2,689	2,689	2,689			
CCC renewal -carryover		150129	Recreation & Culture	54,311	53,613	54,311	53,613			
key revision at CCC exist hall doors		150178	Recreation & Culture	314	14,796	314	14,796			
Civic Cnt. Emerg. lighting test circuit		150181	Recreation & Culture	320	320	320	320			
JSRC Emerg. lighting test circuit		150183	Recreation & Culture	1,205	1,064	1,205	1,064			
DCC Emerg. lighting test circuit		150184	Recreation & Culture	2,089	2,089	2,089	2,089			
BCC Emerg. lighting test circuit		150185	Recreation & Culture	437	1,000	437	1,000			
CCC Emerg. lighting test circuit		150186	Recreation & Culture	320	320	320	320			
BCC re-roof carryover		150193	Recreation & Culture	27,750	31,500	27,750	31,500			
CCRC noise / doors		150209	Recreation & Culture	0	40,000		40,000			
BCC roof support for solar panels		150218	Recreation & Culture	81	20,000	81	20,000			
Amphitheatre screen modifications		150221	Recreation & Culture	0	5,200		5,200			
2 York St - Budget Amendment 20200924 9.1.3		150225		17,390	23,630	17,390	23,630			
Fshore Pathways		110064	Recreation & Culture	74,896	200,000					74,896
Jurien Irrigation Project - Other - NewSLK-		120094	Recreation & Culture	3,947	104,183			3,947	104,183	
Badgingarra Tree Replacement - Other - RenewalSLK-		120096	Recreation & Culture	32,001	25,794			32,001	25,794	
Dand. Landscaping/fence etc		120097	Recreation & Culture	7,899	25,000			7,899	25,000	
JB Picnic Area		120098	Recreation & Culture	15,239	150,000			15,239	150,000	
Faunt. Power Upgrade		120099	Recreation & Culture	2,028	60,000			2,028	60,000	
Container Bar Platform		120100	Recreation & Culture	3,278	165,000			3,278	165,000	
Beschridge Swales - Other - RenewalSLK-		130041	Recreation & Culture	0	30,000					30,000
Dand. BMX Pump		130066	Recreation & Culture	0	100,000					100,000
Dand. Public Art		130067	Recreation & Culture	4,500	50,000					4,500
JB Youth Precinct		130068	Recreation & Culture	273,230	1,200,000					273,230
Badgingarra Cricket Nets		130069	Recreation & Culture	14,620	15,000					14,620
Ablution Pavillion		150208	Recreation & Culture	38,348	750,000	38,348	750,000			
COVID Community Building Program		150216	Recreation & Culture	26,081	74,559	26,081	74,559			
Fshore Playground		180007	Recreation & Culture	2,028	250,000		2,028	250,000		
C/O Cervantes TV-Replace tower and antenna		130060	Recreation & Culture	40,890	67,917					40,890
Coastal Fencing project - Other - RenewalSLK-		130063	Recreation & Culture	2,520	80,000					2,520
Civic Centre Fit-Out		180008	Recreation & Culture	7,715	29,755		7,715	29,755		
Casuarina Crescent - Other - NewSLK-		110057	Transport	24,983	37,080					24,983
Eucalypt Way - Other - NewSLK-		110058	Transport	39,043	48,720					39,043
Turquoise Way - Other - RenewalSLK-		110059	Transport	112,079	108,750					112,079
Turquoise Way - Other - NewSLK-		110060	Transport	146	150,000					146
JB Footpaths - Other - NewSLK-		110061	Transport	62,095	105,000					62,095
Cervantes Footpaths - Other - NewSLK-		110063	Transport	78,520	114,275					78,520
Bashford Street - Other - RenewalSLK-		110065	Transport	43	80,000					43
CCC Carpark - Other - RenewalSLK-		130061	Transport	62,797	156,725					62,797
Badgingarra Truck bay - Other - RenewalSLK-		130062	Transport	240,997	260,000					240,997
Munbinea Road Bridge - Other - RenewalSLK-		130073	Transport	0	394,000					394,000
Munbinea Road - Gravel ResheetSLK0-4		MGR004	Transport	0	109,555				109,555	
Cadda Road - Gravel ResheetSLK18.4-22.4		MGR009	Transport	0	109,555				109,555	
Kayanaba Road - Gravel ResheetSLK14.7-18.37		MGR034	Transport	0	69,778				69,778	
Wandawallah Road - Gravel ResheetSLK8-12		MGR045	Transport	0	109,555				109,555	
Black Arrow Road - Gravel ResheetSLK14.7-18.7		MGR052	Transport	0	95,555				95,555	
Wongonderrah Road - Gravel ResheetSLK11.2-15.2		MGR062	Transport	0	109,555				109,555	
Sandy Cape - ReconstructionSLK6.15-6.9		MGR127	Transport	0	170,000				170,000	
Airstrip Road - SealingSLK0-1		MUC148	Transport	0	29,000				29,000	
NorthWest Road - ReconstructionSLK-		RCR005	Transport	0	6,362				6,362	
Yerramullah Road - Gravel ResheetSLK-		RCR022	Transport	93,781	62,924			93,781	62,924	
Watheroo West Road - Other - NewSLK10.74-42		ROS008	Transport	8,117	93,780			8,117	93,780	
Watheroo West Road - Other - NewSLK0-8.11		ROS008A	Transport	0	24,330				24,330	
Jurien East Road - ReconstructionSLK14.5-23.5		ROS856	Transport	2,155,319	2,253,213			2,155,319	2,253,213	

Cataby Road - ReconstructionSLK0-3	RRG001	Transport	98,624	448,953										98,624	448,953		
Cataby Road - ReconstructionSLK6-9	RRG001A	Transport	10,244	577,487										10,244	577,487		
Dandaragan Road - SealingSLK26-28.8	RRG002	Transport	8,168	101,250										8,168	101,250		
Jurien East Road - SealingSLK12-14.5	RRG856	Transport	0	102,220											102,220		
Cantabilling Road - Gravel ResheetSLK22.1-26.1	RTR047	Transport	0	146,454											146,454		
Cockleshell Gully - Gravel ResheetSLK13.8-15.9	RTR051	Transport	53,070	89,803										53,070	89,803		
Roberts Street - ReconstructionSLK0-0.25	RTR073	Transport	18,787	270,000										18,787	270,000		
Hansen Bay Road - SealingSLK0-1	RTR226	Transport	77,687	123,741										77,687	123,741		
Jurien East Road - ReconstructionSLK-	SBS856	Transport	0	70,000										0	70,000		
Jurien Bay EW Runway - Other - NewSLK-	I30065	Transport	30,888	650,000												30,888	650,000
Taxiways	I30072	Transport	9,824	80,000												9,824	80,000
Arrival Centre	I50215	Transport	0	177,071			177,071										
Dest.Market. Shire Entry Signs	I30070	Economic Services	0	14,000													14,000
Dest.Market. Jurien Townsite Precinct Signs	I30071	Economic Services	58,176	52,000												58,176	52,000
Total			3,958,527	11,920,008	223,240	1,774,947	0	7,000	16,850	341,547	64,393	529,977	2,523,797	5,173,070	1,130,247	4,093,467	

CAPITALISED 7,107
WIP 3,951,420
TOTAL 3,958,527

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

3 ASSET DISPOSAL AND CHANGEOVER

Description	Proceeds from Sale		Cost of Replacement		Net Cost for Change Over		Written Down Value		Profit/(Loss) on Disposal	
	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget
FA2995 - Wagon - Mazda CX5 Maxx DN016	\$	\$			\$	\$		\$	0	\$
FA3091 - Wagon - Mazda CX5 Maxx DN032		16,800						16,800	0	0
	0	33,600	0	0	0	0	0	33,600	0	0

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

4 INFORMATION ON BORROWINGS

(a) Borrowing repayments

Movement in borrowings and interest between the beginning and the end of the current financial year.

	Outstanding 1-Jul-20	New loans		Interest repayments		Principal repayments		Outstanding for the year ending 30 June
		2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	2019/2020 Actual	2019/2020 Budget	
Governance								
Loan 127	147,805	0	0	4,102	7,219	35,448	71,880	75,925
Education and Welfare								
Loan 136			540,000		3,375		25,432	514,568
Recreation and culture								
New loan - 137			750,000		7,746		15,238	734,762
	147,805	0	1,290,000	4,102	18,340	35,448	112,550	1,325,255
Self Supporting Loans								
Recreation and culture								
Loan 130	48,162	0	0	1,190	2,093	11,604	23,494	24,668
Loan 131	3,183	0	0	43	43	3,183	3,183	0
Loan 132	3,603	0	0	43	43	3,603	3,603	0
Loan 133	43,374	0	0	538	1,034	3,375	6,791	36,583
Loan 134	23,290		0	154	296	1,722	3,455	19,835
Loan 135		50,000	50,000		200		4,911	45,089
	121,612	50,000	50,000	1,966	3,709	23,486	45,437	126,175
	269,417	50,000	1,340,000	6,068	22,049	58,934	157,987	1,451,430
Cash Advance Repayment								
Recreation and culture								
Cervantes Bowling Club	2,076	0	0	0	0	2,076	2,076	0
	2,076	0	0	0	0	2,076	2,076	0

All borrowing repayments, other than self supporting loans, will be financed by general purpose revenue.

The self supporting loan(s) repayment will be fully reimbursed.

The self supporting loan(s) repayment will be fully reimbursed.

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

5. NET CURRENT ASSETS

	Note	2020	2021
		\$	\$
Composition of estimated net current assets			
Current assets			
Cash - unrestricted		1,954,791	3,689,709
Cash - restricted reserves	8	5,692,576	5,709,499
Receivables		1,015,028	1,105,113
Inventories		32,574	14,565
		<u>8,694,968</u>	<u>10,518,887</u>
Less: current liabilities			
Trade, other payables and provisions		(2,261,154)	(1,399,618)
Long term borrowings		(112,406)	(58,382)
		<u>(2,373,560)</u>	<u>(1,458,000)</u>
Unadjusted net current assets		6,321,408	9,060,886
Adjustments			
Less: Cash - restricted reserves	8	(5,692,576)	(5,709,499)
Less: Loans receivable - clubs/institutions		(42,602)	(21,950)
Add: Right of use lease liability		40,530	13,760
Add: Current portion of borrowings		112,406	58,382
Adjusted net current assets - surplus/(deficit)		<u>739,166</u>	<u>3,401,579</u>
Budget Adjustment			
Add: Provisions		673,805	452,362
Budget surplus/(deficit)		<u>1,412,971</u>	<u>3,853,942</u>

Reason for Adjustments

The differences between the net current assets at the end of each financial year in the rate setting statement and adjusted net current assets detailed above arise from amounts which have been excluded when calculating the budget deficiency in accordance with Local Government (Financial Management) Regulation 32 as movements for these items have been funded within the budget estimates. These differences are disclosed as adjustments above.

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

6 RATES AND SERVICE CHARGES

(a) Rating Information

RATE TYPE	Rate in	Number of properties	Rateable value	rate revenue	Budget 2020/2021			Actual 2020/2021		
					interim rates	back rates	total revenue	rate revenue	interim rates	back rates
	\$		\$	\$	\$	\$	\$	\$	\$	\$
General rate										
Gross rental valuations										
GRV - General	8.0156	1,884	31,764,066	2,528,082	0	0	2,528,082	2,546,082	10,621	2,556,703
Unimproved valuations										
UV - General	0.6955	520	405,363,396	2,836,184	0		2,836,184	2,836,184	2,662	2,838,846
Sub-Totals		2,404	437,127,462	5,364,266	0	0	5,364,266	5,382,266	13,284	5,395,549
Minimum	\$									
Minimum payment										
Gross rental valuations										
GRV - General	947	978	5,340,701	926,166	0	0	926,166	926,166		926,166
GRV - Lesser (Dandaragan & Badgingarra)	715	28	118,192	20,020	0	0	20,020	20,020		20,020
Unimproved valuations										
UV - Mining	894	77	1,612,271	68,838	0	0	68,838	68,838		68,838
UV - Lesser	715	223	17,484,600	159,445	0	0	159,445	159,445		159,445
Sub-Totals		1,306	24,555,764	1,174,469	0	0	1,174,469	1,174,469		1,174,469
		3,710	461,683,226	6,538,735	0	0	6,538,735	6,556,735		6,570,018
Discount refer (note 1 (c))							(240,000)			(243,650)
Total amount raised from general rates							6,298,735			6,326,368
Ex Gratia Rates							1,507			0
Total rates							6,300,242			6,326,368

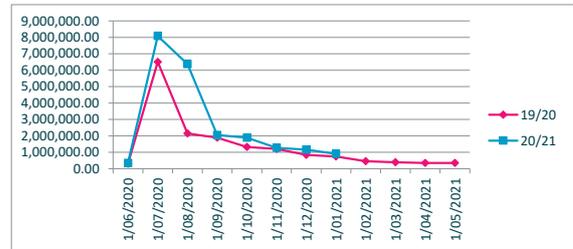
NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

7 CASH, INVESTMENTS & RECEIVABLES

Note	2020	2021
	\$	\$
Cash And Cash Equivalents		
Unrestricted	1,653,919	3,689,709
Restricted	5,821,414	5,709,499
	<u>7,475,333</u>	<u>9,399,208</u>
Receivables		
Rates outstanding	352,891	907,632
Sundry debtors	428,031	176,867
GST receivable	(0)	(0)
	<u>498,715</u>	<u>1,084,498</u>

Rates Outstanding

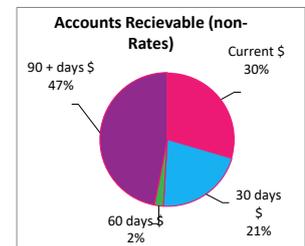
	YTD	30-Jun-20
Opening Arrears Previous Years	352,891	274,006
Levied this Year	7,763,596	7,762,858
Less Collections to date	- 7,208,856	- 7,683,973
Equals Current Outstanding	907,632	352,891
Net Rates Collectable	907,632	352,891
% Collected	88.82	95.61



Sundry Debtors

	Current	30 days	60 days	90 + days
	\$	\$	\$	\$
Receivables General	52,261.90	37,810.72	3,797.99	82,995.95
Total Receivables General Outstanding				<u>176,866.56</u>

Amounts shown above include GST (where applicable)



NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

8 CASH BACKED RESERVES

(a) Cash Backed Reserves - Movement

	Opening Balance	Budget Transfer to	Transfer (from)	In Use Adjustment	Closing Balance
	\$	\$	\$		\$
Plant Reserve	254,398	756			255,155
Building Renewal Reserve	790,929	2,351			793,280
Rubbish Reserve	434,007	1,290			435,297
Community Centre Reserve	387,494	1,152			388,646
Television Services Reserve	97,728	291			98,019
Information Technology Reserve Reserve	57,018	170			57,187
Land Development Reserve	70,662	210			70,872
Parking Requirements (Lot 1154 Sandpiper Street) Reserve	11,405	34			11,439
Parks and Recreation Grounds Development (Seagate) Reserve	376,292	1,119			377,410
Sport and Recreation Reserve	310,643	924			311,567
Landscaping Reserve	2,647	8			2,655
Aerodrome Reserve	129,177	384			129,562
Public Open Space Renewal Reserve	558,221	1,660			559,880
Infrastructure Renewal Reserve	811,987	2,414			814,401
Public Open Space Construction Reserve	112,904	336			113,240
Infrastructure Construction Reserve	62,338	185			62,523
Building Construction Reserve	116,191	345			116,537
Leave Reserve	260,204	774			260,978
Economic Development Initiatives Reserve	794,068	2,361			796,429
Turquoise Way Path Reserve	51,766	154			51,920
Cash in lieu of landscaping – Lot 1146 Sandpiper Street Reserve	2,495	7			2,502
	5,692,576	16,923	0	0	5,709,499

**NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021**

9 TRUST FUNDS

Funds held at balance date over which the local government has no control and which are not included in the financial statements are as follows:

Trust Fund

Detail

Cash In Lieu POS - L9000 Valencia

	Balance	Movements		Balance
	30-Jun-20	Inwards	Outwards	as at 31 January 2021
	\$	\$		\$
	200,277			200,277
	200,277	0	0	200,277

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

10 BUDGET AMMENDMENTS

Description	Council Resolution	Schedule	Classification	Non-Cash		Amended Budget Running Balance	
				Adjustment	Increase in cash available		
Budget Adoption						Opening Surplus	9,068
Permanent Changes							
Staff housing refurbishment - 2 York St Jurien Bay	20200824 9.1.3	Building Reserve	Balance Sheet	23,630			
Jurien Sport & Recreation roof repairs	20201022 9.1.2	Building Reserve	Balance Sheet	50,000			
Jurien Bay Golf Club Irrigation Project	20200827 9.1.3						
				73,630	0	0	
						0	

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

11 GRANTS & CONTRIBUTIONS

Program / Details	Grant Provider	In Advance payments	Budget 2020/21	2019 / 20 Budget Amendments	Received	Recoup Status		
						Revenue/ Expenditure	Liability	Not Received
						\$	\$	\$
Operating								
Other General Purpose Income								
Grants Commission - General	WALGGS	351,640	357,330		181,127	181,127		176203.50
Grants Commission - Roads	WALGGS	685,664	350,822		179,110	179,110		171712.50
Fire Prevention								
ESL Operating Grant	FESA		50,000		42,493	35,441	7,052	7507.50
Other Welfare								
Spray the Grey Grant Estimate	Healthway		10,500		10,500		10,500	0.00
Swimming Areas and Beaches								
CHRMAP			30,000					30000.00
Streets Roads Bridges Depots Maint								
MRWA Direct Grant	MRWA		249,865		249,865	249,865		0.00
Street Light Subsidy			3,400		3,538	3,538		-137.56
Tourism & Area Promotion								
Dest.Market Indust Contribution to website			10,000					10000.00
		1,037,304	1,061,917	-	666,631	649,080	17,552	395,286
Non-Operating								
Other Health								
Generator - Practice contribution			2,000					2,000
Other Recreation and Sport								
Badgingarra Cricket Nets BCA contribution			5,000					5,000
JB Youth Precinct	LotteryWest Grant		1,127,654					1,127,654
Dand. Landscaping/fence etc	Federal Drought		25,000					25,000
JB Picnic Area	Federal Drought		150,000					150,000
Faunt. Power Upgrade	Federal Drought		60,000					60,000
Dand. BMX Pump	Federal Drought		100,000					100,000
Dand. Public Art	Federal Drought		50,000					50,000
Badgingarra Cricket Nets	CSRFF Grant		40,000					40,000
Public Halls & Civic Centre								
CCRC noise / doors	Federal Drought		5,000					5,000
Television and Radio Rebroadcast								
Coastal Fencing Project	Planning Commission		40,000					40,000
Streets Roads Bridges Depots Maint								
Regional Road Group RRG	RRG		642,968		257,721	117,036	140,685	385,247
Commodity Route Funding	SCR		93,127		43,687	43,687	-	49,440
SBS Grant	SBS		115,334					115,334
RED Grant	RED		100,000					100,000
DoT Dual Use Path	DoT		141,750		28,350	28,350	-	113,400
WALGGC - Special Projects	WALGGS		394,000		394,000		394,000	-
WSFN	WSFN		2,203,569		1,671,466	1,671,466	-	532,103
RTR Grant	RTR		554,113		73,739	73,739	-	480,374
JB Footpaths	Federal Drought		150,000					150,000
CCC Carpark	Federal Drought		150,000					150,000
Badgingarra Truck bay	Federal Drought		235,000					235,000
Aragon Street Design	Federal Drought		40,000					40,000
Airfields								
RAP Grant	RAP		172,803		19,975		19,975	152,828
Local Roads and Comm Inf			590,929		295,465	30,888	264,578	295,464
Tourism & Area Promotion								
Dest.Market Indust Contribution to website			5,000					5,000
		7,193,247	7,193,247	-	2,784,403	1,965,165	819,238	4,408,844
		1,037,304	8,255,165	-	3,451,034	2,614,245	836,789	4,804,130.30

NOTES TO AND FORMING PART OF THE MONTHLY STATEMENTS
as at 31 January 2021

12 VARIANCES

Reporting Program	Var \$	Var %	Var	Timing / Permanent	Explanation of Variance
Operating Revenue					
Governance	(3,768)	77%	▼		
General Purpose Funding	19,823	105%	▲		
Law, Order & Public Safety	(15,544)	96%	▼		
Health	34,261	1657%	▲	Permanent	Unbudgeted Increase in Home Occupations, Lodging Houses & Food Reg's, Health Services to third parti
Education and Welfare	0	100%	▲		
Community Ammenities	2,215	100%	▲		
Recreation and Culture	28,906	112%	▲	Permanent	Unbudgeted Insurance claims
Transport	22,531	109%	▲		
Economic Services	12,345	108%	▲		
Other Property and Services	67,345	179%	▲	Permanent	Private works - Seal Lake Thetis Road
Operating Expenses					
Governance	7,751	98%	▲		
General Purpose Funding	6,904	94%	▲		
Law, Order & Public Safety	(17,757)	102%	▼		
Health	5,342	97%	▲		
Education and Welfare	3,666	90%	▲		
Community Ammenities	47,792	96%	▲		
Recreation and Culture	152,926	92%	▲		
Transport	(8,033)	100%	▼		
Economic Services	38,045	91%	▲		
Other Property and Services	48,937	61%	▲	Permanent	Private works - Seal Lake Thetis Road

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Coalara Feedlot Document Control

Project code: 20200730
Issued by: Dean Ryan
Date of Final Doc: 11 December 2020
File Name: CoalaraEA2019Rev0

Disclaimer

Care is taken to ensure the accuracy of the information contained in this document. However, SBS has been supplied with certain information by the proponent and therefore does not accept responsibility for the accuracy or completeness of information contained in the document.

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Abstract

This Environmental Assessment is the principle document in support of a proposal by Central Stockcare Pty Ltd (CSC hereon) to establish an 8000 'Standard Cattle Units' (SCU hereon) feedlot on the property "Sendem Downs", 2530 Coalara Rd, Badgingarra, Western Australia.

This assessment addresses the Department of Water and Environmental Regulations 1987 (DWER) requirements in respect of licencing and the works approval application to gain necessary approvals and licences to construct and operate a feedlot on the "Sendem Downs" property. The feedlot will be named "COALARA Feedlot".

The climate and physical assets of the site were found to be suitable to sustain a feedlot of the scale proposed by the proponent.

The proponent has been issued a DWER groundwater licence to take 2,250,950kL from the Jurien Perth – Leederville - Parmelia resource.

The groundwater licence number is GWL205125(1) and authorises, among other things, the activity of intensive stockwatering and dust suppression for earthworks and construction purposes.

The proponent is lodging a Works Approval Application seeking a Works Approval under the following category of the EP Act 1986:

- Category 68 – Cattle feedlots; 500+ head and more than 100 m from watercourse

The proponent seeks Works Approval for a staged development over 60 months (5 years).

At the completion of construction of each stage and having achieved compliance with the Works Approval, the proponent will seek an operating licence under EP Regulation 1987, Category 68, to operate the facility at the capacity of the completed stage. The staging proposal is:

- Stage 1: Licence to stand up to 4,000 SCU in 24 months from Works Approval
- Stage 2: Licence to stand up to 6,000 SCU in 36 months from Works Approval
- Stage 3: Licence to stand up to 8,000 SCU in 60 months from Works Approval

The proponent proposes exemption from licencing under the following category of the EP Act 1986:

- Category 67A – Commercial compost or blended soil; 1000+ tonnes stored on premises

The proponent has sufficient crop land on the premises and associated adjoining agricultural holdings to sustainably utilise all manure/compost produced in the feedlot operations. No sales of manure or compost will be necessary to sustain the feedlot operations. Therefore, "commercial" quantities of manure or compost will not apply to the premises even though it is calculated that the design capacity of the category will be exceeded.

Executive summary

This Environmental Assessment is the principle document in support of a proposal by Central Stockcare Pty Ltd (CSC hereon) to establish an 8,000 SCU feedlot on the property "Sendem Downs", 2530 Coalara Rd, Badgingarra, Western Australia.

This assessment addresses the Department of Water and Environmental Regulation (DWER) requirements in respect of licencing and works approvals to gain necessary approvals and licences to construct and operate a feedlot on the "Sendem Downs" property.

A significant number of alternative properties and existing feedlots were considered by CSC prior to settling on developing a proposal for a feedlot on the "Sendem Downs" property.

The climate and physical assets of the site were assessed by soil, water and feedlot operation experts and the site was found to be suitable to sustain a feedlot of the scale proposed by the proponent. The remoteness of the site with large separation distance to receptors made the assessment of environmental defensibility less complex than for many other feedlot developments.

The original proposed site for the feedlot was set 200 metres to the south of the layout detailed in this Environmental Assessment (EA hereon). Based on research conducted in the construction of 6 soil pits on the proposed premises, the feedlot feedyard footprint was moved to the north, and length of rows was reduced, to avoid areas of sand revealed in test pits 1 & 2. All other test pits encountered solid subgrade at less than 1.2 metres.

Possible impacts of the feedlot were modelled and mitigations to meet current guidelines and regulations were developed where relevant and as required.

Matters of significant environmental importance considered in the process of this assessment were:

- Proximity to neighbours
- Risk to groundwater

The features of the selected site deliver natural defensibility for several key areas of potential environmental hazard. Consequently, this Environmental Assessment does not labour the point for low-risk aspects of the proposed development.

A beef feedlot is a beef (meat) supply management system designed to take the cropland energy and protein harvested in two (2) months of the year (November and December in Australia) and meter that nutrient out over the other ten (10) months of the year. The system delivers thriving cattle at optimal age for slaughter that produce repeatable, high eating quality meat all year around.

The primary purpose of this feedlot will be for growing and finishing prime beef cattle for slaughter in Western Australia. A feedlot of this size will generate gross sales exceeding \$50m/annum and value-add cattle and feedstuff produced in WA. Thirteen (13) people will be directly employed on a fulltime basis. Research indicates that the multiplier effect of a feedlot business on a state basis has been estimated at 3.8 to 1 for value-add and 5.6 to 1 for employment. Therefore, the feedlot will directly and indirectly create 73 jobs and generate turnover of \$190m/annum for the state of Western Australia.

Approximately \$12m of feedstuffs will be required per annum most of which will be produced in the local area.

Approximately \$30m of feeder cattle will be required per annum. All these cattle will be sourced in Western Australia.

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1 Introduction

1.1 Background

Central Stockcare Pty Ltd (CSC) is the owner of the property “Sendem Downs”. The property is 3035 hectares in area and is located 25 kilometres as the crow flies to the north-east of Badgingarra WA.

CSC operated a beef feedlot on the property “Springfield” in the Gingin Shire WA for more than 10 years. “Springfield” was sold to mining interests in 2019. CSC reached agreement to lease back the feedlot on “Springfield” from the mining company for a limited period.

CSC have planned to expand beef cattle feeding operations to produce slaughter cattle over the past 2 years and to that end commenced the search for a suitable feedlot site in 2018. Several properties and existing feedlots were considered prior to CSC settling on a location within the “Sendem Downs” property as the selected site for a feedlot development.

The proponent has retained the services of the consultant to design the feedlot and generate the documents required to gain approval to construct and operate the feedlot. The consultant has significant experience in the industry and the credentials of the officers of the consultant are listed in Appendix 1. The proponent has consulted widely with the Shire of Dandaragan officers and representatives of the key government agencies to generate the documentation required to gain approval for the development.

1.2 Applicant and property details

The details of the applicant are listed below and detailed in the ASIC registration in Appendix 15.

Name:	Central Stockcare Pty Ltd as Trustee for The Ryan Family Trust
ABN:	67 548 177 945
Property:	“Sendem Downs”
Address:	2530 Coalara Rd, Badgingarra, Western Australia

The land details on which the development is proposed are listed below and illustrated in Figure 2: Development site land area identification.

Premises Land Area:	15,497,886 m ² (1,550 hectares)
Shire Area:	Shire of Dandaragan
Locality:	BOOTHENDARRA
Land District:	Victoria
Lot:	10331
Deposit Plan:	206634

The central point GPS reference of the feedyard development is:

Zone: 50 J	Easting:	381605.02 m E
	Northing:	6654285.60 m S

The site elevation is:

Highest elevation:	300 m
Lowest elevation:	270 m

The applicants postal address and email are listed below.

Postal Address: "Echuca", Lot 43, Stock Road, BULLSBROOK, WA 6084
 Email Address: admin@centralstockcare.com
 Telephone: 08 95712946

The feedlot will be located on the northern half of the 3,035hectare "Sendem Downs" Property. The premises will be on the eastern side of the Coalara Road and the northern side of the Boothendarra Road. The subject land is currently zoned 'Rural' in accordance with the Shire of Dandaragan Town Planning Scheme. Beef cattle lot-feeding is permitted within this zone.

The area to the north, south and east is zoned Parks and Recreation (Watheroo National Park). Immediately to the west of the proposed site land is zoned "Rural".

1.3 Objectives of the development

The primary purpose of the feedlot will be for growing and finishing prime beef cattle for slaughter in Australia to be consumed on local and export markets.

A feedlot of this size will generate gross sales of more than \$40m/annum and value add cattle and feedstuff produced in WA. Thirteen (13) people will be directly employed on a fulltime basis. Research indicates that the multiplier effect of a feedlot business on a state basis has been estimated at 3.8 to 1 for value add and 5.6 for employment. (Yates, Sparke, Morison & Hughes 2002) Therefore, the feedlot will directly and indirectly create 73 jobs and generate additional economic activity of \$190m/annum in the State of Western Australia.

1.4 Feedlot site options considered and final selection

The proponent has fed cattle on the property "Springfield" at Gingin for 11 years. Experience gained at the Gingin feedlot has allowed the proponent to succinctly define the site and situation requirements for the new Central Stockcare (CSC hereon) operation.

Options considered prior to settling on Sendem Downs as the most suitable development site for CSC are listed below.

- Upgrade of "Springfield" feedlot to 8000 SCU – the maximum potential development capacity was deemed too small.
- Kalimpa Park Feedlot, Warradarge WA – constructed feedyard surfaces appeared to be not in accordance with The Guidelines or best practice.
- Mirambee Feedlot, Dubbo NSW – moving interstate did not best suit the business model.

1.5 Current land-use on Sendem Downs

The land on which the feedlot development is proposed is currently used for dryland cereal grain cropping, beef cattle breeder grazing on pasture and backgrounding of trade & live export cattle.

The Sendem Downs property contains a rural residence and associated farm infrastructure appropriate to current farming and grazing activity. The defined premises land area proposed

for the development (a sub-set area of Sendem Downs) has no rural residence and virtually no infrastructure, except for stock water supply and water tanks.

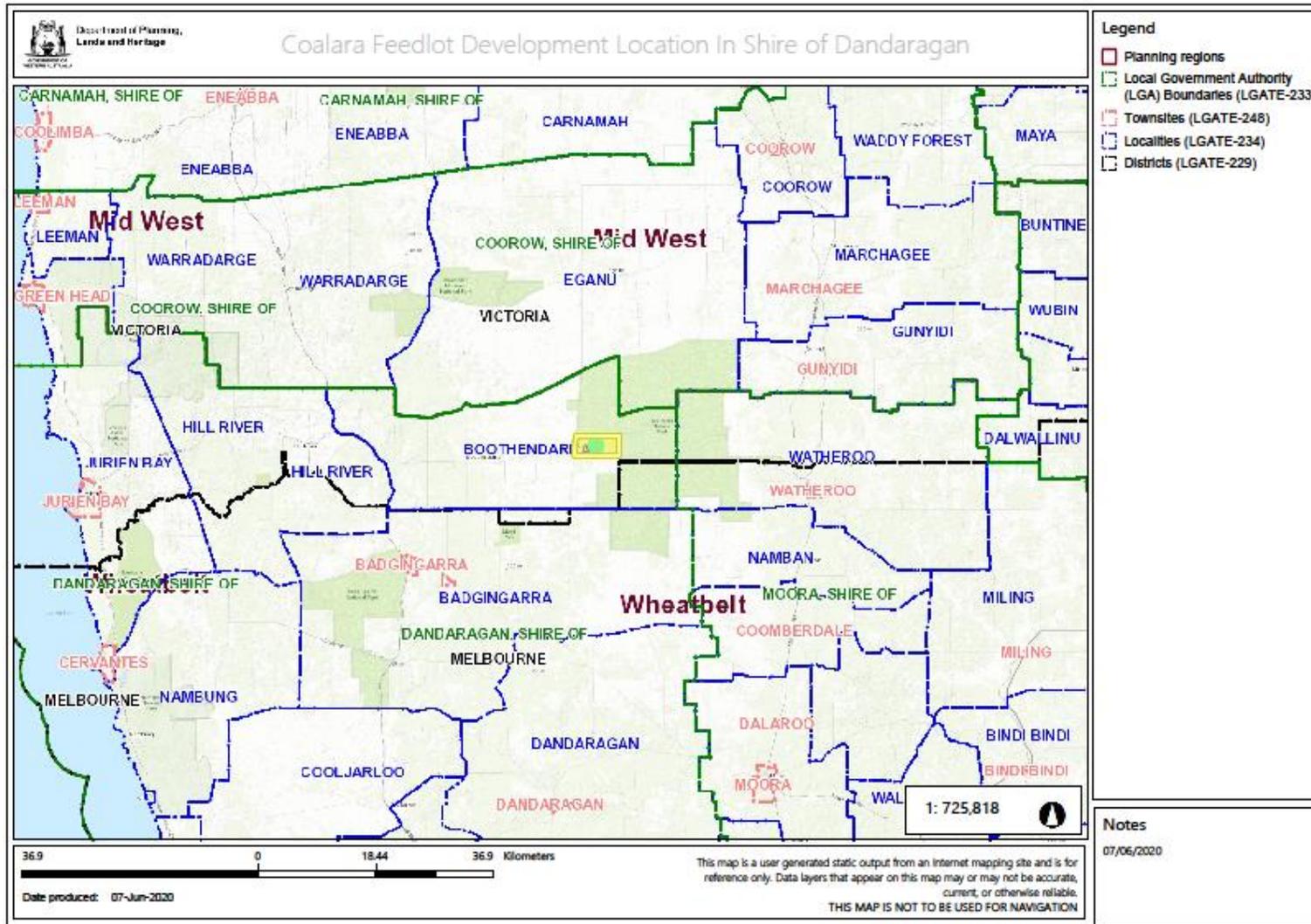


Figure 1: Proposed feedlot development locality

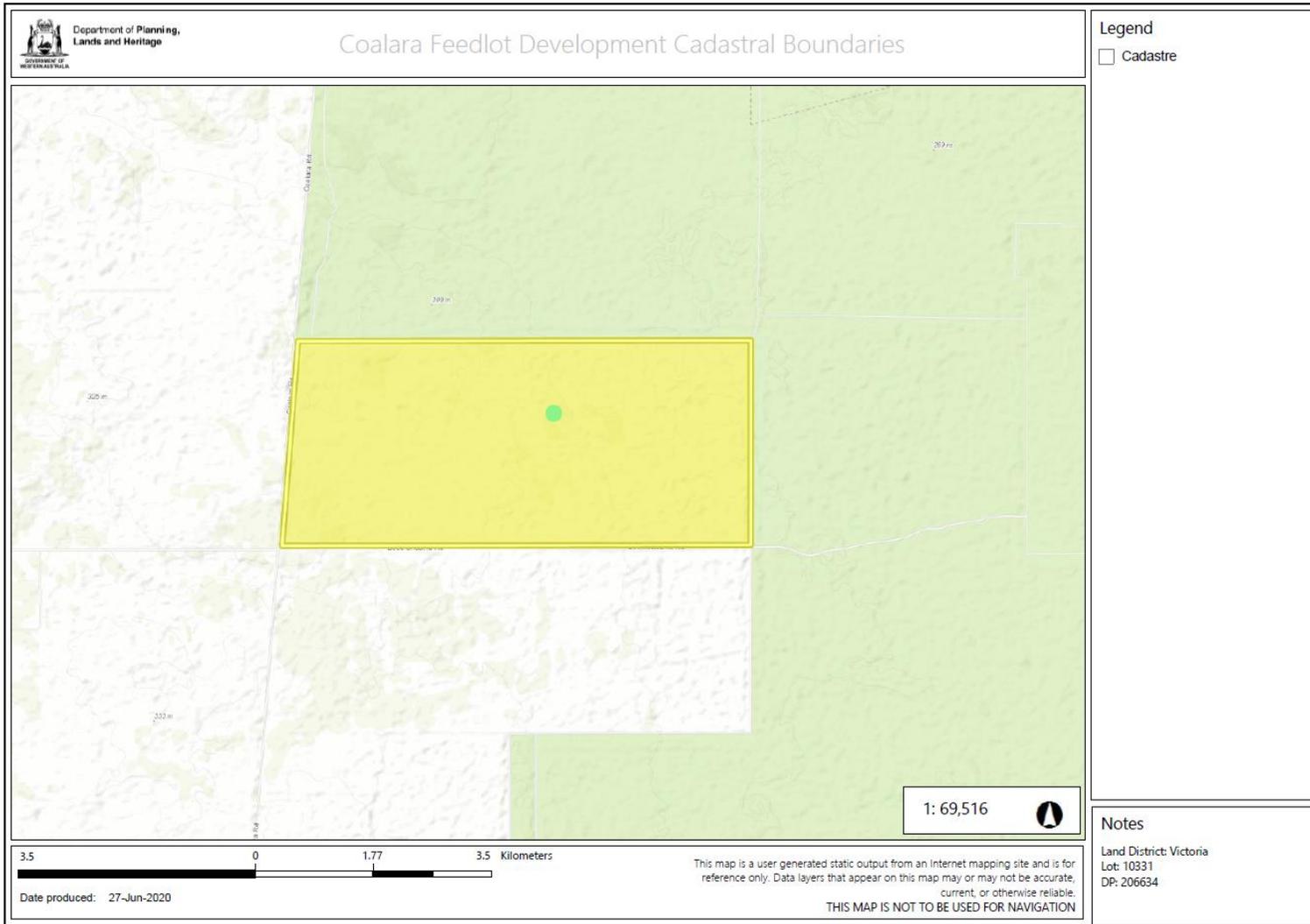


Figure 2: Development site land area identification

1.6 State & Local Government consultation

The proponent met with officers of the Shire of Dandaragan (SOD hereon) on 24 May 2019.

Those in attendance at the meeting were Brent Bailey CEO – Shire of Dandaragan, David Chidlow (Manager Planning SOD), Rory Mackay (Planning Officer SOD), Dean Ryan CSC and Peter Paradise SBS.

The scope of the proposal was outlined to the meeting and advice was sought on processes and procedures to be followed to have the development assessed and reach a decision for approval or otherwise.

The proponent advised Shire officers that the scale of the proposed feedlot development was 6,000 SCU (this was increased to 8,000 SCU by the proponent after this initial meeting) with a capital development budget of more than \$2m but less than \$10m.

Officers advised that on this basis the Shire of Dandaragan may decide the matter or refer it to a Joint Development Application Process which would be made up of the appropriate council officers and 3 to 4 invited experts in beef cattle feedlots.

The proposed feedlot site is in a location which falls under Category 68 of the Department of Water and Environmental Regulation (DWER hereon) Environmental Protection Regulations 1987 covering feedlots greater than 500 SCU with a greater distance than 100 metres from a defined watercourse.

Shire of Dandaragan will refer the proposal to other agencies for advice. The primary State Government referral bodies are:

- Department of Water and Environmental Regulation;
- Environmental Protection Authority;
- Department of Biodiversity, Conservation and Attractions;
- Department of Health; and
- Department of Primary Industries and Regional Development.

In addition to the meeting with officers of the Shire of Dandaragan (outline above) a feedlot scoping meeting (on Zoom due to Covid19) for the Coalara Feedlot was held by CSC representatives with Officers of DPIRD and the Wheatbelt Development Commission. Details of the meeting are tabled below.

Attendees to the meeting at Midday on 1st April 2020 were:

Claire Coffey – Development Officer - DPIRD
 Pat Page – Feedlot Specialist – Development Officer - DPIRD
 Daniel Waterhouse – Senior Regional Officer - Wheatbelt Development Commission
 Dean Ryan – CSC principal and proponent of Coalara Feedlot
 Peter Paradise – SBS feedlot advisory services

The participants exchanged contact details.

Key contacts to assist with Feedlot Development processes in DWER were identified. The key person in the feedlot area was identified as Caron Goodbourn – Manager, Process Industries, Regulatory Services, Bunbury.

Dean Ryan outlined the feedlot proposal and the scale and scope of the Coalara Feedlot development. The meeting was advised that the feedlot development was to be a maximum of 8000 SCU's.

DR outlined that the development would be staged with the initial establishment of 2 to 4000 SCU in stage 1, 6000 SCU in stage 2 and 8000 SCU in stage 3.

Site characteristics, general feedlot layout, cattle shade, milling options and the feed production irrigation element of the business model were outlined.

Claire Coffey of DPIRD outlined the process of completion of a Works Approval Application to DWER and the elements required to gain approval.

It was noted that an Environmental Assessment would be required and that the Environmental Assessment should be framed and informed by the requirements of the Works Approval Application form.

DPIRD advised that the Works Approval Application form had been recently updated and that the revision dated April 2020 form IR F09 was the appropriate form to complete.

Utilisation/disposal of the wastewater effluent was discussed. DPIRD advised that for the chosen site, evaporation ponds were the preferred effluent disposal option.

DPIRD outlined at length the key requirement to ensure that the evaporation ponds were lined with clay or an artificial liner to meet the National Feedlot Guideline Standards for infiltration of 1×10^{-9} m/s.

Options to achieve this objective were discussed in detail.

DPIRD advised that, if a pre-lodgement meeting was arranged with DWER to go through all the documentation and if all elements were covered, then the time from lodgement to completion of Departmental assessment would be 60 working days. Claire Coffee offered to email the key contact details in DWER to the proponent.

The proponent initiated and attended an online, pre-lodgement meeting with DWER and DPIRD representatives on 5th November 2020.

2 The application process

2.1 Documentation requirements

Environmental assessment documentation is framed by the DWER publications “Guidance statements – Decision-making” and “Guidance statements - Risk Assessments”. It is noted in guidance documentation that the DWER considers the National Guidelines for Beef Cattle Feedlot in Australia (MLA 2012) and the National Beef Cattle Feedlot Environmental Code of Practice (MLA 2012) are the most appropriate guidelines to inform its assessment of feedlot development applications.

This environmental assessment uses these documents to address the primary elements requiring explanation for the proposed development. In addition, the listed elements in the DWER Works Approval Application guided the format and layout of this environmental assessment document.

2.2 State regulations relevant to feedlot development

The Western Australian Government has streamlined its planning instruments in recent years. The primary regulations relating to feedlot developments are now:

- Environmental Protection Act 1986 (EP Act hereon)
- Environmental Protection Regulations 1987 (EP Regulations hereon)

The DWER EP Regulations schedule under which the feedlot operation falls is defined in the following Act:

- Rights in Water and Irrigation Act 1914.

Other Acts may be relevant however in addressing the requirements of the Acts listed above the requirements of other State law will be met.

2.2 Works Approval, Registration and Licence

Following approval and prior to commencement of the development, DWER will issue a works approval for construction, a registration of development and, after construction of works to the certified standards, a licence to operate under part V of the EP Act 1986.

3 Proposed feedlot development description

The feedlot will generally be constructed in accordance with the key industry guidelines:

- National Guidelines for Beef Cattle Feedlots in Australia 3rd ed (MLA 2012)
- National Beef Cattle Feedlot Environmental Code of Practice 2nd ed (MLA 2012)

3.1 Scope, size and scale of proposed feedlot development

Listed below are the general specifications for the Coalara Feedlot.

- 8,000 standard cattle units (SCU) (maximum design capacity)
- Stocking density 10.8 m²/SCU (maximum stocking density)
- Approximately northwest-southeast row alignment @333°
- Terraced layout with cut and fill to create effective drainage
- Head to toe feed alley-drainage configuration
- Approx. 3.0% "in pen" slope from bunk-line to drainage lines
- Approx. 0.5% to 1.0% south to north fall in drain reserve and feed roads

3.2 Staged development of the proposed feedlot

It is proposed that the development will take place in stages. The 3 stages of development are listed below and depicted in Appendix 2.

- **Stage 1** – Set up stock water supply, access roads, earthworks for 32 pens (2 rows) and construction (erection) of 32 pens (A & B Rows including all bunks, feedroads, cattle alleys, drains, 3 sed basins and stage 1 effluent holding pond.). Cattle receival-dispatch facilities will be constructed. A mill area concrete pad will be laid on the edge of where the Stage 3 shed will eventually stand. Silos, mill equipment and mobile plant will be relocated from Springfield to Sendem Downs. Facilities to feed up to 4,000 SCU will be established. Shade will be erected.
- **Stage 2** – Civil works, water supply extensions and erections for another 16 pens (C Row) will be undertaken including shade. The feedlot stocking capacity will be expanded to 6,000 SCU. Stage 2 effluent pond and stage 2 manure pad will be constructed.
- **Stage 3** – Civil works, water supply extensions and erections for another 16 pens (D Row) will be completed. Stocking capacity will be expanded to 8,000 SCU. Tempering configuration will be established for the mill and a commodity shed including bays will be constructed. Shade structures will be set up in feedlot feeding pens as construction of each row is completed.

The proposed staged development time frames are detailed below.

- Stage 1 – To be completed by 24 months from approval
- Stage 2 – To be completed by 12 months from completion of Stage 1
- Stage 3 – To be completed by 24 months from completion of Stage 2

Conceptual layouts of the staged development and the final feedlot are detailed in Appendix 2.

3.3 Pens and drainage layout

- The 8,000 SCU feedlot will be laid out in 4 rows using a terraced configuration in accordance with the National Guidelines for Beef Cattle Feedlot in Australia 2012 (The Guidelines hereon), page 3, Figure 1.1.
- Appendix 2 tables conceptual design for the feedlot in accordance with The Guidelines.
- The alignment of the rows of pens detailed in Appendix 2 will be pushed as far as achievable to a north-south alignment based on the information supplied by the detailed survey.

3.4 Earthworks, borrow pits and ponds

- Topsoil will be stripped from the development site and stockpiled.
- All slopes in the controlled drainage area will be constructed by either cut or fill.
- Pen & yard surfaces and cattle alleys will be capped and compacted at optimum moisture with local subgrade materials to achieve the prescribed standards. The clay material analysed and reported in Appendix 8 will be used without fortification in construction of most of the “dry” surfaces around the feedyard. The material will be applied by elevating scrapers in a series of 150mm layers to achieve 95% standard compaction at optimum moisture ($\pm 2\%$) added by watercart. The Guidelines (page 57) state that “Because of the formation of a low permeability soil-manure interface layer, clay lining is not generally required for feedlot pen and yard areas.” In this respect the development will exceed the prescription in The Guidelines.
- Clay materials, located in the vicinity of the development and designated for use in construction of the facility have been tested against The Guideline recommended infiltration limit of 1×10^{-9} m/s for effluent catch drains, sedimentation basins, holding pond floors and manure storage. Clay Pit 1 subgrade material as tested achieved 7.941×10^{-9} m/s (Appendix 8) and subsequent testing with bentonite addition indicates it is possible to fortify the local clay to meet The Guidelines for the “wet” surfaces in the development. The material will be applied by elevating scrapers in a series of 150mm layers, tined and compacted to achieve the required standard compaction (to achieve required permeability of 1mm/day) at optimum moisture ($\pm 2\%$). Water will be added as required by watercart.
- The holding pond natural subgrade is not expected to yield material suitable for use as a geotechnical seal for drains and ponds for the development. It is expected that material for sealing the key surfaces of the development will be borrowed from an area to the north or west of the feedlot site. The material will be applied by elevating scrapers in a series of 150mm layers, tined and compacted to achieve the required standard compaction (to achieve required permeability) at optimum moisture ($\pm 2\%$). Water will be added as required by watercart. If the guideline rate of infiltration of 1×10^{-9} m/s cannot be achieved with local clay (with or without bentonite additions), then a polymer plastic seal will be used to line the holding pond floors.

3.5 Feedroad, bunkline and manure haulage

- Roads and feed alleys will be constructed in accordance with the local council standards for gravel roads and of similar material to that used in construction of the Coalara Road.
- Maximum load vehicle traffic will be 20 tonne (loaded) delivery wagon with dual wheels. The wagon will be tractor drawn.
- Feed wagon turning circles at the south of the feedyard will be gravelled and the cattle alley crossing areas will be concreted.
- There will be a 30m gap between the last pen and cross cattle alley to the north of yards to allow for the feed alley turning circle.
- There will be 1920 m bunk length for the feedyard proper + arrival/dispatch + hospital pens = 2064m.
- The feedroad configuration will be up and back feeding alley roadway – with end of row turning circles.
- Manure trucks will access cattle alleys from the south entering the cattle alley behind the southern end of each top pen (A1 etc.). Trucks will park in the cattle alley and be loaded over the pen fence with front end loader.
- The loaded manure trucks will progress to the north (assisted by the 0.75% slope and exit the alley immediately south of the lowest pen in each run (ie A16). There will be a recessed fence line for 5 metres before the southern exit truck gate which will open into the turning circle reserve.

3.6 Water supply, troughs and trough wastewater

- Water will be supplied to the feedlot from the irrigation production bore (SDPB1 noted in Appendix 2) at a rate of 16 L/s. The backup stock bore with the capacity to deliver at least 6 - 15 litres/second will be constructed close to the main tank storage. The bores will be linked so that either one or the other can be used to push water through the main delivery line to the storage tanks.
- At full capacity of 8,000 SCU, the main bore will run for up to 6 hours per day to deliver the required water.
- In peak summer demand periods' the main bore will need to run for 8.25 hours per day to keep up with demand. In the case of the main production bore continuously supplying irrigation water the stock bore will need to run from 9 – 22 hours per day to supply water to the cattle.
- CSC has been issued a licence to take 2,250,950kL of groundwater from the PLP aquifer for irrigation, intensive stockwatering, dust suppression and (extensive) stock watering. The 5C groundwater licence is Instrument No. GWL205125(1).
- 2 X 150,000litre steel water tanks will be constructed on an earthen mound to provide at least 7 metres of head to the troughs at the highest altitude.
- All water troughs will be gravity fed with a minimum flow rate to each trough of 0.6 litres per second. A pressure pump may be fitted to deliver water at a rate of up to 0.7 litres per second for peak hourly demand that may be experienced in summer.
- Underground drain lines will join single drainage line angled from directly below the highest trough in each row (ei A1) to exit in line with the edge of the cattle alley line. (This angle will give more fall to the drain line than 0.5%.) Piping will be configured to ensure the ability to pressure flush the wastewater lines by opening valves at the south end of each row.
- The overflow and trough flush wastewater flows will exit to the north end of the feedlot rows to join a main waste pipeline flowing east at 3% fall into the sedimentation basins.

3.7 Row configurations

- The feedlot layout is tabled in Appendix 2.
- There will be four rows - designated A to D.
- The standard row configuration will be 16 pens x 30m bunk x 45m deep = 480 metres of bunkline per row.

3.8 Shade in cattle pens

- Shade (3 m²/SCU) will be provided in all cattle feeding pens.
- It is planned to installed shade at each stage of development or soon after the completion of each row of pens.

3.9 Dust control

- Provision for dust control will be with a water cannon mounted on a semi-trailer traversing cattle alleys. Feed alley dust will be controlled with a mobile tanker with spraybar.
- Sprinklers will be mounted on the perimeter of the processing barn to suppress dust in high traffic areas around receival/dispatch area.
- Only fresh water from the licence bores will be used in dust suppression activities.

3.10 Hospital facility

- Space will be left for a future hospital facility and chute to be located at the back of the 2 hospital pens in Receival/Dispatch row.
- Hospital facility will consist of 2 feed pens with shade cover.
- Receival & dispatch processing operations will be covered by a shed with design for good airflow in summer and ability to close it up in winter.

3.11 Processing shed

- The processing shed and "supply and take" races and holding pens will incorporate a 4-way sort.
- The cattle processing chute will be set up with minimum capacity for induction of 100 SCU per hour.

3.12 Arrival and dispatch

- An over and under dispatch ramp will be constructed for arrivals and loadouts.
- Cattle trucks for unloading and dispatch will line up looking WSW.
- The trucking area will have provision for B/D backloading, road trains and side loading/unloading configurations.
- Truck turning area will be an area of about 100m X 100m.
- Truck turning area will be gravel sealed to local road surface all weather standard.
- The processing shed will be located to the north-east of the over and under ramp.
- Arrival and dispatch will be connected to pens with bunk lines in the vicinity to the north of the processing barn.

3.13 Feedmill

- The feedlot feedmill will be used to manufacture or process animal feed only for use on the premises and therefore prescribed premises Category 23 does not apply to this application.

- As a principle the company plans to use as much existing infrastructure and mobile plant as possible. Grain storage and mill elements and mobile plant will be moved from the existing feedlot on the property “Springfield” at Gingin to “Sendem Downs”.
- The mill will be set up at the south west corner of the feedlot pens. Feedroads will feed in from the southern end of the feedpens with turning circles at the north end of pen rows.
- At normal operating capacity in Stage 3 of the development (80% of 8,000 SCU) the feedmill will process approximately 64 tonnes of grain per day as a sub-set of 84 tonnes of mixed ration delivered to cattle.
- Appendix 14 details a conceptual layout for the feedmill.
- Grain receipt will be via a drive-over, flatbed grain dump. Grain will transfer to enclosed elevators and thence to silo storage.
- A negative pressure, fully enclosed grain scalper and aspirator will extract large particles and condense dust in the grain cleaning process. Minimal dust emission will emanate from grain cleaning.
- All augers and elevators are fully enclosed facilitating minimal dust emissions.
- Grain processing will initially be setup for dry rolling in stage 1 and developed over time to a tempering system in stage 3.
- Grain will be processed through a new generation, electrically powered, side roll mill with low noise generation.
- Lupins will be received, stored and processed as for cereal grain.
- Premix pellets will be used to deliver micro elements to the cattle rations. Pellets will be inload in the grain receipt system and delivered direct to storage silos via enclosed elevators.
- In the outloading sector of the mill, augers from the “prepared ingredient” detention silos will be used to transfer the stored ingredients of grain, lupins and pellets to a batch bin before being conveyed to the ration mixer wagon.
- Hay and straw required for the fibre component of the ration will be cut to the specified chop length in the bale pressing process at the time of haymaking. This will remove the need for hay processing at the feedmill which can be dusty and noisy work.
- The feedmill concept is to provide a quiet and clean work environment on the premises. The closest neighbouring receptor residence is at a distance of 6 kilometres and was unoccupied at the time of writing this assessment).

3.14 Mobile plant and equipment

- Feed ingredients will be marshalled in silos from which they are transferred by auger into the batch bin and then the feed mixer. High fibre ingredients will be added with a front-end loader prior to loading with concentrates.
- Feed will be mixed and delivered to the feed-bunks in a mobile tractor drawn feed mixer wagon – mobile mixing bin (existing CSC plant).

3.15 Office & weighbridge facilities

The office and weighbridge will be located on the feedlot access road. (See location in Appendix 2.)

All traffic, coming and going will pass the office either across the weighbridge or via the pass lane.

The office and weighbridge will have the following features.

- The office will be a prefab ex-mining admin building but will be set up on piers to be elevated to a second story level. Operations will be on the second floor as per a grain testing stand with an open deck and offices.
- The operations floor of the building will have an office, a meeting room and a reception-laboratory room where clerical functions and commodity testing can take place.
- The ground floor will comprise a storeroom for holding stocks of vet chemicals, tags and other supplies awaiting issue to operational centres.
- The office will have a safety fenced veranda standing beside the weighbridge so that top deck cattle can be seen coming and going and grain/commodity trucks, once un-tarped can be visually assess from the office bridge control deck.
- An auto-spear grain tester will be installed above the weighbridge so that operators do not need to mount the trucks to take grain samples.
- All office weigh operations will be linked to a weighbridge computer program to be integrated with the feedlot program. The road configuration passing the office will be set up in such a way, that in the future, electronically controlled barrier gate/s could be effectively installed if it is determined that such a control was required.

4 Feedlot management

CSC is committed to gaining accreditation under the AUS-MEAT administered National Feedlot Accreditation Scheme (NFAS hereon). The requirements of this accreditation will inform and frame the management systems of the feedlot.

4.1 Livestock

Purchased feeder cattle will be inspected on receipt for fitness to specification and health.

Cattle will be visually identified with an eartag with linkage to National Livestock Identification System (NLIS) button and inducted according to the beef production program specifications supplied by the destination customer.

Cattle will be grouped into feeding lots and initially started on high fibre rations, transitioning over 3 weeks to a nutrient dense finisher ration. Rations are prepared and fed daily according to the appetite of the pens lots on feed.

Cattle are inspected daily for animal health. Sick or injured cattle are removed and treated according to ailment. Cattle in unrecoverable distress will be euthanised under the instruction of the feedlot manager as soon as detected.

4.2 Animal welfare

Appendix 9 details the Animal Care Statement (ACS hereon) for the Coalara Feedlot.

The ACS is derived from the requirements of the relevant DPI Animal Welfare Code of Practice - Cattle (2004) as published by CSIRO.

Animal welfare on the site will be managed in accordance with the attached ACS which is an integral component of the independently audited NFAS accreditation.

It is expected that the business will experience 100 head of deaths per annum which is a death rate of 0.5% on total turnover of cattle per annum. Dead cattle carcasses will be composted at the manure storage area in accordance with industry guidelines for the practice.

4.3 Feedstuff and rations

Feed rations will be generated in accordance with the National Feedlot Accreditation Scheme Standards (NFAS hereon).

Cattle are initially started on high fibre rations, transitioning over 3 weeks to a nutrient dense finisher ration. Rations are prepared and fed daily according to the demand appetite of the pen lots on feed.

4.4 Manure and pen floor management

Penned cattle excrete significant amounts of manure which accumulates on the feedlot pen floor.

Pens will be cleaned regularly and in any event in accordance with the guidelines laid out in the National Beef Cattle Feedlot Environmental Code of Practice (The Environmental Code – hereon).

Manure management is discussed in more detail in Section 6.

4.5 Effluent

Runoff effluent from all manured surfaces and trough wastewater is contained within the controlled drainage area. All effluent is directed to the sedimentation system for settling of solids prior to transfer for storage, compost production and evaporation in the main holding ponds.

4.6 Heat risk analysis and managing heat load

The Coalara feedlot will be constructed and operated as an industry Class 1 feedlot.

The standard cattle to be fed at Coalara feedlot will have a pre-mitigation heat load threshold rating of 86. With the mitigations of wet manure removal, heat load rations and deployment of extra water troughs the standard cattle fed at Coalara will gain a heat load threshold of 91.

The MLA Cattle Heat Load Toolbox for Morawa WA found that with mitigations of wet manure removal, use of heat rations and deployment of extra troughs the frequency of extreme heat events fell to 0 days of extreme risk in a 22year period. This risk ranking falls in the zone of acceptable risk for the operation of a feedlot for the selected cattle types to be fed at this feedlot.

The MLA “Cattle Heat Load Toolbox” risk assessment for the site is tabled in Appendix 10.

4.7 Power & Energy

Electricity to the feedlot will be provided by a diesel fuelled generator. Electricity supply will be required to enable water pumping, feed preparation and handling on the site. Electricity will also be required for provision of power and light in buildings and ancillary structures on the site.

Electricity will be provided to the existing farm shed on the eastern side of the property. Diesel fuel will be utilised by machinery used in and around the feedlot, such as vehicles, feed trucks, tractors, loaders and scrapers (during construction).

The economics of solar panel energy capture as a boost to power requirements will be investigated during the development of the feedlot. The technology will be adopted and applied if and as it makes good economic sense.

5 Existing environment

A search of the WA Department of Planning, Lands and Heritage provided the information listed in Section 8.5 – Appendix 5.

This search did not uncover any apparent State or Local Government impediments to the development.

5.1 Climate

The feedlot site is in a Mediterranean climate zone with warm to hot dry summers and mild damp winters. The following charts and graphs inform the average monthly climate data for the Coalara Feedlot site.

Moora weather station (now closed), at 50 km distance, is/was the closest BOM station with a comprehensive data set. Evaporation rates relevant to the development site are of significant interest as the effluent disposal system is based on evaporation processes.

Historic data from Three Springs and Moora was used to derive expected “Dam Evaporation” rates for the Premises noted as “CoalaraDamEstimated” in Figure 3.

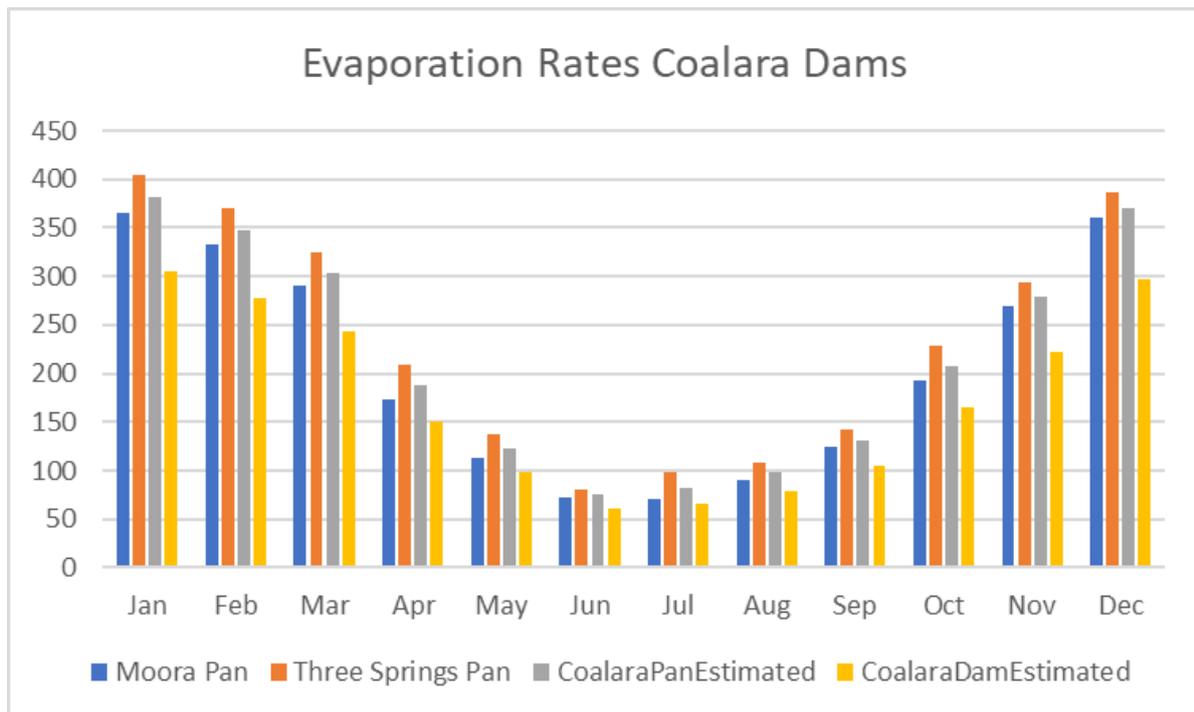


Figure 3: Monthly evaporation averages and site estimate (Source BOM data & calculations)

The following BOM charts and graphs illustrate the nature of the local climate experienced at the feedlot development site.

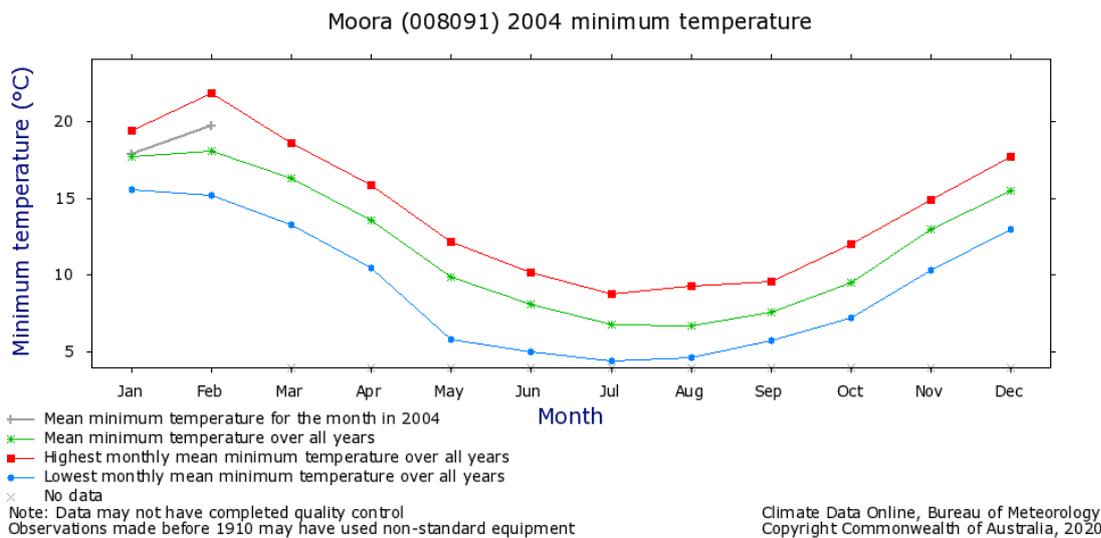
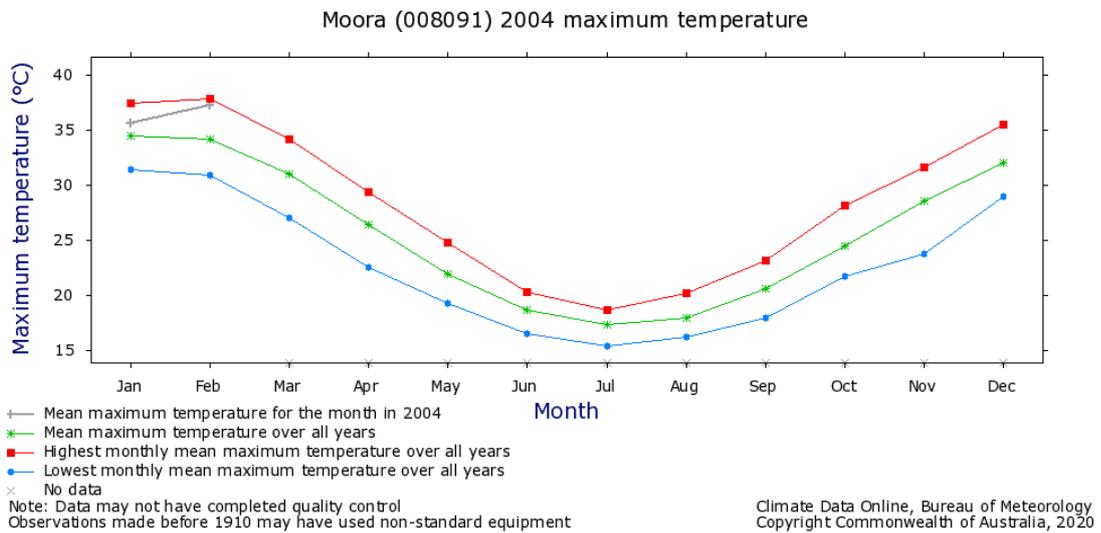
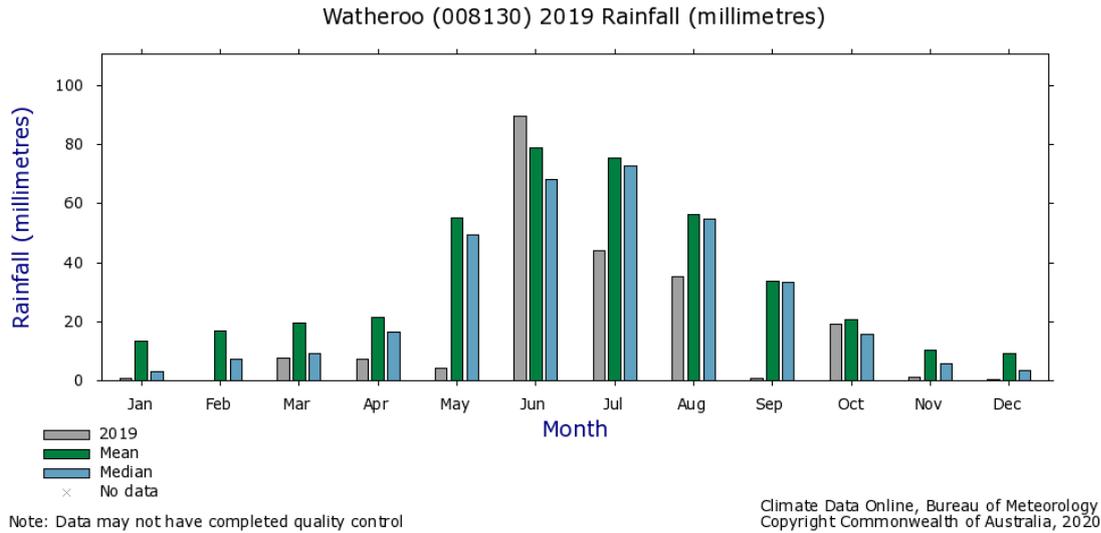


Figure 4: Long-term rainfall and temperature graphs – Watheroo & Moora

5.1.1 Temperature

Tabled below is the annual minimum and maximum temperatures for Moora from 1897 - 2004.

Maximums													
Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	34.4	34.1	31	26.4	21.9	18.7	17.3	17.9	20.6	24.5	28.5	32	25.7
Lowest	31.4	30.9	27	22.5	19.3	16.5	15.4	16.2	17.9	21.7	23.7	28.9	24
5th %ile	32.2	31.4	28.6	23.8	19.9	16.9	15.8	16.7	18.4	22	25.5	29.8	24.5
10th %ile	32.5	31.5	29.6	24.5	20.4	17.1	16.4	16.9	19.1	22.6	26.2	30.4	24.6
Median	34.2	34.2	30.8	26.4	21.6	18.8	17.4	17.9	20.6	24.4	28.8	31.7	25.7
90th %ile	36.4	36.4	32.6	27.7	24.4	20	18.4	19	22.2	26.3	30.5	34	26.6
95th %ile	36.8	37.2	33.2	29.1	24.6	20.2	18.5	19.4	22.6	26.8	31	34.6	26.6
Highest	37.4	37.8	34.1	29.4	24.8	20.3	18.7	20.2	23.1	28.1	31.6	35.5	27.2
Minimums													
Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	17.7	18.1	16.3	13.6	9.9	8.1	6.8	6.7	7.6	9.5	13	15.5	11.9
Lowest	15.6	15.2	13.3	10.5	5.8	5	4.4	4.6	5.7	7.2	10.3	13	10.8
5th %ile	15.7	15.9	14.2	11.4	8.1	5.7	4.9	4.8	6	7.6	10.7	13.7	11
10th %ile	15.9	16.3	14.9	12.3	8.3	6.8	5	5.2	6.6	8.1	11.4	14.4	11.1
Median	17.9	18.2	16.7	13.6	10.1	8.3	6.9	6.8	7.6	9.7	12.9	15.2	12.1
90th %ile	18.8	19.7	17.7	15	11.7	9.7	8.3	8	8.7	10.8	14.2	16.9	12.6
95th %ile	19	20.2	18.1	15.1	12	9.8	8.6	8.7	9.2	11.1	14.6	17.3	12.6
Highest	19.4	21.9	18.6	15.9	12.2	10.2	8.8	9.3	9.6	12	14.9	17.7	12.6

Figure 5: Moora (Station No. 008091) Temperature averages 1897 – 2004 (Source BOM data)

5.1.2 Rainfall and evaporation

The feedlot site is in the same band of rainfall and evaporation as the towns of Moora and Watheroo. 107 years of historical rainfall data from Moora, and 120 years of rainfall data from Watheroo, has been used to model expected conditions at the Coalara feedlot site.

The mean annual rainfall for Watheroo from 1899 - 2020 was 410 mm.

The 90th %ile rainfall year for Watheroo was 522mm and the 95th %ile was 577mm over the same period.

The mean annual evaporation for Moora as reported by DPIRD is 2456mm. (Luke et al. 1987)

The mean annual evaporation for Three Springs is 2781mm. (Luke et al. 1987)

Evaporation exceeds rainfall in this zone by approximately 2 metres per year.

Tabled below is the average monthly rainfall and evaporation data for Moora (1897 – 2004).

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	11	14.3	19.8	25.4	60.9	90	88.6	63.8	38.6	24.9	12.8	9.6	461.4
Lowest	0	0	0	0	0.6	21.4	21.4	8.8	4.6	0.8	0	0	203
5th %ile	0	0	0	0.9	12	39.3	41.2	24	11.3	5.4	0.1	0	306.5
10th %ile	0	0	0.3	2.8	19	44.7	46.8	31.5	16.2	6.8	0.8	0	335.5
Median	2.3	3.8	9.2	19.8	57.2	85.4	84.4	60.2	35.4	22.7	8.3	3.8	453.3
90th %ile	33.4	37.7	57.1	53	105	141.6	138.6	99.8	66.3	44.8	30.4	30.6	596.9
95th %ile	46.4	62	71.8	60.6	134.2	162.8	162.4	121.6	80	48.4	39.4	41.7	644.8
Highest	89.8	230.4	145.2	128.6	160.5	230.7	244.9	137.3	99.6	86.2	55.9	70.6	790.1
Mean Evap	366	333	291	173	113	73	70	91	124	193	269	360	2456
Net Precip	-355	-318.7	-271.2	-147.6	-52.1	17	18.6	-27.2	-85.4	-168.1	-256.2	-350.4	-1996.3
Dam Evap	289	263	229	136	89	57	55	71	97	152	212	284	1934

Figure 6: Moora (Station No. 008091) Rainfall and evaporation 1897 – 2004 (Source BOM data)

Tabled below is the average monthly rainfall data for Watheroo (1899 – 2020). There is no BOM evaporation data for Watheroo. Coalara Feedlot pond evaporation for effluent modelling has been derived using evaporation gradient differentials between Moora and Three Springs and the pan vs dam by zone information by Luke, Burke and O’Brien 1987.

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	13.3	16.7	19.4	21.5	55	78.8	75.6	56.3	33.6	20.5	10.3	9.3	410.3
Lowest	0	0	0	0	1.3	11.2	9.4	6.6	0.6	0	0	0	181.1
5th %ile	0	0	0	0.6	8.6	23.5	30.4	18.6	9.2	2	0	0	232.1
10th %ile	0	0	0	1.6	14.8	30.1	37.3	25.8	12.3	3.9	0	0	300.5
Median	3.2	7.1	9	16.6	49.5	68	72.9	54.6	33.3	15.6	5.6	3.6	
90th %ile	43.4	48.7	48.8	47.9	102.2	141	113.5	90.6	56.1	40.5	31.9	25	521.6
95th %ile	58.9	63.6	69.9	59.4	114.9	164.1	131.5	103	62.8	48.6	35	34	576.6
Highest	99.1	120.6	188.2	108	182.7	225.9	174.1	141.3	85.1	73.9	50.2	62.8	716.1

Figure 7: Watheroo (Station No. 008130) Rainfall data 1899 – 2020 (Source BOM data)

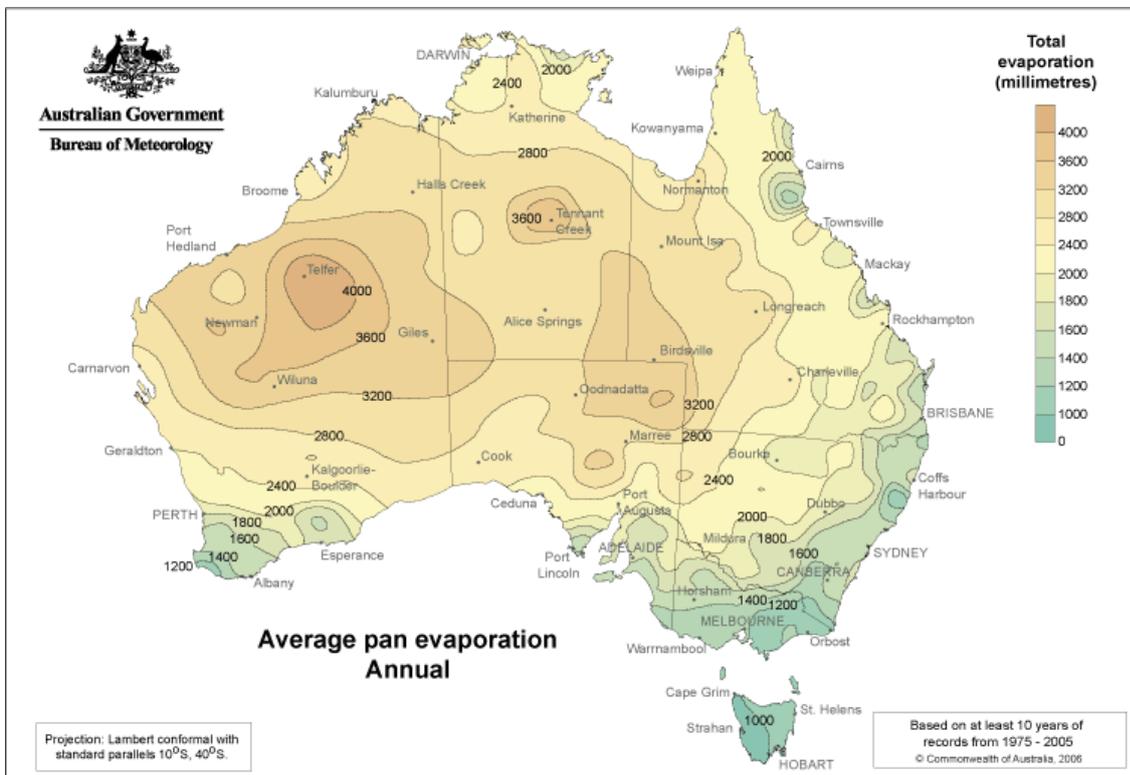


Figure 8: Australian annual average pan evaporation (Source BOM data)

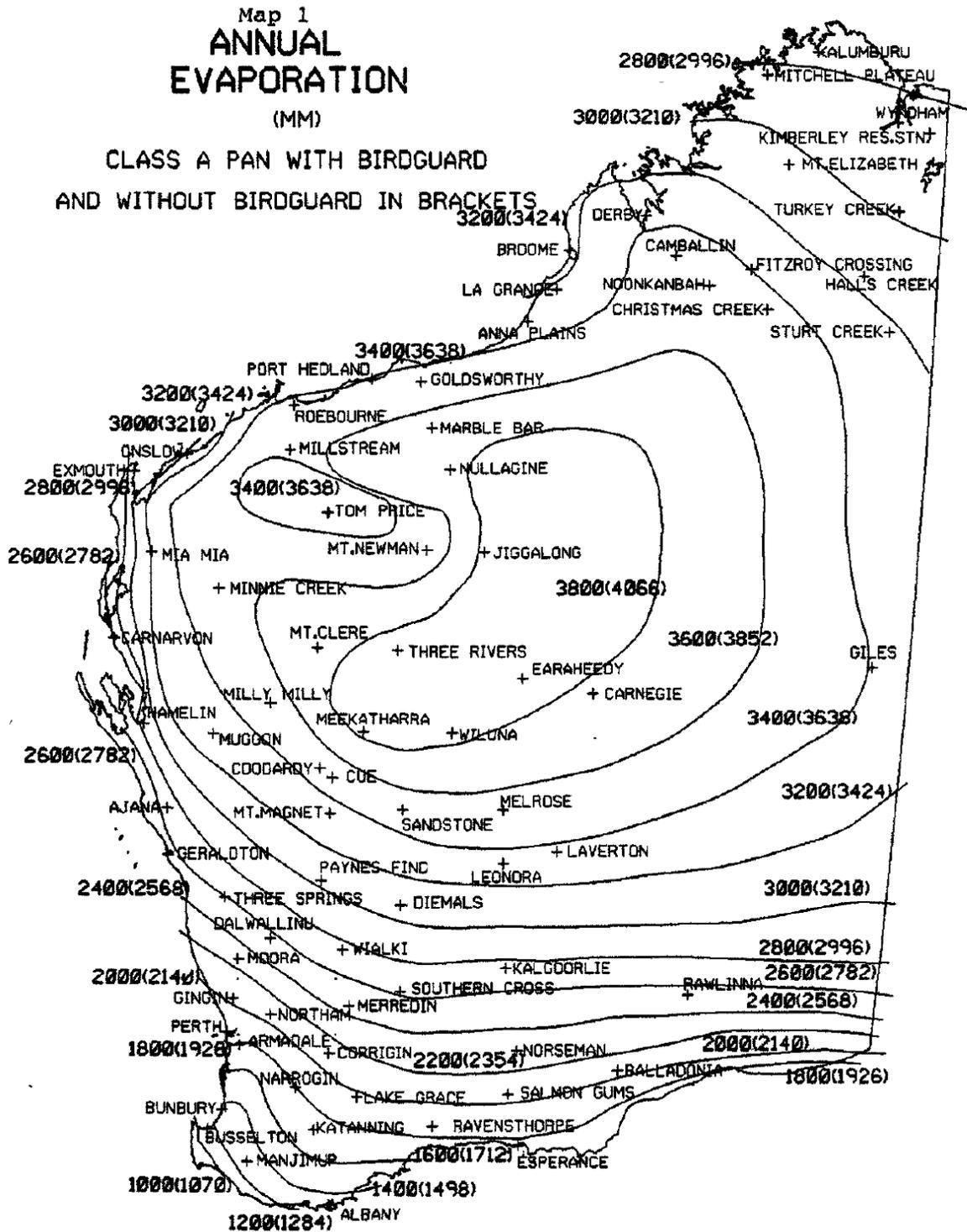


Figure 9: Western Australian annual average pan evaporation (Source Luke et al. DPIRD 1987)

5.1.3 Wind strength and direction

Figure 8 below is the 9am wind rose for Southern Cross over a period of 60 years to 2007.

Rose of Wind direction versus Wind speed in km/h (01 Jan 1957 to 30 Nov 2007)

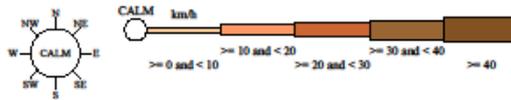
Custom times selected, refer to attached note for details

SOUTHERN CROSS

Site No: 012074 • Opened Jan 1889 • Closed Dec 2007 • Latitude: -31.2319° • Longitude: 119.3281° • Elevation 355m

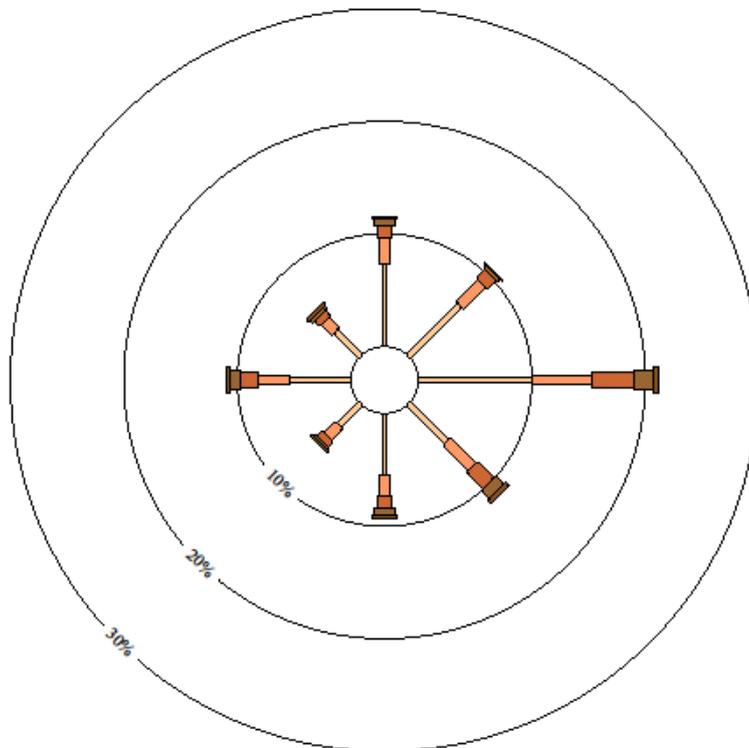
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am
18267 Total Observations

Calm 15%



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Figure 10: 9am wind rose for Southern Cross (Source BOM data)

Figure 9 below is the 3pm wind rose for Southern Cross over a period of 60 years to 2007.

Rose of Wind direction versus Wind speed in km/h (01 Jan 1957 to 30 Nov 2007)

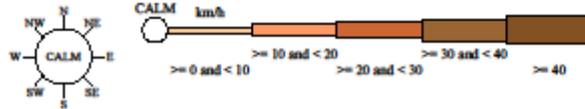
Custom times selected, refer to attached note for details

SOUTHERN CROSS

Site No: 012074 • Opened Jan 1889 • Closed Dec 2007 • Latitude: -31.2319° • Longitude: 119.3281° • Elevation 355m

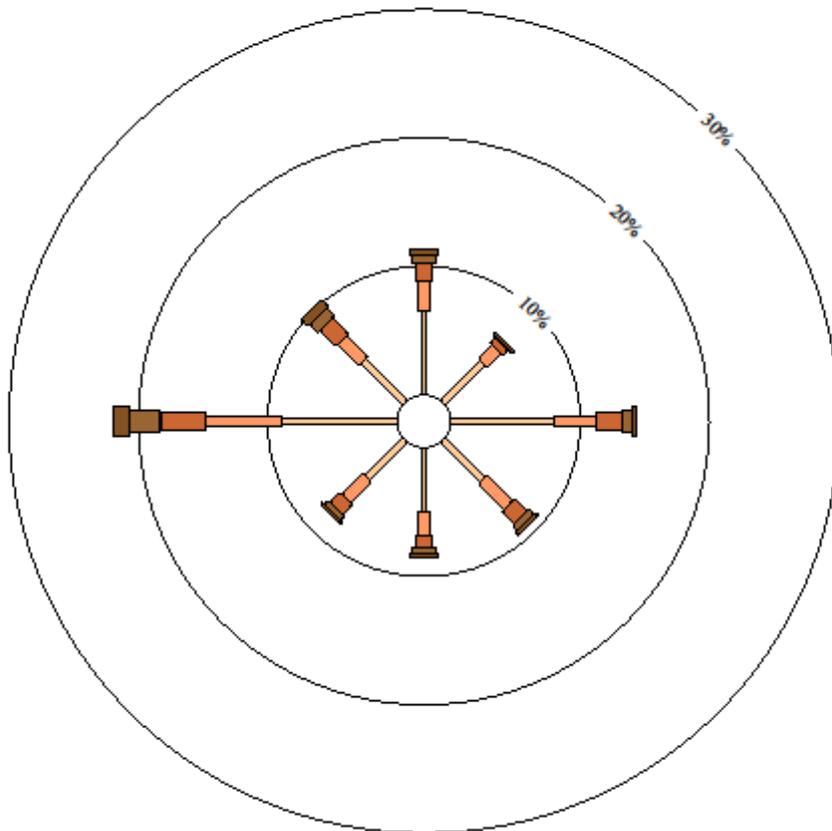
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
18021 Total Observations

Calm 10%



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Figure 11: 3pm wind rose for Southern Cross (Source BOM data)

5.2 Landform

The site is located at the middle of the Dandaragan Plateau. The landform is undulating. Maximum slopes on the property are no more than 5%. The average slope of the feedlot site selected is 3% fall to the east and 1% fall to the north.

“The Dandaragan Plateau has similar characteristics to the Arrowsmith Region but is less dissected by streams. Most watercourses are sporadic and ephemeral, except in the southern portion of the Dandaragan Plateau where there are a number of perennial groundwater-fed brooks (eg; Gingin and Lennard Brooks). The Dandaragan and Gingin Scarps form the western boundary and the Darling Scarp marks the eastern boundary of the plateau. The western edge of the Dandaragan Plateau is coincident with subcrop of the Otorowiri Member of the Parmelia Formation along the Dandaragan Scarp.” (Hydro-Concept 2015)

5.3 Hydrogeology

As noted in the previous section the proposed feedlot site is in the middle of the Dandaragan Plateau and sits on the Parmelia/Leederville Parmelia Aquifer. The site is located due north west of the Midlands “Dinner Hill” groundwater prospective area. The underlying geology and hydrogeology are revealed in the Agaton 12 bore log that is on the southern perimeter of the premises approximately 1.5 km from the feedlot site. The detailed bore log is tabled in Appendix 6.

The local hydrogeology is well described in the Hydro-Concept Hydrogeological Report 2015 of groundwater prospective resources in the quote below.

“Dinner Hill

Characteristics: This area is positioned in the eastern Dandaragan Plateau, to the north of Moora and Dandaragan (Fig. 13). There has a range of horticultural developments in the area with most substantial being olive production at Dandaragan Estate (Dandaragan Olives) just across the southern boundary in the former Victoria Plains subarea.

Aquifer: Leederville-Parmelia; possibly Mirrabooka.

Allocation status: To be confirmed – the Leederville-Parmelia Aquifer is possibly fully allocated; however, most allocation is associated with Dandaragan Estate which is present in the southwest corner of the Dinner Hill subarea and suggests other allocation may be considered in the north of the subarea.

Depth to water: Shallower near Minyulo Brook being less than 30 m bgl but increasing to the east.

Salinity Some areas of less than 500 mg/L TDS but mostly 500 to 1000 mg/L TDS

Bore yield: Very high

GDE constraints: Springs along Minyulo Brook (Muthawandery Spring) associated with discharge from Leederville aquifer”

References for greater detail on the local hydrogeology include studies by Balleau 1972, Briesse 1979 and Harley 1975.

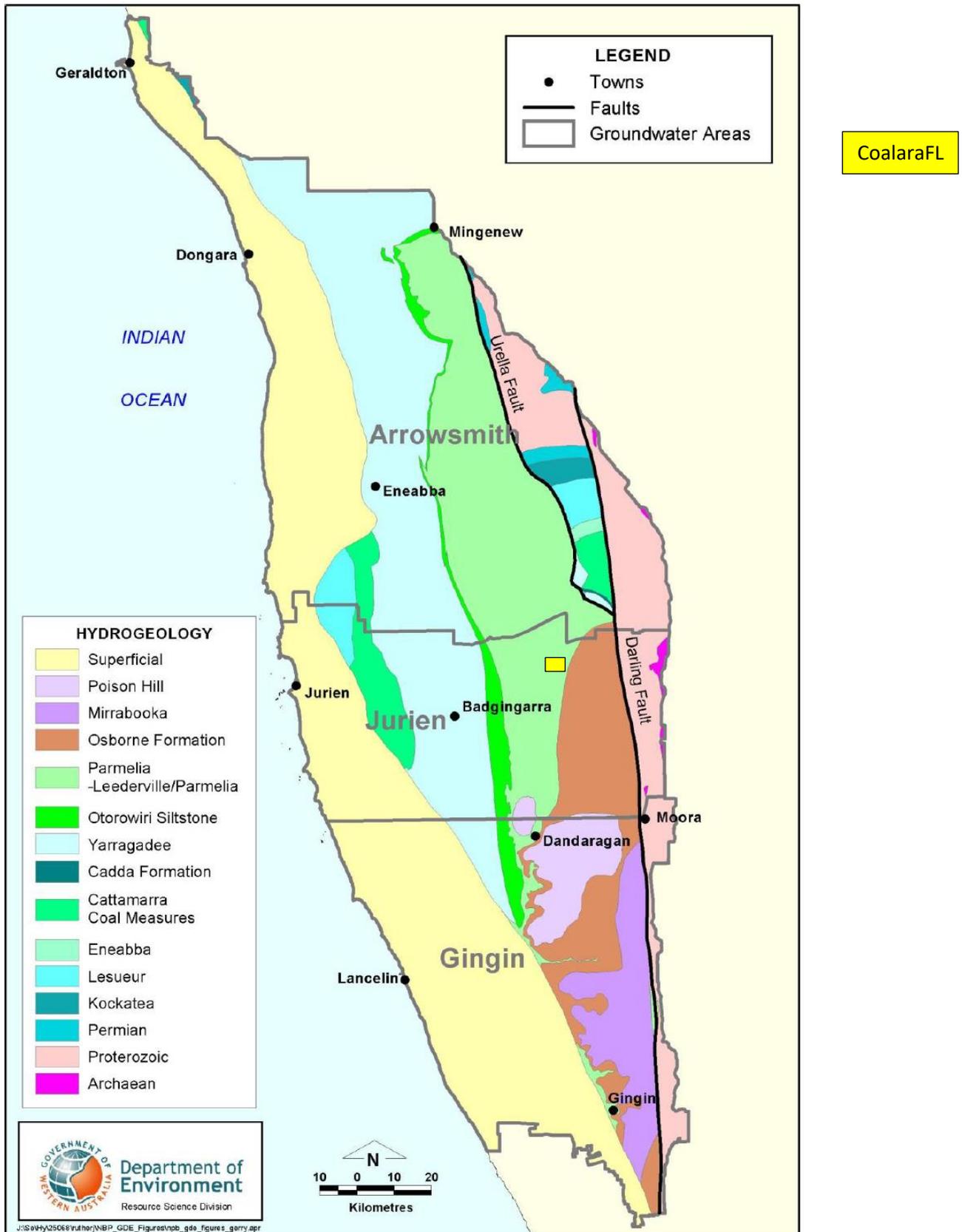


Figure 12: WA Midlands hydrogeological map with approximate location of Coalara Feedlot

The site hydrogeology of the area is well documented in many other studies.

The proponent has been granted a water licence to access the P/LP aquifer and abstract 2.25 GL/annum.

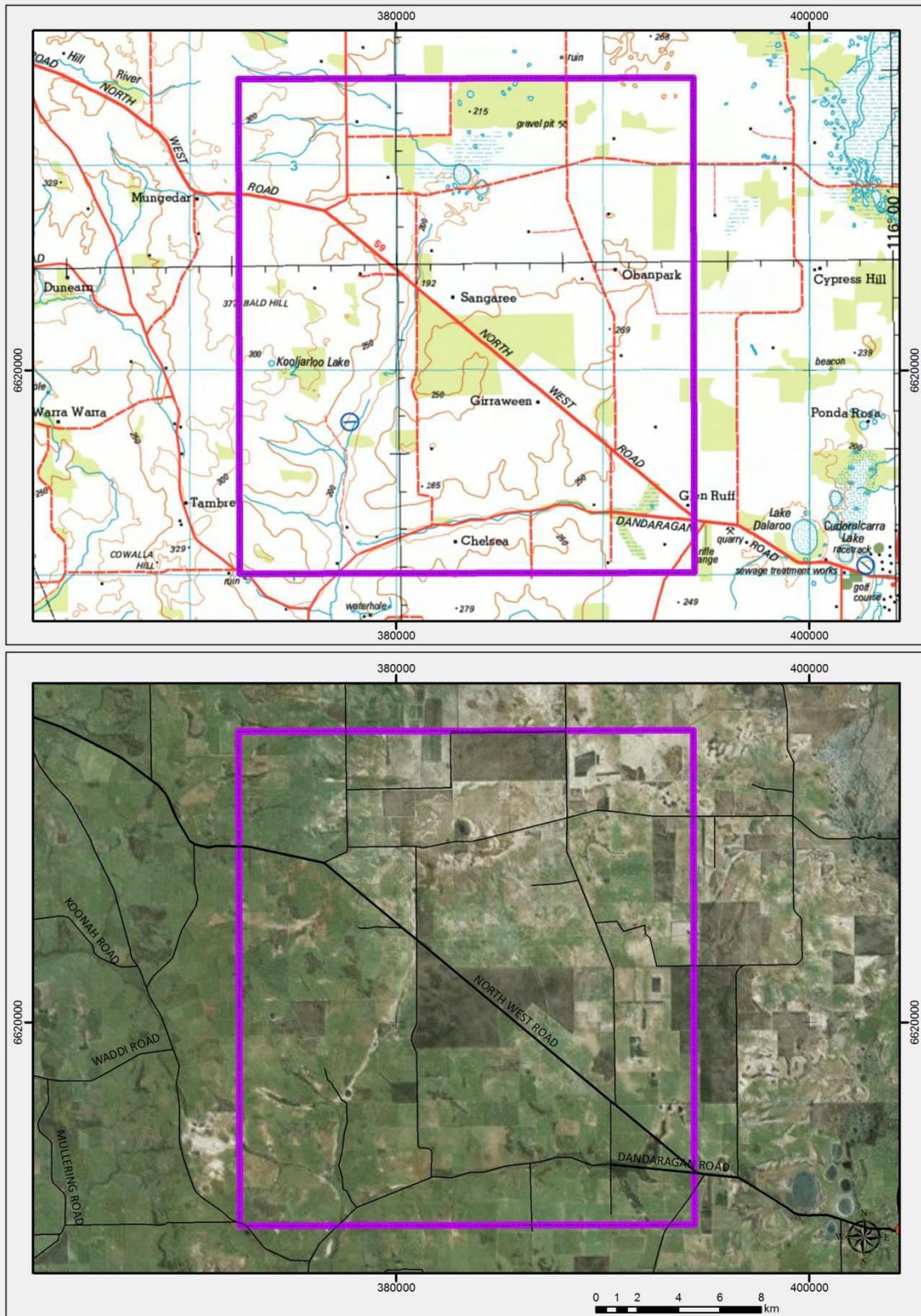


Figure 13: Location setting of Dinner Plain prospective groundwater resource area

5.4 Geology

The geology of the area has been described in many previous reports and published papers, with regional stratigraphic overviews presented by Playford et al. (1976), Backhouse (1984), and Mory and Iasky (1996).

The site is located on slope deposits; includes colluvium and sheetwash. To the east of the premises is sandplain, mainly aeolian with some residual deposits.

5.5 Groundwater

The site sits above a high-quality groundwater resource. The underlying hydrogeology and groundwater resource are revealed in the Agaton 12 bore log that is on the southern perimeter of the premises approximately 1.5 km from the feedlot site. The detailed bore log, water quality characteristics and yield data is tabled in Appendix 6.

The groundwater resource and the licence to access the Parmelia/Leederville Parmelia aquifer for irrigation is a key asset for the proponent and business operator.

Protection of the groundwater resource from nutrient accessions and degradation is a fundamental success factor for the feedlot operation.

5.6 Soil and subgrade

Soil on the premises is generally a loamy sand. All past excavations on the premises area revealed that at about 1 metre depth the subgrade underlying the soil is gravel with varying clay content.

Appendix 7 details the key information in respect of the Premises soils and subgrade information.

On the feedlot and pond areas the loamy sand is underlain with mottled red clayey gravel. This red material is underlain by yellow clayey gravel.

The paddocks on the premises will be managed to maintain sufficient ground cover to ensure that wind and water erosion of soil does not occur.

The soils on the property are low in organic matter and will benefit from the addition of carbon in the form of composted cattle manure. The resulting ionic charge will enhance water holding capacity in the root zone which is central to crop yield improvement in this region.

5.7 Biodiversity

The search of the DPLH interactive website for the development project land area did not generate any indication that the land area is a sensitive hotspot of biodiversity. (On that basis no specialist biodiversity research project was commissioned.)

The Premises have been cleared except for scattered remnant trees. Much of the land on the premises has been cropped for winter cereals. **All** the land that the development is to take place on has been regularly cropped for winter cereal production.

The proponent met with Ms Alison Donovan, District Officer of the Dept. of Biodiversity, Conservation and Attractions (DBC&A hereon) at Jurien Bay on 24 May 2019. The proponent answered a series of questions to provide an understanding of the potential impact on biodiversity and local water ways, wetlands and proximity to the Watheroo National Park boundary. After discussion relating to the site and situation of the proposed development Ms Donovan advised that she could not foresee any material impacts on animals, vegetation and other aspects of interest to The Department in the vicinity of the development.

Key notes in respect of the site are:

- the site area has been modified by land clearing and has a long history of cropping and livestock grazing
- no threatened flora or fauna species are known by DBC&A to exist on the site
- no threatened ecological communities are known to be located on the site
- the premises of the proposed feedlot is bordered on two sides (north and east) by the Watheroo National Park and to the south and west by properties owned by CSC
- the site contains no suitable habitat for threatened species and the likelihood of threatened species using the site is low
- given the characteristics of the site the development is unlikely to require referral to the Minister for the Environment for assessment under the Commonwealth EPBC Act.

5.8 Road and transport infrastructure

The site is serviced by an excellent network of local roads constructed from local subgrade material.

The key arterial roads leading to the eastern sector of the Boothendara Road are Coalara Road, Watheroo Road and Coorow Green Head Road. This road network is connected to the Brand Highway which is 31 kilometres from the Sendem Downs entrance via Coalara Road and then Watheroo Road.

5.9 Aboriginal cultural heritage and native title

The proposed Premises are within a regional Native Title Claim, YUED, NNTT Number 30 that was filed on 22/08/1997. The Premises is not within a Native Title Determined Area.

Indigenous Land Use Agreement WI2015/009 was identified as encompassing the premises land area. Figure 14 details the geographical extent of the Agreement.

Listed below are some details of the Agreement as an extract from the Register of ILUA's.

Extract from Register of Indigenous Land Use Agreements

- NNTT number WI2015/009
- Short name Yued Indigenous Land Use Agreement
- ILUA type Area Agreement
- Date registered 17/10/2018
- State/territory Western Australia
- Local government region City of Wanneroo, Shire of Chittering, Shire of Coorow, Shire of Dalwallinu, Shire of Dandaragan, Shire of Gingin, Shire of Goomalling, Shire of Moora, Shire of Toodyay, Shire of Victoria Plains, Shire of Wongan-Ballidu
- The agreement area covers about 26,000 sq km and is located approximately 60 km north of Perth and extends north of Jurien Bay, east to Dalwallinu and seaward to the 3 nautical mile limit.

Given the location of the proposed feedlot in an area of significant disturbance and modification it is considered a low risk for issues of aboriginal cultural heritage to arise or artifacts to be discovered.

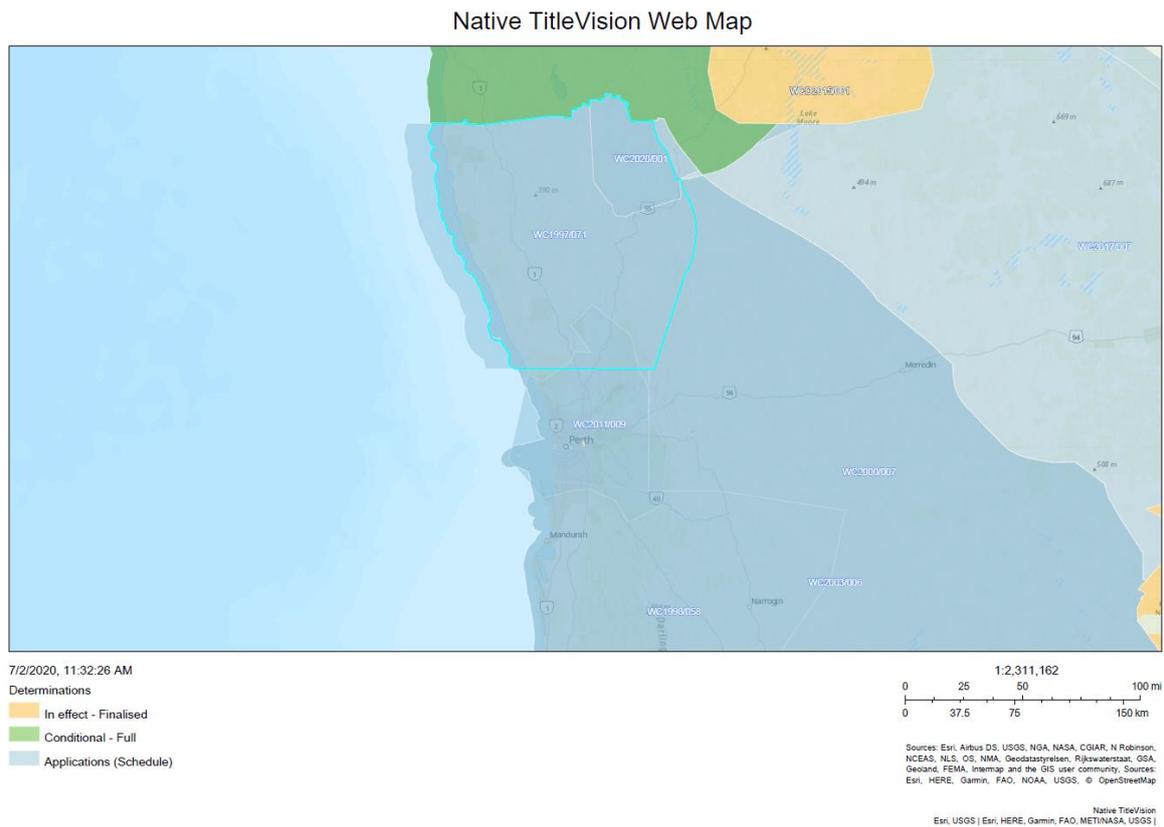


Figure 14: Yued Indigenous Land Use Agreement WI2015/009

6 Environmental risk management

6.1 Odour and dust

6.1.1 Odour generation

Feedlots generate odour from several sources.

Common odour sources are the feedyard surfaces, effluent drains and holding ponds. Environmental conditions and management can exacerbate or mitigate odour generation.

6.1.2 Odour mitigation

Odour management strategies will be implemented on the site.

Separation distance between odour source and receptor is the key determinant of odour impact of a development.

While special odour mitigation measures for impact on receptors is not necessary under The Guidelines, due to the remote location and large separation distances, the management of the business will operate the business according to the Environmental Codes of Practice. In addition, the provisions of the NFAS require compliance with environmental management systems which aid in the reduction of odour.

Timing operations to coincide with favourable weather conditions at times of manure harvest and shipment and spreading is important as is management to ensure minimisation of anaerobic processes. These are the key strategies to achieve good odour management. Appendix 11 details a comprehensive odour management plan for the feedlot.

6.1.3 Odour receptors

The proposed development site has a separation distance of approx. 6 kilometres to the nearest farmstead residence, Lot 2297, Coalara Road, Boothendara. This house is noted as R1 in Figure 25. This residence was unoccupied at the time of writing. The advised separation distance calculated under the guidelines for the characteristics of the site and location is approximately 2 kilometres to this class of receptor.

Coalara Feedlot will have a separation distance of approximately 28 kilometres to the nearest small towns of Watheroo (28 km) and Badgingarra (30 km). The required separation distance to a small town estimated using The Guidelines is approximately 6.9 kilometres.

6.2 Noise

Remoteness and separation distance from receptors ensure that noise is not an environmental issue for this operation. Due to the site characteristics it was deemed unnecessary to conduct any detailed study into this listed environmental hazard.

6.3 Manure

The proponent proposes exemption from licencing under the following category of the EP Act 1986:

- Category 67A – Commercial compost or blended soil; 1000+ tonnes stored on premises

Category 67A is described as “..premises on which organic material (excluding silage) or waste is stored pending processing, mixing, drying or composting to **produce commercial quantities** of compost or blended soils.” The production or design capacity for Category 67A is 1000 tonnes or more per year.

The proponent has sufficient crop land on the premises and adjoining agricultural holdings to sustainably utilise all manure/compost produced in the feedlot operations. No sales of manure or compost will be necessary to sustain the feedlot operations. Therefore, **commercial** quantities of manure or compost will not be generated on the premises.

6.3.1 Manure generation

Tucker et al. 2015 (Section 1, pages 6/7) calculated that the Total Solids (TS hereon) manure harvest yield could be as low as 400-420 kg TS/SCU/year when the feedlot pen floor interface layer is well maintained and no bedding is used for cattle.

CSC intent to protect the pen floor interface layer to ensure the seal above subgrade is maintained in line with The National Guideline’ strategy for minimal infiltration of nutrient from the pen floor. CSC do not intend to use bedding for cattle as the site chosen has climate characteristics delivering year-round cattle comfort in most years. On this basis, the number used for TS manure harvest from the Coalara pen floors is 410 kg TS/SCU/year.

Depending on rainfall and pen conditions significantly more than this tonnage may be removed from the pens on an “as is” basis to the stockpile however moisture loss and volatilisation will reduce the total manure tonnes finally available for use in soil improvement programs.

More cattle on feed will result in proportionally more manure solids harvested from pen surfaces.

Operating the business at the general industry standard for feedlot occupancy of 80% of licenced capacity (once fully developed), TS manure harvested annually and delivered to stockpile, will be approximately 2,624 tonnes, which, with an average harvest moisture of 50%, generating “as is” delivery to stockpile of 5,248 tonnes, which with a bulk density of 0.6T/m³, will equate to 8,750 m³.

It is intended that a minimum of 7,000 m³ of windrowed manure and stored compost will be retained on the stockpile site at any time once the feedlot is operating at full capacity – refer Section 6.3.2.

The manure stockpile will have minimum capacity at any stage of development to hold 24 months of feedlot manure being composted and stored. Manure produced will be both aged and composted. These factors affect the elemental and mineral composition of the manure utilized as fertilizer on croplands.

Tucker et al. 2015 (Section 2, page 4) found that aging manure for 12 months or more reduced the TS by about 35%. On this basis, with the Coalara environmental model detention time of manure of at

least 12 months, the total manure transferred annually from stockpile for application to CSC crops would be in the vicinity of 1,706 tonnes TS per year or 2,274 tonnes “as is” at 75% dry matter.

6.3.2 Manure processing and manure storage

The feedlot design incorporates a maximum reserve area of 4.86 hectares for the manure stockpile (developed in two stages) within the controlled runoff area. A base of at least 100mm of compost will be maintained on the storage pad floor at any time. Manure windrows as “composting work in process” toward production of compost, will sit upon this base pad as they are watered and turned.

Manure will be initially stacked in low profile windrows (150cm X 3m spaced 5m apart – 8m centre to centre) and processed with a windrow turner using effluent additions from the holding pond to ensure the product is processed at, and produced to, optimum moisture specifications. Once friable and stable, the composted manure will be stacked in larger profile windrows (250cm X 10m spaced 5m apart – 10m centre to centre) for storage until used on the Company croplands. A minimum compost stock on hand of 7,000 m³ will be retained, all the time, however provision has been made for the maximum developed manure storage and processing area to hold up to double this amount.

In addition, provision has been made for composting of dead cattle in a designated area on the manure pad. It is estimated that manure windrows with a profile 230cm X 6m will be required to hold dead cattle for composting. 1.15 metres minimum per head/annum of linear windrow should be provided for each dead animal; therefore 150 linear metres for 100 dead cattle composting windrows will be allowed in the manure storage and processing area. Tucker et al. 2015 (Section 2, pages 10-14).

The list below details the planned windrows to be laid out in the manure storage and processing site.

- Processing windrows: 150cm x 5m x 3,000 linear metres in 40 rows
- Storage windrows: 350cm x 10m X 600 linear metres in 8 rows
- Dead cattle composting windrows: 230cm x 6m x 150 linear metres in 2 rows

There is also provision for a manure machinery storage area for a grader, front-end loaders, compost turners and irrigation plant and equipment. Finally, a manure road reserve will be left clear along the high end of the storage area and turning circle left clear at the effluent pond end of the site.

The feedlot business has the potential to produce 3 basic manure categories at the premises.

1. Fresh or raw manure
2. Aged manure
3. Composted manure

Fresh manure is material harvested directly from the pens and it is high in nitrogen and moisture with significantly more bulk and TS than aged or composted manure. Fresh manure can be blocky and slabby and therefore difficult to apply directly to land through many mechanical spreaders. The material is likely to contain more viable weed seeds and pathogens than in aged or composted manure. Nutrient levels in fresh manure are relatively inconsistent and unstable. Fresh manure can contain high levels of nitrogen but will generally draw down available nitrogen in the first crop after spreading to land. Nitrogen is likely to be lost to air in spreading fresh manure to soil. Available

phosphorus for crop use is diluted by the bulk of the material in the fresh manure form. High odour levels may be experienced in spreading fresh manure.

Aged manure is material that has been stored in windrow conditions for 12 months with or without turning or addition of moisture. Aged manure is more weathered than fresh manure and more likely to be more friable or spreadable particularly if rain has fallen on the product or moisture has been applied. Nitrogen levels are generally lower in aged manure than fresh manure. Nutrient levels in aged manure are more stable and consistent than in fresh manure and phosphorus is more concentrated in aged manure following the TS shrink that occurs in a 12 months aging period. Aged manure is less likely to tie up nitrogen available to crops in the first year of spreading. Aged manure is generally drier and less odorous than fresh manure. Organic carbon is more concentrated in aged manure than fresh manure.

Composting is the process whereby microbial activity in the presence of moisture and an ideal carbon nitrogen ratio, is used to breakdown organic matter into humus.

Aerobic composting in the feedlot context is preferred over anaerobic composting as it generates less odour and emits carbon dioxide rather than methane and has a lower net greenhouse gas emission.

Fully composted manure has little nitrogen as this is used by microbes and converted to CO₂ emissions in the process. Compost is generally drier and more consistent for moisture, phosphorus and organic carbon. Phosphorus is concentrated in the composting process relative to the significant reduction in bulk of the TS. Nutrients are stabilised in a slow release form in compost.

Compost as a soil conditioner and source of phosphorus and organic carbon is significantly more valuable in cropping regimes than fresh or aged manure. The concentrated ionic charge provided to soils with low charge enhance water holding capacity and the interface for transfer of nutrients and moisture to crop plants.

Composting requires sufficient carbon to fall in the carbon nitrogen range of 15-40:1. Freshly harvested manure may be suitable for composting without amendment. The consequence of too little carbon is that the available carbon will be used up and the decomposed organic material will cool down and stabilise as aged manure.

The Coalara plan is that fresh manure will be harvested from feedlot pens in dry conditions and stored in dry peaked windrows (which continue to dry out over time without processing). Winter effluent moisture will be seasonally available from the feedlot ponds. Feedlot effluent water will be added to manure to initiate and facilitate the composting process. Once underway clean water may be added to the compost to complete the process. Heat monitoring and turning of windrows will drive moisture out of the manure. More water will be added until the process is complete at which time the low profile processed windrows will be pushed together to form the larger profile storage windrows which are then loaded and shipped to CSC croplands.

6.3.3 Manure utilisation plan

The feedlot is situated in a region that is low in soil organic matter (soil carbon) and other nutrients. Feedlot manure contains significant stores of organic carbon, trace elements and major crop nutrients such as phosphorus and potassium.

The first strand of the manure utilisation strategy is to replenish soil carbon and nutrient deficits in the premise' soils and the soils of the adjoining "non-premises" farmlands owned by CSC. (The CSC dryland cropping area in addition to the premises totals 1,962 ha).

The second strand of the future, long term feedlot solids management plan is that after the CSC croplands are sufficiently upgraded (in about 10 years from commencement of operations) the business would consider making available a portion of feedlot manure to be shipped off the premises for use as crop fertiliser and organic matter soil conditioner by local farmers. To enable this plan CSC would seek to secure a Category 67A EP licence to enable commercial sales of compost.

Discussions have been held with neighbouring property owners who are keen to access bulk loads of manure for spreading, to reduce and complement their annual fertiliser requirements.

Financial arrangements for this to happen will vary from time to time depending on supply and demand. If local growers are to secure the material, an "at cost/profit price" will be struck for manure loaded onto the farmer's truck. Local growers will be invited to tender to become potential recipients of compost as it becomes available.

6.3.4 Manure and compost utilisation on premises cropping programs

The premises area includes approximately 1,056 ha of dryland cropping land which would benefit from the addition of carbon, phosphorous and nitrogen in most cropping regimes.

The proponent is aware that overloading the premises soils with manure could lead to nutrients moving below the root zone and potentially reaching the ground water. Therefore, once gross soil nutrient deficits on the premise' are addressed by using aged manure and compost, the primary strategy will be to export the material from the feedlot premises to the adjoining CSC croplands.

Management are guided by professional agronomists in cropping program choices that are good for the soil, good for the environment and good for the business. However, as the facility has a focus on cereal grains and cereal hay as the base ingredient in the beef cattle feed rations, it is highly likely that cropping will lean toward cereal growing in rotation with suitable break crops and fallow rotations.

Agronomist charged with responsibility for cropping programs on the farm will be required to ensure that nutrient balance is calculated using scientific method and advice given in respect of maximum rates of manure application that can occur for crops being grown.

6.3.5 Cropping nutrient balance – aged feedlot manure

The estimated concentration of nutrients in aged feedlot manure (dry basis) are listed below.

- Dry matter (TS)	75%
- Nitrogen	2.2%
- Phosphorous	0.80%
- Potassium	1.9%
- Sodium	0.30%
- Sulphur	0.45%
- Calcium	2.22%

- Magnesium	0.86%
- EC1:5 dS/m	8.26%
- pH	7.22
- Ammonia-N mg/kg	1,431
- Nitrate-N mg/kg	307
- Boron mg/kg	21.5
- Cobalt mg/kg	7.0
- Copper mg/kg	34.5
- Iron mg/kg	11,717
- Manganese mg/kg	387
- Molybdenum mg/kg	4.28
- Ortho-P mg/kg	944
- Zinc mg/kg	221

The primary nutrients used in determining nutrient limits for cropping soils are nitrogen, phosphorus and potassium.

The method for estimation of nutrient application limits is the “nutrient limited application rate” (NLAR) formula which is expressed as:

$$\text{NLAR} = \frac{\text{Cr} + \text{SS} + \text{EL}}{\text{NW} \times 10^{-3}}$$

Where

NLAR	= nutrient limited application rate of feedlot manure (t/ha)
CR	= crop requirement of the applied nutrient (kg/ha)
SS	= soil storage (kg/ha)
EL	= allowable nutrient losses to the environment (kg/ha)
NW	= available nutrient concentration in FL manure (mg/kg)

Phosphorus is the only nutrient with significant capacity for soil storage and the surplus amount that can be added to the soil annually depends on the life of the feedlot. Coalara Feedlot is assumed to have a 30year operating life.

According to Tucker et al. 2015, if the soil of the utilisation area has a depth of 0.6m, a bulk density of 1,400 kg/m³ and can absorb 200 g P/kg, then the total soil storage (SS) capacity is 1680 kg of phosphorus. If the expected life of the feedlot is 30 years, the annualised SS is 56 kg P/ha.

Growing an oat crop that yields 7 t/ha of dry matter with a nutrient content of 2% N, 0.2% P and 1.4% K the CR element in the NLAR formula will be 140 kg N/ha, 14 kg P/ha and 98 kg K/ha.

Applying the NLAR formula for nitrogen:

$$\begin{aligned} \text{NLAR (t/ha)} &= \frac{140\text{kg} + 0 + 20}{13.8} \\ &= 11.6 \text{ TS/ha/annum} \end{aligned}$$

Applying the NLAR formula for phosphorus:

$$\begin{aligned} \text{NLAR (t/ha)} &= \frac{14 \text{ kg} + 56 + 0}{5.0} \\ &= 14.0 \text{ TS/ha/annum} \end{aligned}$$

Applying the NLAR formula for potassium:

$$\begin{aligned} \text{NLAR (t/ha)} &= \frac{98\text{kg} + 0 + 0}{12.0} \\ &= 8.2 \text{ TS/ha/annum} \end{aligned}$$

On this basis in this example potassium is the limiting nutrient and the sustainable annual spreading rate for manure is 8.2 t/ha/yr of TS for an oat crop yielding 7 t/ha.

If manure is applied with one application every 4 years in a “2 oat crops, 1 pasture year, 1 fallow” rotation, then an application of 16.4 t/ha TS can be applied in each manure spreading pass. On an “as is” basis at 75% dry matter, this equates to 21.9 t/ha “as is” aged manure spread every 4th year.

The feedlot at developed capacity of 8000 SCU will generate 1,706 TS tonnes of aged manure or compost each year (detailed in section 6.3.1.).

To utilise the tonnage generated annually using a 4year spreading rotation on a crop such as oats for hay will require 416 ha of land to sustainably utilise the fertiliser nutrient generated in the feedlot activity. With phosphorous applied at lower than the maximum NLAR estimates, the life of a closed utilisation area of 416 ha (without requiring external transfer of manure) would be 50 years. The proponent has significantly more than 416 ha of suitable cropland.

The proponent controls the following cropping land on the Premises and adjoining properties.

- Coalara feedlot premises dryland	1,197 ha
- Sendem Downs south block dryland	842 ha
- Hallswood Park dryland	1,120 ha

	3,159 ha

In addition to land areas listed above, cropland on the Premises to the east of the pivot development totals approximately 84 ha that could be bought into the manure utilisation program in the future.

Appendix 13 details the CSC operated cropping properties as the utilisation areas:

- Manure utilisation area 1 – Premises
- Manure utilisation area 2 – Sendem Downs
- Manure utilisation area 3 – Hallswood Park

Higher crop yields will feedback into higher crop demand for nutrient and thereby a shorter average rotation for manure spreading - possibly shortening to a 3-year rotation. Removal and nutrient cycling can be achieved by providing grain and hay to the feedlot as it replaces imports from other sources.

On a 4-year rotational basis, the premises site croplands could sustainably utilise up to 4,908 TS tonnes per year. The total CSC holdings could utilise 12,952 TS tonnes (17,269 tonnes at 75% dry matter) per year.

In addition, if applying a 4-year rotation, the associated nominated cropping land on Sendem Downs and Hallswood Park could sustainably utilise many multiples of the TS manure tonnes produced per year.

In the case that the soil storage capacity for P is found to be significantly lower than the calculations used in this assessment, the risk mitigation is to spread the manure over a larger area of the proponent's land. In the unlikely case that manure production is greater than estimated and local land capability is less than estimated, the proponent would secure a Category 67A EP licence and allow district farmers access to this organic resource to improve their soils.

6.4 Surface water

6.4.1 Clean water diversion

The controlled runoff area of the feedyard and support facilities will have "up gradient" diversion banks and channels constructed to ensure that clean rainfall runoff water does not flow to the effluent holding ponds. In stage 1 of the development the reserved areas for feedlot rows C and D will have rainfall on these areas captured and directed away from the effluent system. Once these rows are constructed to stand cattle in stages 2 and 3, all runoff will be directed via the drain systems to the effluent sedimentation and storage systems.

6.4.2 Effluent runoff and capture

All areas that have cattle manure deposited by feedlot cattle will be contained in the controlled drainage area. Calculations for minimum design capacity are detailed in Appendix 12.

It is planned that the effluent drains associated with lowest drainage point for each of the cattle pen rows will have the following specifications:

- | | |
|-------------------------------|------------------------|
| - Drainage reserve dimensions | 10 m wide x 510 m long |
| - Drainage reserve profile | Trapezoidal |
| - Drain base width | 5 m |
| - Drain depth | 0.2m |
| - Batters | 1:10 |
| - Approximate long fall | 0.5 to 1.0% |

The drains have a design to carry runoff from the 1 in 20year ARI storm event with a 30minute duration.

The drain reserve has been designed to ensure sufficient width for loaders and bobcats to clean any sediment settling in the drains in the dry times. The drain reserve areas will be graded and sprayed, to keep them permanently free from vegetation growth.

The west to east flowing drain at the northern end of the feedlot will have a steeper grade than the catch drains and will possibly require concrete to avoid scouring and erosion of the drain floor. The

detailed survey of the site will inform the final drain floor material requirements. Calculations for possible concrete design capacity, if required, are tabled in Appendix 12.

6.4.3 Sedimentation system

The sedimentation system will be designed in accordance with “The Guidelines – Appendix A”.

Calculations for minimum design capacity are tabled in Appendix 12.

The system will be comprised of 3 shallow flat basins (in series) for settlement of entrained solids with a compacted clay floor to facilitate cleaning of the ponds and mitigate against infiltration.

Each sedimentation structure will have the following design parameters:

- 1020 m³ of holding capacity in each basin
- maximum holding depth of 0.8 m
- batters will be 1:3
- surface area of each basin will be 1670 m²
- the basin dimensions will be 100m long and 16.7m wide
- there will be a positive slope in the basin floor to the discharge point
- A slatted concrete weir discharge assembly to enable differential release of cleaner surface layers and longer detention of loaded lower layers of water in the structures.

6.4.4 Holding pond and evaporation

In the past holding ponds were designed to accommodate the 1 in 20year, 24hour storm event or the 1 in 10year 72hour storm event. This design criteria led to ponds overtopping more frequently than the 1 in 10year event for ponds directed to irrigation and 1 in 20 years for evaporation ponds.

Since 2012 the basis for evaporation holding pond design has been changed to an annual water balance for the 95%tile wet year. This change led to a significant increase in the feedlot pond size requirement to avoid a spill frequency of no more than 1 in 20 years for evaporation ponds.

Using The Guidelines as the basis for holding pond design with the key criteria being to have a spill from the system at a frequency no greater than 1 in 20 years, the estimated required pond volume design for this site at developed capacity of 8,000 SCU, is 46.25 ML with a pond surface area of 18,500 m².

A key element of the effluent management design will be the evaporation of some effluent by seasonal application (by irrigation) of some of the available liquid in feedlot manure compost production on the manure storage and composting pad. A reserved area of up to 4.86 ha has been allocated for manure storage for the fully developed feedlot. The manure pad is within the controlled area of the feedlot design and any runoff from the process will be within a closed system and returned to the holding ponds. In the average year 30 ML will be utilised in composting operations while in the 95%tile year 50 ML will be utilised. Effluent water will not be directed to irrigation of land outside the controlled feedlot area.

The effluent holding ponds will be constructed with a holding capacity depth of 2.5 m with freeboard as recommended by The Guidelines.

The stage 1 holding pond will be 1.1 ha with a holding capacity of 27.5 ML. Stage 2 holding pond will be 0.75 ha with a holding capacity of 18.75 ML.

Method and calculations to derive these volumes are tabled in Appendix 3.

6.5 Groundwater protection

Groundwater will be protected by constructing facilities to the design standards described in The Guidelines for permeability on the pen pad surfaces, drains, sedimentation structures and holding ponds. Creating low permeability seals in, drains, sedimentation basins and evaporation ponds will ensure effluent and nutrient does not leach below the surface, to become accessions to groundwater.

Facilities will also be sized according to The Guideline volume requirements to ensure that pond discharges happen no more frequently than 1 in 20 years over the long term, based on recorded data sets of at least 100 years.

Significant groundwater monitoring conditions are specified in the premises water licence.

6.6 Flora and fauna preservation

The search of the DPLH interactive website for the development project land area did not generate any indication that the land area is a sensitive hotspot of biodiversity. (On that basis no specialist biodiversity research project was commissioned.)

Remnant trees on the largely cleared 1500hectare premises will be preserved.

Other than Western Grey Kangaroos there is little native wildlife on the premises.

The proponent does not intend to interfere with this abundant species.

6.7 Traffic flows and hours of operation

All traffic will access the site from the Coalara Road.

The feedlot development at full capacity will create new traffic flows centred on the feedlot business at a local level.

Local grain and fodder movements happen without the establishment of a feedlot however the development will redirect and shorten journeys for grain and fodder and will thus reduce stress on the road network overall.

Cattle truck movements on local roads will increase with arrivals and departures of cattle that would not otherwise come to the LGA.

Manure will largely be utilised on the Sendem Downs farm to build up soil carbon. It is unlikely that soil carbon and nutrient will reach levels necessitating export beyond the CSC farms.

Tabled below is an estimate of traffic flows on the feedlot access road at 80% and 100% of full capacity at maximum development of 8,000 SCU on site.

Feedlot Occupancy	Light Vehicles Weekly			Trucks Weekly - B/D equivalents				
	Staff	Other	Total	Local feed	Other feed	Cattle	Other	Total
80%	16	5	21	9.4	3.1	11.4	1	25.0
100%	16	5	21	11.8	3.9	14.3	1	31.0
Assumptions:				tonnes	B/D load	Trip/year	Trip/week	Trip/day
Total feedstuffs @ 80% = 8000 X 80% X 13.5 X 365/1000				31536	38	830	16.0	2.28
2000 tonne of grain supplied from CSC properties				2000	38	53	1.0	0.14
All fibre (hay, straw, silage) produced on CSC properties				4730.4	38	124	2.4	0.34
Net imported feed				24805.6	38	653	12.5	1.78
Percentage of local sourced feed				18604.2	38	490	9.4	1.35
Percentage of highway sourced feed				6201.4	38	163	3.1	0.45
Total cattle in @80% = 8000 X 80% 400 kg X 365/112				8342.8571	36	232	4.5	0.64
Total cattle out @80% = 8000 X 79% 635 kg X 365/112				13078.732	36	363	7.0	1.00
All manure will be utilised on the CSC properties.				0	0	0	0	0

Staff will be accommodated on CSC property houses. Trips on public roads will include 2 trips per staff person per week.

Figure 15: Coalara Feedlot projected traffic flows at 80% & 100% feedlot occupancy

It is estimated that the average grain truck size will be a B/Double configuration with an average pay-weight of 38 tonnes. It is estimated the average cattle truck will be a B/Double configuration with an average pay-weight of 36 tonnes.

All trucks servicing the business will need to traverse local roads which, at 80% capacity, will see an increase of 25 two-way truck movements/week on the Coalara Road. It is assumed that half this number will access the site via the Watheroo Road (12.5 movements/week) and the other half by Coorow Green Head Road (12.5 movements/week). This use of local roads includes the "Other" trucks category which includes provision for extraneous supply trucks such as fuel delivery.

"Other feed" and "Cattle" trucks will also come to the site via the Brand Highway which will increase trucks on this national road by 15.5 movements per week.

The increase of heavy vehicle movements on both local roads and the national highway are not considered significant for these road categories.

Light vehicle movements on public roads will be limited as most of the movements will be staff "on shift" traveling to and from accommodation provided on site or on adjoining and adjacent CSC properties. Feedlot management will reside permanently on the CSC properties.

Additional traffic at irregular hours will be generated during the construction of the feedlot however this will be short term and the infrastructure of the local road network is set up to handle the traffic volumes.

The normal operating hours of the feedlot will be between 0700 and 1700 hours seven days a week. During these hours, the office will be open to ensure cattle feeding can be carried out. Outside these hours the security gate will be closed. Work routines (including cattle arrivals and dispatch) will be planned to happen within the normal operating hours.

Cattle trucks arriving from significant distance that require unloading due to animal welfare considerations will be dealt with on a case by case basis. These trucks may be allowed to enter the site for unloading outside of normal operating hours based on exceptional circumstance.

AusWide Consulting prepared a Traffic Impact Assessment for the proposed development using the parameters detailed earlier in this section and reported (page 16) the following conclusions.

“The assessment of the expected daily and peak hour vehicular traffic movements generated by the proposed development reveals low levels of increased vehicular traffic. The daily traffic generated by the development is 3.91 vehicles per day at stage 1, 4.84 vehicles per day at stage 2 and 7.98 vehicles per day at stage 3. The peak hour trip rate in stage 3 is 0.8 vehicles per hour. This low level of trips generated by the proposed development would have no significant effect on the traffic using Coalara Road and Watheroo Road. The daily traffic generated by the proposed development represents only 8% of the daily traffic on Coalara Road and 4% of Watheroo Road traffic.

The traffic generated by the proposed development at stage 3 is only 8 vehicles per day and therefore will have a less than minor impact on the existing traffic using Coalara Road and Watheroo Road.

The sight distances along Coalara Road for vehicles exiting the site through Boothendarra Road has been observed as 190 metres to the north and 250 metres to the south. The observed sight distances exceed the desirable sight distance of 83 metres for a critical gap to exit into the Coalara Road traffic. The site vehicle access complies with AS/NZS 2890.1-2004 in terms of sight distances. There is adequate sight distance for the rare pedestrians on Coalara Road.

Therefore, based on the assessment presented in this report, it is considered that the proposed development will have a less than minor effect on the existing traffic in the surrounding roads and very little to no effect on the on-street parking in the vicinity of the site.”

6.8 Pesticides & chemicals

CSC is in the business of producing safe food for human consumption. The primary strategy in respect of pesticides and chemicals used in the business is to continue to explore ways of minimisation of the use of artificial pesticides and chemicals.

The bare minimum veterinary chemicals will be used in beef production at Coalara Feedlot. All chemicals will be managed in accordance with the provisions of the NFAS accreditation that the company will secure and maintain.

The NFAS deals with the management of pesticides and chemicals in sections:

- Quality Management QM5,
- Food Safety FS2, FS3, FS4, and
- Environmental Management EM1.

CSC are also aware that antibiotic resistance is a growing problem for users of antimicrobial drugs.

CSC will develop animal health management programs that are sensitive to the need to slow down the rate of development of antimicrobial resistance.

The company will use the MLA (2018) report “Antimicrobial stewardship guidelines for the Australian cattle feedlot industry” as the guiding document in the formulation of regimes and procedures to achieve this aim.

6.9 Pest and vermin control

Monitoring of pest and vermin population will be by observation.

The primary strategy to keep pests and vermin under control is to minimise food sources and breeding habitats.

Potential breeding areas will be minimised if not eliminated by good housekeeping around the mill and feedlot areas. This will include regular cleaning up of spilt feed ingredients around the milling area and feed alleys (spilled ration) which will be placed on the pen manure pad for pick up in the manure harvest process.

In addition, manure build up along pen fence lines will be pushed into the pens regularly. Once in the pen the trampling action of the cattle make the pen floor pad an inhospitable environment for fly breeding.

Regular turning and the composting process at the manure storage pad will ensure that flies and other pests do not reach significant numbers in this area.

Dead cattle will be composted by covering with straw and manure at the manure storage pad. This will ensure that crows, fox's, and other undesirable scavengers do not have access to carcasses as a food source which would lead to increasing populations over time.

If the strategies of food and habitat minimisation fail and the business experiences an increase in pest and vermin numbers because of feedlot operations, then registered extermination chemicals may be used to reduce the numbers.

6.10 Visual amenity

The feedlot is not visible to public roads or areas with access by the general-public. A minor track within the Watheroo National Park, near the boundary with the development premises, may allow glimpses of the feedlot in the distance.

The feedlot entrance and weigh bridge area will have attractive parks and gardens established with native trees and shrubs.

CSC has an existing customer base for beef sales. The proponent is keen for customers to visit the site to view the cattle in production. It is therefore the stated intention of the management that the facility, should be maintained in a “neat and tidy” condition at all times, and fit for customer inspection at any time. Facilities currently owned and managed by the proponent are testament to the level of housekeeping expected of management teams within the CSC business.

6.11 Pollution incident response management plan (PIRMP)

The business will develop and operate a pollution incident response management plan along the lines of PIRMP requirements legislated in the State of NSW in 2012.

This plan will be developed focusing on hazard identification, risk reduction and timely responsiveness.

Staff will be trained in the requirements of the PIRMP and it will be tested and reviewed annually.

6.12 Environmental monitoring and complaints register

The DWER groundwater licence for the premises has significant monitoring conditions attached. The proponents research has determined that the most significant environmental risk of the business to the environment is groundwater contamination. Monitoring this aspect is addressed in the conditions of the groundwater licence.

In addition to groundwater monitoring, the proponent intends to conduct soil analysis for each active cropping paddock on the premises at the end of each harvest cycle in the reporting year after the manure is applied to the cropland. This process will feed into future manure utilisation and ensure that targeted nutrient balance is attained.

A complaints register will be maintained by the feedlot manager detailing date and time of complaint and the nature of the issue including steps taken to address the issues raised by the complainant.

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8 Appendices

8.1 Appendix 1: The Authors

Peter Paradice B. Ag. Ec. (UNE)

Peter Paradice gained a degree in Agricultural Economics from UNE Armidale in 1978. His primary study in optional units was intensive animal industry focus on beef feedlots under Professor Yates.

Peter Paradice joined FJ Walker (a meat company that evolved through AMH to JBS) in 1979 at the Aberdeen Abattoir and then moved to Caroon Feedlot near Quirindi, NSW. After moving on from FJ Walker he proceeded to work with a significant number of feedlot and abattoir businesses over the next 27 years.

Peter Paradice was on the management team of several large feedlots and because of experience gained has been invited to design several large feedlots in his role as a consultant to industry since 2006.

Listed below in reverse chronology is the work experience of Peter Paradice.

- Director - Beef & Feedlot Industry Consultancy. February 2006 - to present
- General Manager (Large Feedlot Operation Ravensworth Feedlot) 2002 - February 2006
- Feedlot Manager. (Large Abattoir-Feedlot-Farm Complex-Rockdale Beef) 1989 – 2002
- General Manager Feedlots (Two Twynam Feedlots) 1986 – 1989
- International Management Experience Feedlots and Abattoirs (South Africa) 1985 – 1986
- Executive Officer, Meat & Livestock – Farmer Rep. Organisation (NSW LGPA) 1982 – 1985
- Management Trainee & micro-economic analyst. FJ Walker Aberdeen & Caroon Feedlot 1979 – 1981
- Bachelor of Agricultural Economics. (Majoring in Business Management) 1975 – 1978
- Higher School Certificate. 1973

Graham Barrow B. E. (Agr)

Graham Barrow gained a degree in Agricultural Engineering from Melbourne University in 1974. His primary interest was in relationships between soil and water and impacts upon productivity and the environment.

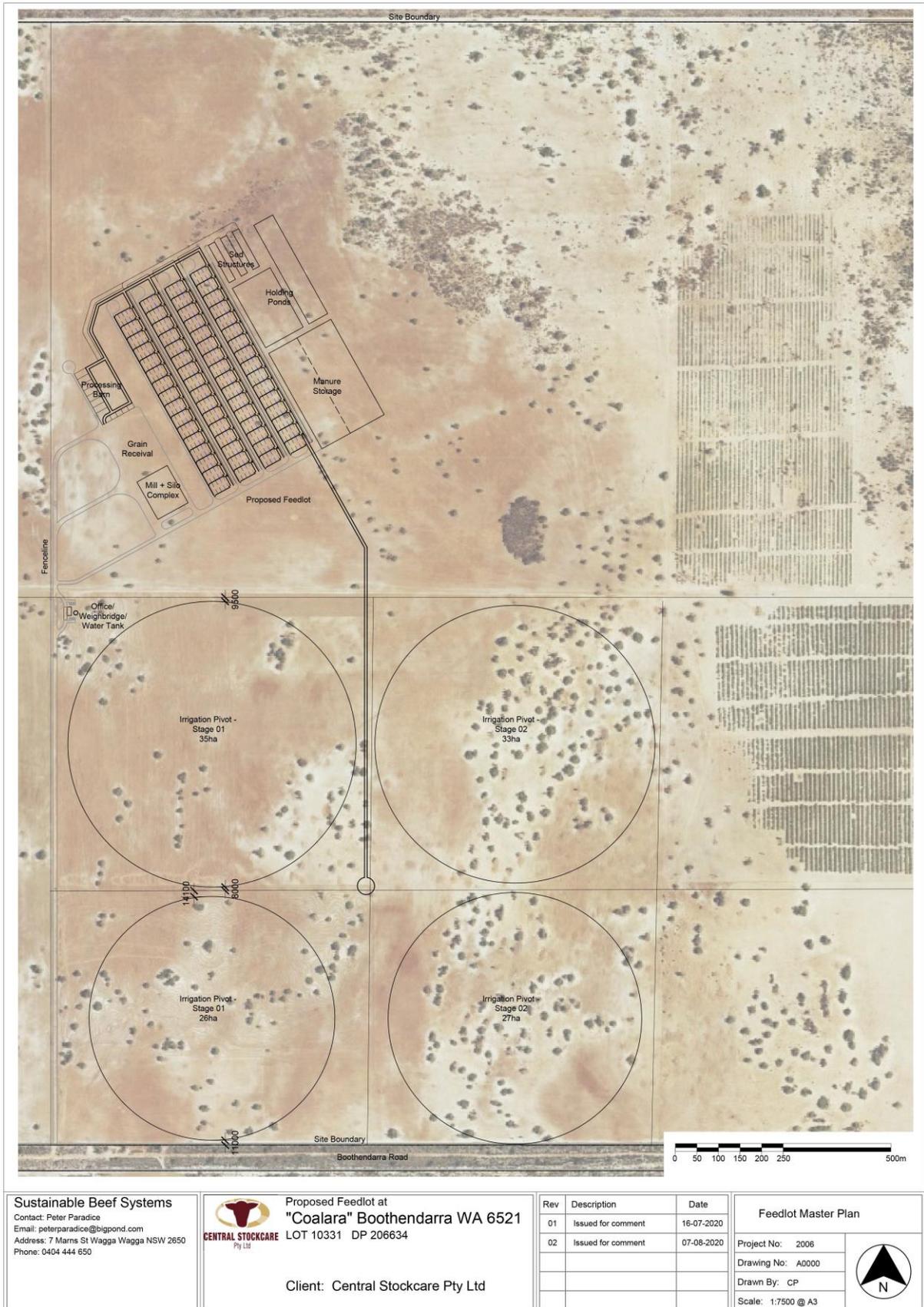
Graham joined the Soil Conservation Service of NSW in June 1975 as a Soil Conservationist providing engineering advice on dams, erosion control structures and salinity. He has subsequently worked in the fields of irrigation, horticulture, salinity, catchment management and environmental management for both government and private organisations. He currently operates as a private consultant, principally in the field of sustainable management of wastewater.

Listed below in reverse chronology is the relevant work experience of Graham Barrow.

- Self-employed Agricultural/environmental consultant. 2015 to present.
- Principal Engineer, EnviroAg Wagga Wagga, 2011 to 2015.
- Regional Manager North East, Environment Protection Authority, Victoria. 1999 to 2005.

- Senior Irrigation Advisor, Department of Natural Resources and Environment, 1998 to 1999.
- Executive Officer, North Central Catchment and Land Protection Board, 1997.
- Officer in Charge, Department of Natural Resources and Environment, Kerang, 1995 to 1997.
- Project Officer, Department of Agriculture, Swan Hill, 1994 to 1995.

8.2 Appendix 2: Feedlot design drawings



Sustainable Beef Systems
 Contact: Peter Paradise
 Email: peterparadice@bigpond.com
 Address: 7 Marns St Wagga Wagga NSW 2650
 Phone: 0404 444 650

CENTRAL STOCKCARE Pty Ltd
 Proposed Feedlot at
"Coalara" Boothendarra WA 6521
 LOT 10331 DP 206634

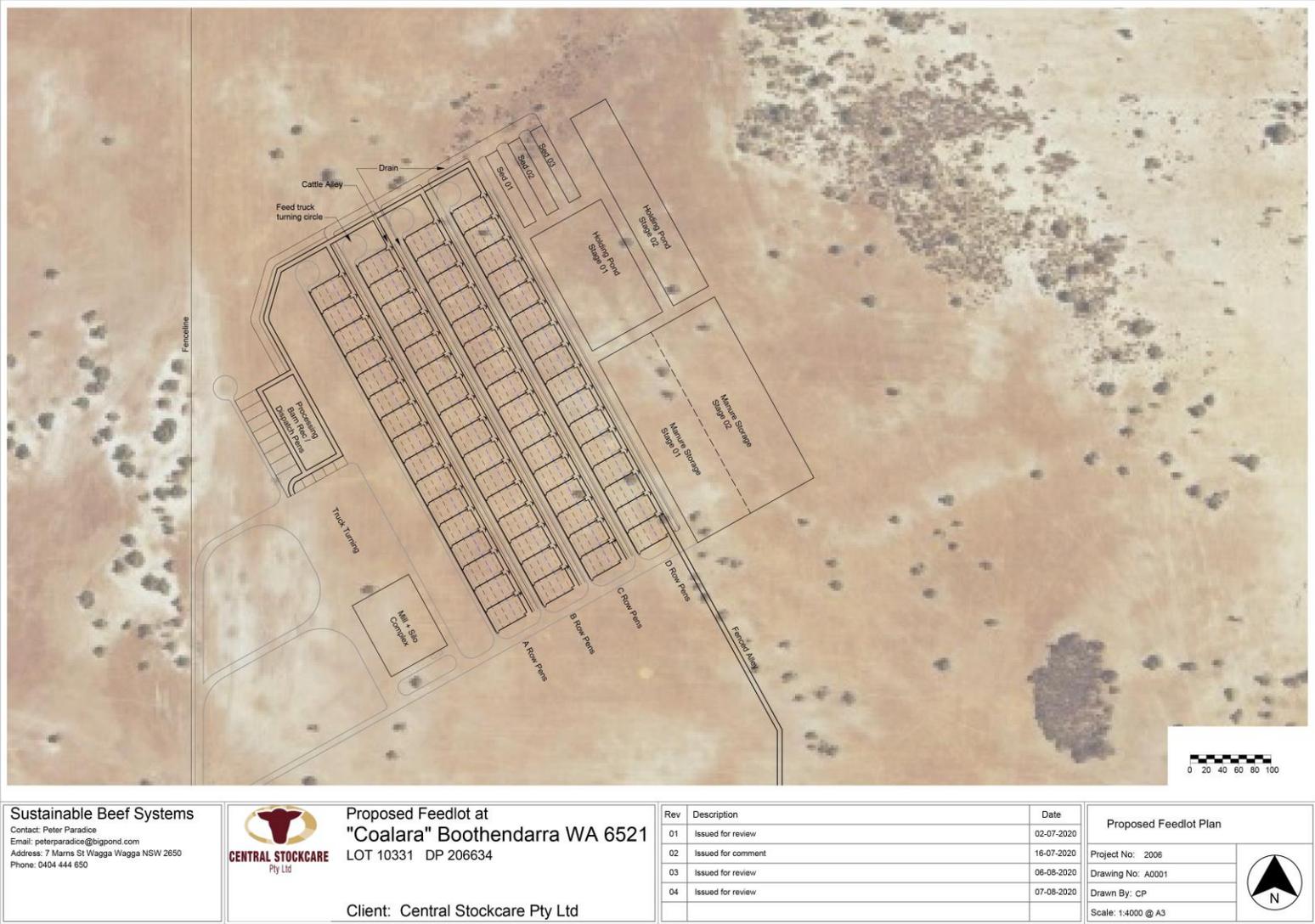
Client: Central Stockcare Pty Ltd

Rev	Description	Date
01	Issued for comment	16-07-2020
02	Issued for comment	07-08-2020

Feedlot Master Plan

Project No: 2006
 Drawing No: A0000
 Drawn By: CP
 Scale: 1:7500 @ A3

Figure 16: Feedlot master plan including proposed freshwater irrigation pivots



Sustainable Beef Systems
 Contact: Peter Paradise
 Email: peterparadise@bigpond.com
 Address: 7 Marrs St Wagga Wagga NSW 2650
 Phone: 0404 444 650



**Proposed Feedlot at
 "Coalara" Boothendarra WA 6521**
 LOT 10331 DP 206634
 Client: Central Stockcare Pty Ltd

Rev	Description	Date
01	Issued for review	02-07-2020
02	Issued for comment	16-07-2020
03	Issued for review	06-08-2020
04	Issued for review	07-08-2020

Proposed Feedlot Plan	
Project No:	2006
Drawing No:	A0001
Drawn By:	CP
Scale:	1:4000 @ A3



Figure 17: Proposed feedlot feedyard layout



Figure 18: Feedlot development Stage 1

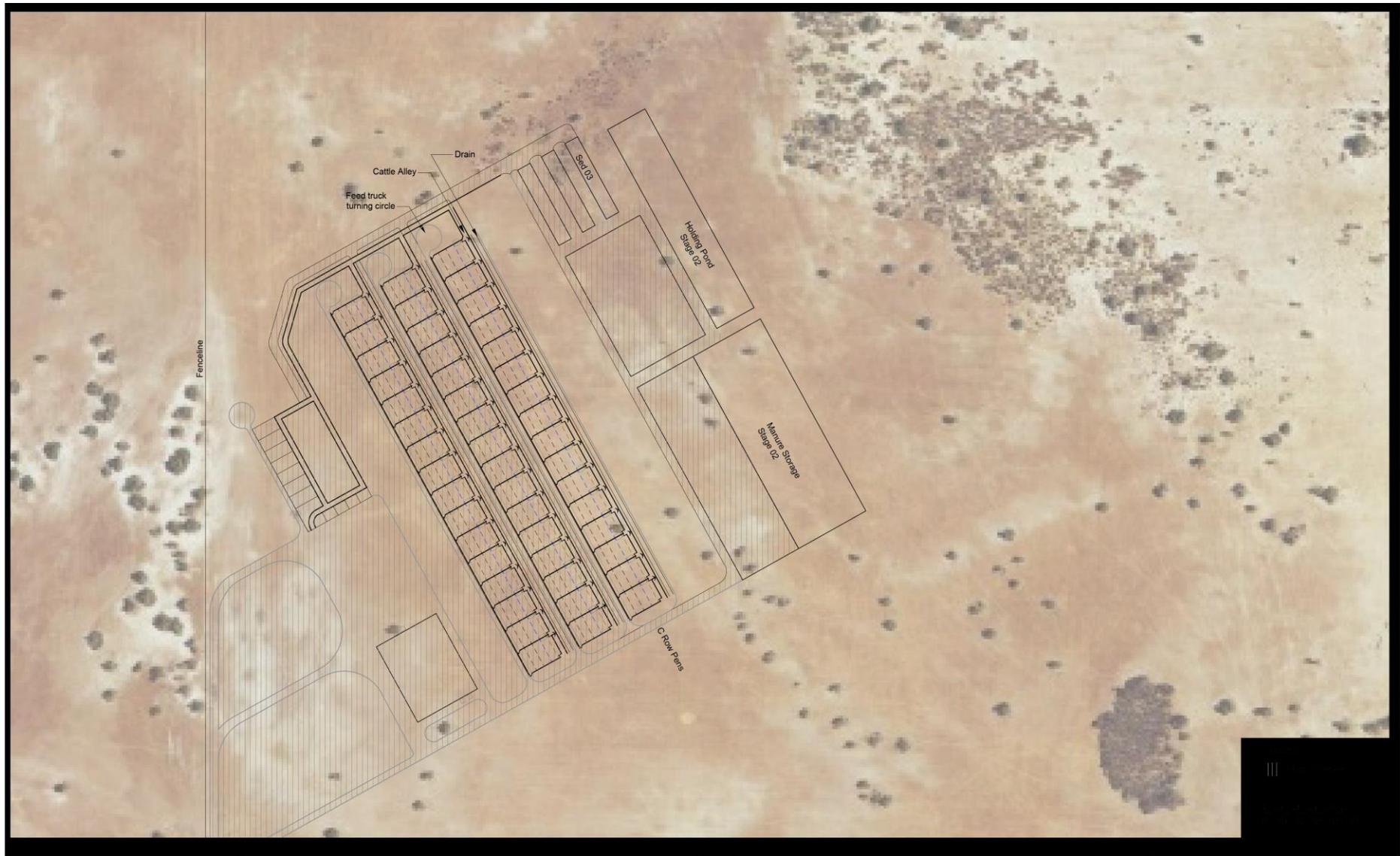


Figure 19: Feedlot development Stage 2 – add C row, sed 3, pond 2 & extend manure storage

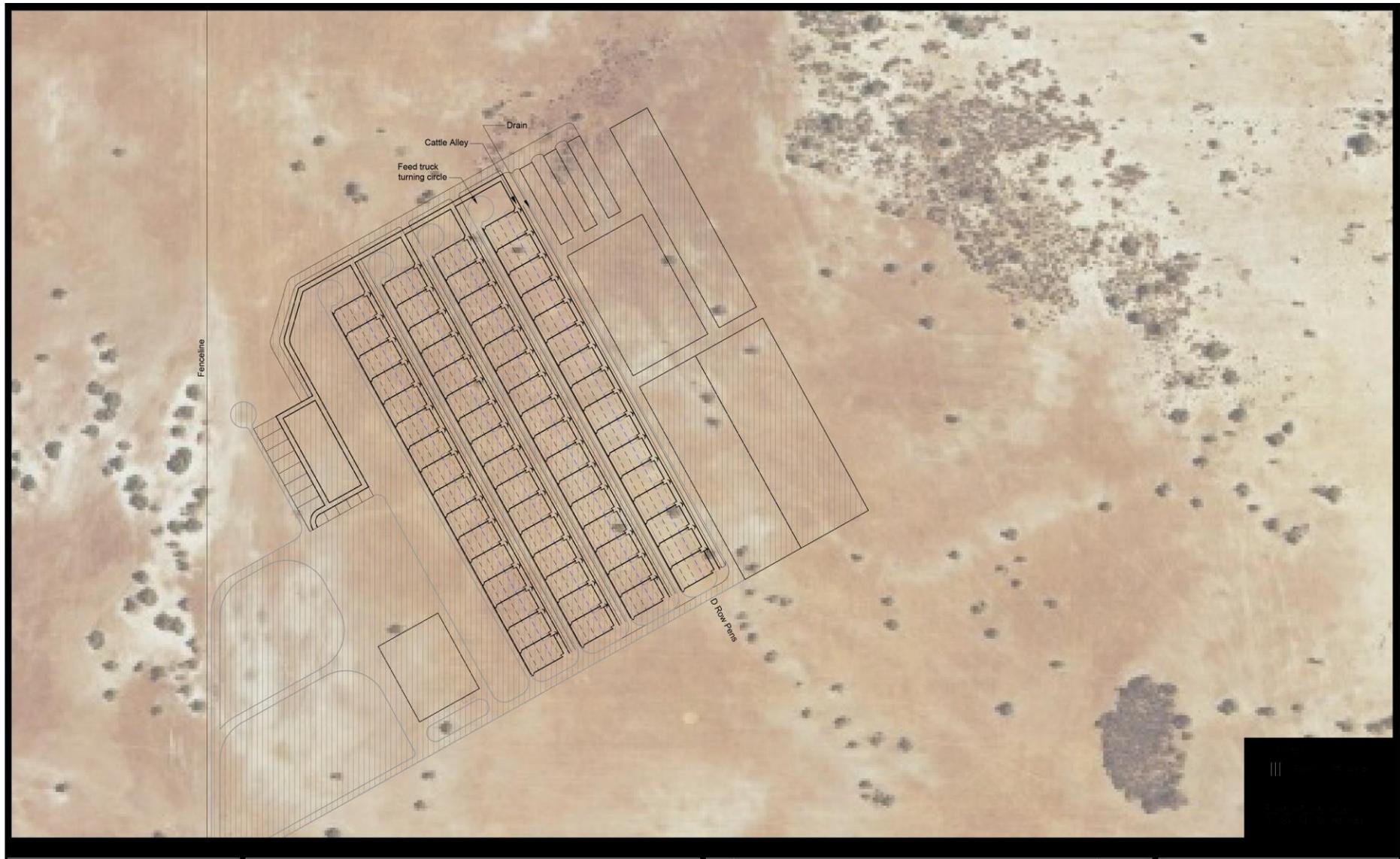


Figure 20: Feedlot development Stage 3 – addition of D row

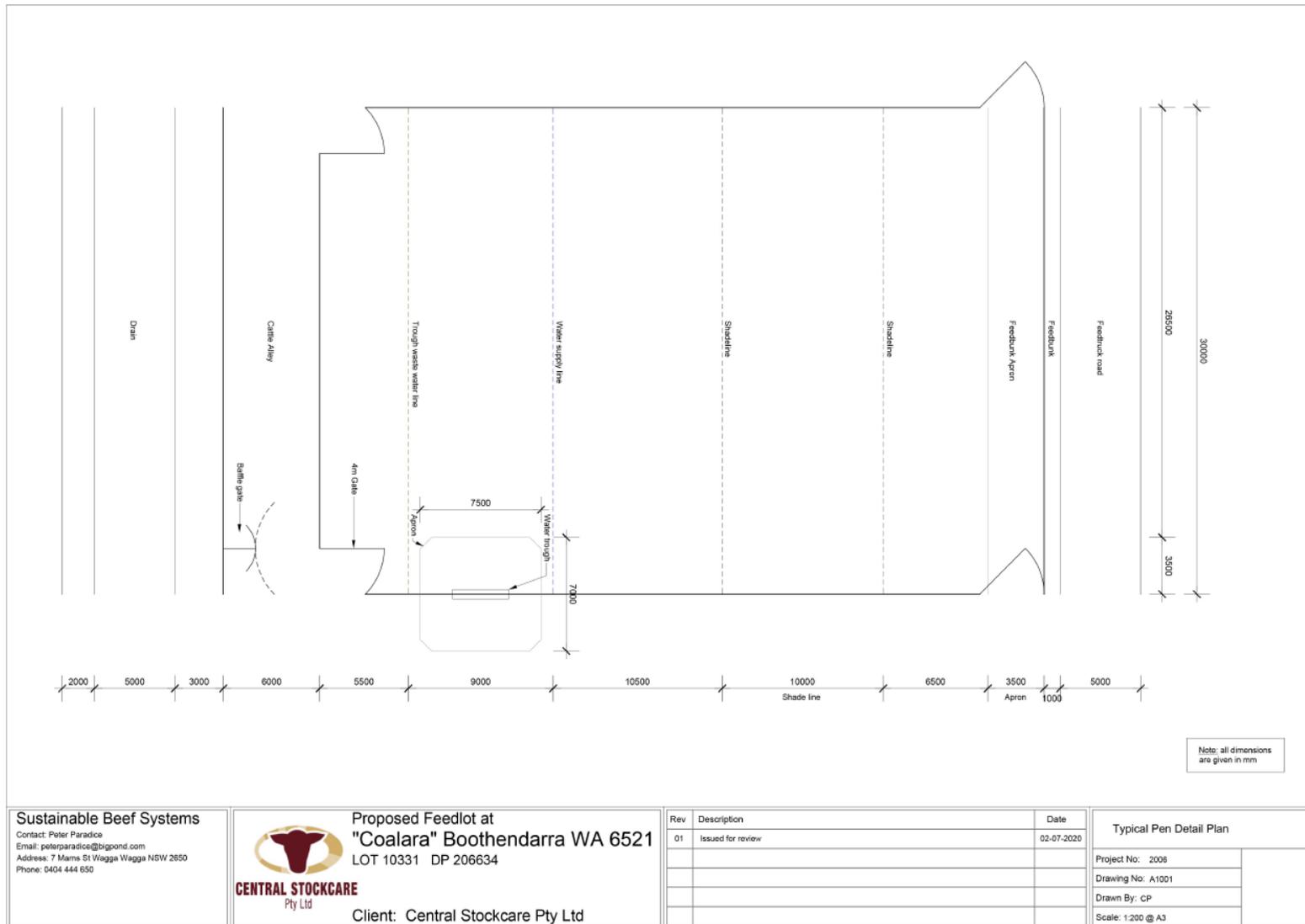
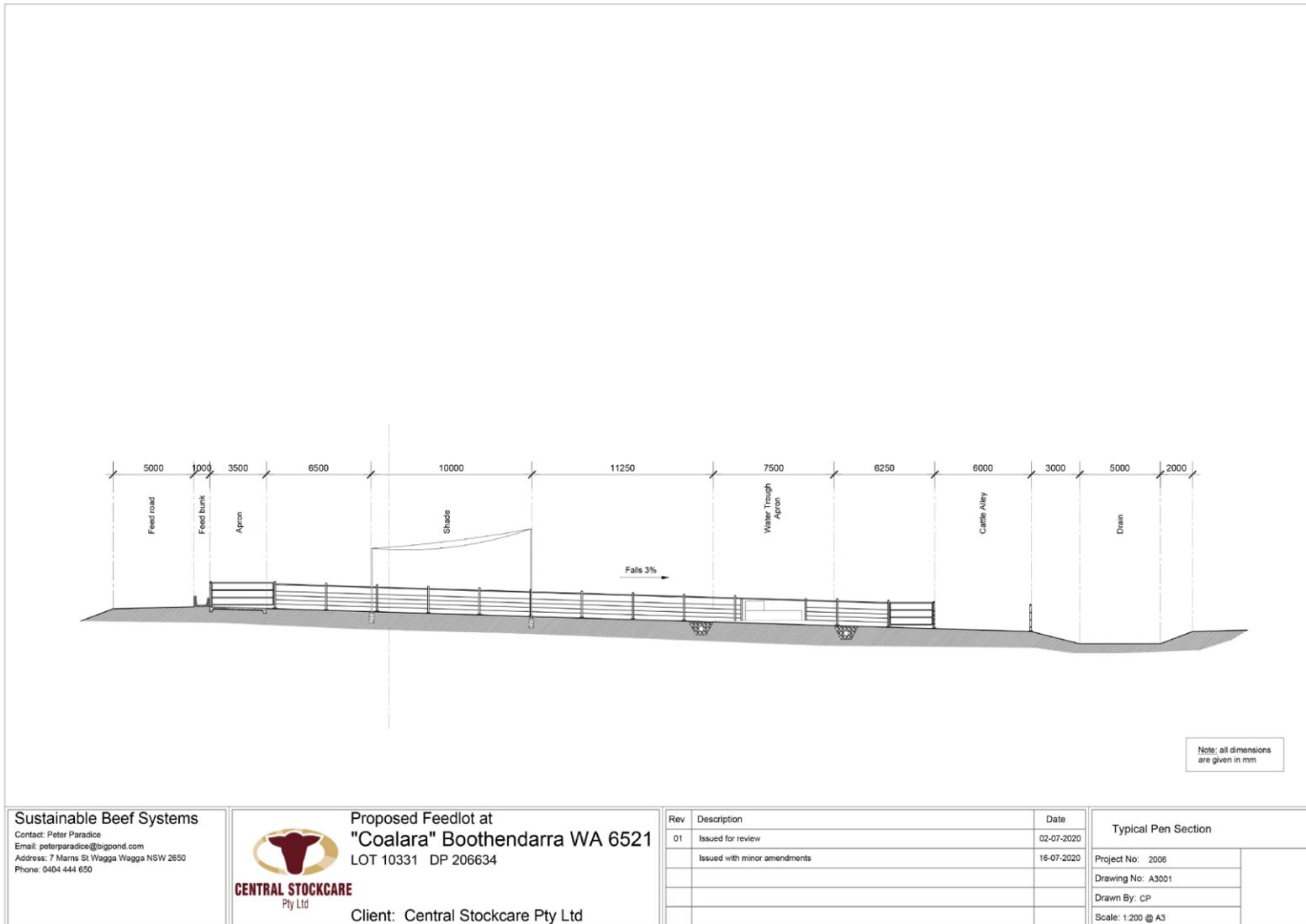


Figure 21: Typical Pen Detail Plan



Sustainable Beef Systems
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 Phone: 0404 444 650

Proposed Feedlot at "Coalara" Boothendarra WA 6521
 LOT 10331 DP 206634

CENTRAL STOCKCARE
 Pty Ltd
 Client: Central Stockcare Pty Ltd

Figure 22: Typical Pen Section

8.3 Appendix 3: Feedlot effluent pond dimension calculations

Coalara Feedlot specifications and dimensions					Aug-20	
Total Head - SCU	8000					
Head per pen - SCU	125					
Total standing area per pen - m2	1350					
Standing area per SCU - m2/hd	10.8					
Total number of pens to final stage	64					
Pen layout	Contour	Front to back				
Feed road width m	5					
Bunk width m	1					
Pen depth m	45					
Cattle alley width m	6					
Drain reserve width m	10					
Northern drain reserve length	268					
Bunk length per pen m	30					
Pen number per section #	32					
Number of sections #	2					
Rows per section #	2					
Pens per row #	16					
Manure pad and ponds areas width - m	180					
Manure pad length - m	270					
Sed terrace and pond reserves length - m	270					
Head per pen hd	125					
Bottom reserve - pen to alley m	35					
Top reserve - road to pen m	10					
Centre to centre per row m	67					
Rec & dispatch pens #	4					
Hospital pens #	2					
Post - Processing pens #	5					
Processing facility and races #	1					
				Summer Runoff Coeff Oct - Apr	Winter Runoff Coeff May - Sept	
Feedlot areas footprint - m2	Total	Stage1	Stage2			
Standing area metres	86400	43200	43200	50%	80%	
Receival/dispatch/processing barn	12000	12000		50%	80%	
Roads and drains in the feedyard	33600	16800	16800	80%	90%	
Northern drain A16 to sed terraces	2680	2680		80%	90%	
Manure storage & processing area	48600	32076	16524	40%	50%	
Top of Row Reserve areas	2680	1340	1340	40%	50%	
Bottom of Row Reserve areas + other res	24760	12380	12380	40%	50%	
Ponds and sed reserve total surface area	48600	32076	16524	99%	99%	
Total feedlot controlled area	259320	152552	106768	60%	76%	
		59%	41%			

Coalara Feedlot Runoff & Evaporation Model														RevC
Watheroo Rainfall Summary statistics for all years 1899-2020														
Model inputs														
Rainfall Watheroo	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	
Mean	13.3	16.7	19.4	21.5	55	78.8	75.6	56.3	33.6	20.5	10.3	9.3	410.3	
90th %ile annual basis	28.6	32.1	32.2	31.6	67.5	93.1	74.9	59.8	37.0	26.7	21.1	16.5	521	
95th %ile annual basis	36.1	38.8	42.6	36.2	70	100	80.2	62.8	38.3	29.6	21.3	20.7	576.6	
Highest on record by month	99.1	120.6	188.2	108	182.7	225.9	174.1	141.3	85.1	73.9	50.2	62.8		
Days inMth	31	28	31	30	31	30	31	31	30	31	30	31	365	
Monthly panevap- Moora - BOM - 1897-2004	366	333	291	173	113	73	70	91	124	193	269	360	2456	
Monthly pan evap - Coalara (Moora-3Springs)	381	348	304	187	123	76	82	98	132	207	279	371	2588	
Pan to Dam evap % WA for the zone	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	
Monthly Dam evap - Coalara	305	278	243	150	98	61	65	79	105	166	223	297	2070	
Monthly rain - Mean	13.3	16.7	19.4	21.5	55	78.8	75.6	56.3	33.6	20.5	10.3	9.3	410.3	
Runoff Coefficient by month - est page 1	60%	60%	60%	60%	76%	76%	76%	76%	76%	60%	60%	60%	67%	
Pond size - basis National guidelines spill max 1 in 10 years with irrigation to compost														
90th %ile ControlAreaCatch	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	
Irrigation Runoff ML	4.46	5.00	5.01	4.92	13.29	18.34	14.76	11.78	7.30	4.16	3.28	2.57	94.87	
Pond area m2	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	
Evap potenl ML	5.64	5.15	4.50	2.77	1.81	1.13	1.21	1.45	1.95	3.07	4.12	5.49	38.30	
Irrigation to manure compost area ML				2.69	5.46	3.00	1.00	1.00	3.00	5.00	9.50	12.00	42.65	
Net mthly ML	-1.18	-0.15	0.51	-0.54	6.02	14.21	12.56	9.33	2.35	-3.91	-10.35	-14.92		
Accumulate ML	-1.18	-0.15	0.51	-0.04	6.02	20.23	32.79	42.12	44.47	40.56	30.21	15.29	15.29	
Pond depth m	-0.06	-0.01	0.03	0.00	0.33	1.09	1.77	2.28	2.40	2.19	1.63	0.83		
Pond size - basis National guidelines spill max 1 in 20 years with irrigation to compost														
95th %ile ControlAreaCatch	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	
Evap Runoff ML	5.62	6.04	6.63	5.63	13.80	19.71	15.81	12.38	7.55	4.61	3.31	3.22	104.29	
Pond area m2	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	
Evap potenl ML	5.64	5.15	4.50	2.77	1.81	1.13	1.21	1.45	1.95	3.07	4.12	5.49	38.30	
Irrigation to manure compost area ML			3.02	2.86	5.35	3.00	2.50	3.00	3.00	5.00	10.00	13.00	50.73	
Net mthly ML	-0.02	0.89	-0.89	0.00	6.63	15.58	12.10	7.92	2.60	-3.46	-10.81	-15.27		
Accumulate ML	-0.02	0.89	0.00	0.00	6.63	22.21	34.31	42.23	44.83	41.37	30.56	15.29	15.29	
Pond depth m	0.00	0.05	0.00	0.00	0.36	1.20	1.85	2.28	2.42	2.24	1.65	0.83		
Pond size - in the mean year with irrigation to compost														
MeanYr ControlAreaCatch	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	259320	
Evap Runoff ML	2.07	2.60	3.02	3.35	10.84	15.53	14.90	11.10	6.62	3.19	1.60	1.45	76.26	
Pond area m2	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	18500	
Evap potenl ML	5.64	5.15	4.50	2.77	1.81	1.13	1.21	1.45	1.95	3.07	4.12	5.49	38.30	
Irrigation to manure compost area ML				0.57	5.36	3.00	1.00	1.00	3.00	5.00	7.00	4.35	30.28	
Net mthly ML	-3.57	-2.55	-1.48	0.00	3.67	11.40	12.69	8.64	1.67	-4.88	-9.52	-8.39		
Accumulate ML	-3.57	-2.55	-1.48	0.00	3.67	15.07	27.76	36.40	38.08	33.20	23.68	15.29	15.29	
Pond depth m	-0.19	-0.14	-0.08	0.00	0.20	0.81	1.50	1.97	2.06	1.79	1.28	0.83		

8.4 Appendix 4: Guideline separation distances

The Guidelines (Appendix B page 44) provide a detailed description of separation distance.

Figure 23 details derived separation distance guidelines and the distance to receptors for a feedlot stocked at a density of 10.8m²/SCU.

Coalara Feedlot Separation Distance Calculations							16/06/2020
The separation equation					Density		10.8
S = S1 x S2 x S3 X S4 X S5							
Where				Tree Farm	ForestHut	Watheroo	
S1	Design and management factor			63	63	63	
S2	Receptor type factor			0.3	0.3	1	
S3	Topography or terrain factor			0.9	0.9	0.9	
S4	vegetative cover factor			0.9	0.7	0.9	
S6	Wind direction factor			1.5	1.5	1.5	
Calculated S factor				22.9635	17.8605	76.545	
Head number - SCU				8000	8000	8000	
Square Root of Head Number				89.44272	89.442719	89.4427191	
Separation distance required - metres				2054	1597	6846	
Single house - metres				6000	7000		
Watheroo - small town - metres						28000	
Badgingara - small town - metres						30000	

Figure 23: Separation distance calculations Coalara Feedlot

The Works Approval Application requires distance and direction information from premises to nearby environmentally sensitive receptors and aspects. Figure 24 addresses this requirement.

Type / classification	Description	Distance + direction to premises boundary	Proposed controls to prevent or mitigate adverse impacts (if applicable)
Environmentally Sensitive Areas ¹	There are no listed ESA's in proximity of this land parcel	N/A	N/A
Threatened Ecological Communities	None known or listed in proximity to this land parcel	N/A	N/A
Threatened and/or priority fauna	None known or listed in proximity to this land parcel	N/A	N/A
Threatened and/or priority flora	None known or listed in proximity to this land parcel	N/A	N/A
Aboriginal and other heritage sites ²	None known or listed for this land parcel	N/A	N/A

Type / classification	Description	Distance + direction to premises boundary	Proposed controls to prevent or mitigate adverse impacts (if applicable)
Public drinking water source areas ³	Watheroo DWC	21 km to the ESE of the premises	N/A
Rivers, lakes, oceans, and other bodies of surface water, etc.	Jurien Bay	70 km due west of premises	N/A
Acid sulfate soils	None known or listed for this land parcel	N/A	N/A
Other			

Figure 24: Nearby environmentally sensitive receptors and aspects by distance

Figure 25 on the following page depicts the closest receptor to the feedlot. The red circle has a 6 kilometre radius from the edge of the closest pens. The closest receptor is 6 kilometres. The closest receptor is Lot 2297, Coalara Road, Boothendara also referred to as Tree Farm in Figure 18. The Guideline calculations derive a suggested minimum required separation distance of 2 kilometres.



Figure 25: Distance to nearest rural receptor - R1- 6km radius circle (Google Pro 27/06/20)

8.5 Appendix 5: WA Dept. of Planning, Lands and Heritage interactive planning data

8.5.1 Land Information

Polygon Number 580081
Land Act (Type 2) (15497886m²)
Lot Number 10331
Parent Lot Number 10331
Locality DANDARAGAN

8.5.2 Region Scheme

Details: No RS found

8.5.3 Local Planning Scheme

Shire of Dandaragan Scheme No. 7
Rural (dandaragan)
No R-code
No Restricted or Additional Uses

8.5.4 State Planning Policies

No location specific SPP's were found

The site is surrounded by land on the premises that is not in a Bush Fire Prone Area. A small area of the premises approximately 2 km to the east of the proposed feedlot site is identified as Bush Fire Prone (2019).

8.5.5 Development Assessment Panels

No DAP's were found in the locality. The development falls in Zone 5 of the DAP's.

8.5.6 Structure Plans

No Structure Plans found

8.5.7 Aboriginal Settlement Layout Plans

No Layout Plans found

8.5.8 Aboriginal Lands Trust Estate

No ALT Estate found

8.5.9 Aboriginal Heritage

No Aboriginal Sites or Other Heritage Places found

8.5.10 Historic Heritage

No Historic Heritage Places (Heritage Council) found

No Historic Heritage Local Heritage Survey (LGA) found

8.6 Appendix 6: Bore log data Agaton 12 (AG12)

AGATON 12 (AG12)

BORE COMPLETION REPORT

LOCATION AND IDENTIFICATION

OWNER	Department of Water		
LOCATION	Located about 27.3 km W-NW of Watheroo. Situated on the south side of Boothendarra Road, 4.6 km east of Coalara Road, between Locations 10331 and 10332.		
MAP SHEET	1:250 000 SH 50-10 Moora; 1:100 000 Badgingarra (2037)		
MGA REF	Zone 50	Easting 382612 mE	Northing 6652475 mN
PURPOSE / STATUS	Exploratory / Long term water level observation		
WIN PROJECT CODE			

BORE CONSTRUCTION

DRILLED BY	Lambert Drilling Co. Pty Ltd		
DRILLER(S)	A O'Brian, R Fagan		
DRILL RIG	Mayhew 2000		
METHOD	Mud rotary		
DATE	3rd March 1968 to 2nd April 1968		
ELEVATION	(NOTE: points measured above ground are NEGATIVE relative to the datum plane – ground level)		
		Surveyed levels <i>GPS Surveyed 08/06/2014</i>	Relative to ground level
	Ground level	274.89 m AHD (\pm 0003 m)	0 m
	6" Steel Casing top	275.371 m AHD (\pm 0003 m)	- 4.81 m
	Cement block		
DRILLED DIAMETER	Bore	Depth (m BGL)	Bit size in mm (inch)
	Pilot hole	11.6 to 708.7 m	152.4 (6-inch)
	Reaming	11.6 to 342.3 m	187.3 (7 $\frac{3}{8}$ -inch)
TOTAL DEPTH	708.7 m BGL		
CASING	Interval (m BGL)	Type	
	0 – 11.6	254 mm (10-inch) Steel Conductor Casing	
	0 – 342.3	152 mm (6-inch) Steel Casing; slotted over 251.1 – 263.3, 281.9 – 288 and 318.2 336.5m	
DRILLING MUD & ADDITIVES	Volclay, Lovis and caustic		
REMARKS	Cement plug at 342.3 to 352.6 m depth.		

GEOLOGICAL DATA

SAMPLING INTERVAL	3 metres (10 feet)		
LOGGED BY	J. R. Passmore, W. A. Davidson, J. J. Martins (GSWA Hydrogeologist)		
SAMPLE STORAGE	Department of Mines and Petroleum Perth Core Library, Carlisle		
CORE			
CORE NO.	INTERVAL (m BGL)	Recovery	
		Metres	%
1	91.4 – 94.5	1.0	33
2	115.8 – 118.9	0.86	28
3	182.9 – 185.9	1.68	55
4	243.8 – 246.9	0.25	8
5	269.7 – 270.7	0.58	64
6	306.3 – 306.9	0.15	25
7	336.8 – 339.9	0.20	7
8	373.4 – 376.4	1.68	55
9	428.2 – 429.5	1.22	100
10	487.7 – 490.7	2.59	85
11	592.8 – 594.4	1.30	85
12	641.6 – 642.8	1.22	100
13	702.6 – 703.2	0.61	100

LITHOLOGICAL SUMMARY LOG

Depth (m BGL)		Formation	Lithology
0	192 ^a	Leederville Formation	Sand
192	262	Parmelia Group – undifferentiated formation	Sandstone, siltstone and shale
262	640	Parmelia Group – Carnac Formation	Siltstone, silty sandstone and shale
640	709	Parmelia Group – Otorowiri Fm	Siltstone and clay

Note: a – base depth of Leederville Formation uncertain.

PALYNOLOGY SUMMARY

Depth (m BGL)	Zone	Age	Stratigraphic Unit	Comments
115.8 – 182.9	B. limbata?	Lower Cretaceous	?Warnbro Group	
269.7 – 641.6, 701	B. enaeabbaensis	Lower Cretaceous	Parmelia Gp (Carnac Fm)	

HYDROLOGICAL DATA

DEPTH (m BGL)	278.9 – 283.5	251.2-263.3, 281.9-288.0 & 318.2-336.5
FORMATION	Parmelia Group – Carnac Formation	Parmelia Group – Carnac Formation
AIRLIFT RATE (m ³ /day)	NA	655
WATER LEVEL (m BGL)	NA	61.87
WATER LEVEL (m AHD)	NA	213.02
DATE	NA	April 1968
SALINITY (TDS mg/L) ^a 448.0 – 463.3 m 116.1 – 229.2 m 223.1 – 229.2 m	441	507
CONDUCTIVITY (mS) @ 20°C	0.79	0.76

Notes: a – summation of ions

PUMPING TEST SUMMARY

TEST INTERVALS (m BGL)	251.2-263.3, 281.9-288.0 & 318.2-336.5
PUMP	Ornell turbine
PUMP INTAKE DEPTH (m BGL)	121.9
TEST TYPE	Constant rate
PUMP RATE (m ³ /day)	2182.5 (25.26 L/s) Decreasing to 2072.7 to 2127.2 m ³ /day during test
DURATION	48 hrs
MAX DRAWDOWN (m)	7.47
TRANSMISSIVITY (m ² /day)	594.6
HYDRAULIC CONDUCTIVITY (m/day)	13.7
SWL (m BGL)	61.87
DATE OF TEST	8 – 10 th May 1968
ANALYSIS METHOD	Cooper – Jacob
ANALYSIS BY	T. Bestow

MUD ROTARY DRILL CUTTING SAMPLE LOG

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
0.0	3.1	SAND	90% SAND, quartz grains from shade of brownish and bluish to transparent, grain size varies from fine to very coarse and granular, grains generally sub angular; silty sand as the matrix between the quartz grains; sorting is not too good, 10% laterite, pebble grains size lateritic chips slightly intercalated with quartz grains, traces of feldspar grains of fine grain size
3.1	6.1	SAND	The same as for 3.1m with a slight increase in laterite and less granular quartz grains
6.1	9.1	SAND	95% SAND, a very coarse grains sand with quartz of various colours, greyish, brownish, mostly bluish and colourless about 90% of sand is very coarse to granular and 10% is medium size grains; in shape angular to sub angular, sorting is fair, very slightly feldspathic, 5% laterite as for 3.1 to 6.1m
9.1	12.2	SAND	95% SANDS, the quartz grains very slightly greyish in colour, grains size varies from very fine to very coarse although about 80% of the quartz grains are of medium grain size fairly well sorted, in shape grains are generally sub-angular to angular, some ferruginised quartz grains with traces of a silty matrix; 3-4% laterite, lateritic quartz grains coarse to very coarse in size; 1-2% very minute black chips possibly lignite or some ferruginous heavy mineral
12.2	18.3	CLAY/SILT	50% CLAY, light greyish clay contaminated with the drillers mud slightly feldspathic, small quantities of kaolinite; 40% silt, very fine grains of silt, light grey in colour, made up of minute particles of feldspar and quartz; 5% sand, light greyish quartz grains, fine to very fine grain size, angular to sub angular in shape, some ferruginous quartz, 5% laterite, grains of lateritic quartz chips of grain size coarse to granular

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
18.3	21.3	SAND	95% SAND, brownish colour sand quartz grains, generally very coarse although some medium to coarse grains present. Some quartz ferruginous shape sub-angular to angular, 5% laterite, lateritic granules intercalated with quartz grains
21.3	24.4	SAND	As above, with percentage of laterite dropped and the presence of decomposed feldspar, kaolinite
24.4	27.4	SAND	As for 21.3m with traces of kaolinite
27.4	30.5	SAND	As for 21.3m and as above, a few minute black heavies, sorting not very good
30.5	33.5	SAND	93% SAND, quartz grains slightly greyish brown in colour, ranging from fine to very coarse grains, sorting is fairly well most of the quartz being coarse to very coarse, quartz grains from sub rounded to angular, slightly ferruginised, 2-3% silt, a brownish colour silt which is lightly micaceous and traces of kaolinite; 5% hematite, dark red brown chips of ferruginous matter possibly hematite
33.5	36.6	SAND	97% SAND, quartz grains grey-brown in colour, some shade of blue and blue-grey, the grains generally coarse grains although very coarse, granules, medium and fine grain present, sorting of the quartz is not too bad, grains generally sub angular to sub rounded, some quartz ferruginised and traces of laterite and black brown hematite looking chips. 2-3% silt, a light brown-grey silt of very minute quartz, particles and very slightly micaceous
36.6	39.6	SAND	95-99% SAND, sand grains quartz greyish in colour generally medium to coarse grain with a small percentage of very coarse and granular size grains and some fine grains, sorting is fairly well, grains are sub rounded to sub angular, 1-2% silt, a greyish silt mixed with traces of a fine black heavies and some kaolinite
39.6	42.7	SAND	As for 39.6m with no black heavies or kaolinite
42.7	57.9	SAND	90% SAND, sand grains of quartz greyish in colour, grain size varying from very fine to very coarse, sorting fairly poor, grains generally sub rounded, few grains of lateritic material and some of the quartz coated with a little kaolinite; 10% silt, a greyish brown silt mixed up with the minute black ferruginous heavies
57.9	61.0	SAND	95-99% SAND, light grey sand, quartz grains range from very fine to very coarse and even granular, sorting is fairly poor, the quartz grains are sub angular in shape, few quartz grains are sub angular in shape, few quartz grains are bluish-green in colour and few others are brownish, traces of silt, very small quantity of silt greyish in colour with very few flakes of mica
61.0	64.0	SAND	95% SAND, quartz grains greyish in colour generally very fine to coarse and small amount of very coarse or granular grains, sorting is poor, grains generally sub angular to sub rounded, some grains brownish, 5% silt, light brown silt with traces of mica and kaolinite material
64.0	67.1	SAND	Same above, but grains size is more medium size to very fine size, silty material increased a little
67.1	70.1	SAND	90% SAND, brownish sand, the quartz are from fine to medium grain size with a few outstanding granular sized grains, grains sub rounded and fairly well sorted, 10% silty clay, a silty clay light brownish to buff in colour mixed with drillers mud and some kaolinitic material
70.1	73.2	SAND	80% SAND, red brown sand, quartz particles are generally fine to medium grained and sub rounded, the sorting is fairly good, 20% ferruginous matter, small medium grain sized sub rounded lateritic and other ferruginous matter
73.2	76.2	SAND	SAND, a brownish red sand, quartz particles, medium very coarse grained, not well sorted, in shape sub angular two tiny kidney shaped fossils
76.2	79.3	SAND	90% SAND, light reddish brown sand where quartz are medium to very coarse grained but fairly well sorted, sub rounded to sub angular in shape, 10% ferruginous matter including some laterite of coarse grain size
79.3	82.3	SAND	Same as for 73.2m
82.3	85.3	SAND	Same as for 73.2m with less of the reddish ferruginous matter
85.3	88.4	SAND	SAND, the same as for 76.2m with some ferruginous matter and laterite
88.4	91.4	SAND	As for 88.4m well sorted
91.4	94.5	SAND	90% SAND, a brownish grey sand, quartz grains generally coarse to very coarse grained being fairly well sorted, some various coloured quartz chips, grains generally sub rounded to rounded; 5% laterite, about 5% laterite mixed with a little quartz mud at times with some feldspars; 5% silt, dark grey silt with a few chips of siltstone and mixed with a very fine quartz and feldspar parts and some drillers mud
94.5	97.5	SAND	Same as for 94.5m with a slight increase of siltstone chips and sorting not as good as at 94.5m and traces of mica in the silt
97.5	100.6	SAND	90% SAND, greyish brown sand with quartz grains from medium to very coarse, sorting is not very good, various coloured quartz grains, in shape they are generally sub-angular, some ferruginous looking quartz, and a few grains of lateritic material. 10% siltstone, small dark grey sub-rounded chips of siltstone mixed with very fine quartz grains
100.6	103.6	SAND	99% SAND, the sand is greyish in colour with a slight bluish and brownish tinge, light blue quartz (almost smokey quartz) is fairly abundant, some grains of ferruginous quartz, grains size from medium to very coarse and sorting is not good, grains are generally sub-rounded in shape, traces of mica flakes, some chips of siltstone and some lateritic material
103.6	106.7	SAND	As for 103.6m with almost no laterite
106.7	109.7	SAND	SAND, is of a greyish colour although bluish and brownish quartz chips present in quite appreciable amounts quartz grains range from very fine to very coarse and even granular, not good sorting, grains are sub-angular to sub rounded, some lateritic looking chips associated with the quartz; feldspars, creamish white grains of feldspars

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
			generally very coarse to granular in size; clay, a light grey clay forming the matrix between the sand grains with black heavies
109.7	115.8	SAND	90% SAND, dark greyish sand due to the coal colouring and clayey colouring, grains size from fine to very coarse not well sorted, some ferruginised quartz and other bluish quartz chips, the chips are sub rounded to sub angular, 2% feldspar, a creamish white feldspar very coarse to granular in size; 2-3% coal, chips of brittle coarse, 5% clay a dark greyish clay forming a matrix for the sand, feldspar and coal
115.8	118.9	CLAY	98% CLAY, a darkish grey clay looking slightly shaley; 2% sand, fine to very fine sand quartz grains, sub-angular in shape
118.9	121.9	CLAY	90% CLAY, dark greyish clay as above, with a minor amount of silt in it; 10% sand, grain greyish to colourless in colour fine to medium grain, sub rounded and fairly well sorted, some feldspar and coal chips found associated
121.9	125.0	CLAY	As above, but slightly micaceous and only traces of feldspar
125.0	128.0	CLAY/SAND	60% CLAY, a greyish (dark) clay with some amount of silt in it as for 118.9m; 40% sand, greyish sand, quartz grains from medium to very coarse, sorting not very good in shape sub angular to sub rounded, traces of granular sized feldspars and some chips of coal
128.0	131.1	SAND/CLAY	70% SAND, a greyish (dark) sand, quartz chips are from medium to very coarse and some granular, variously coloured quartz chips, in shape from sub angular to angular, minor amounts of feldspars with some coal and partially decayed plant life; 30% clay, a darkish grey clay forming a matrix for the quartz, minor amount of silt mixed with the clay
131.1	134.1	SAND/CLAY	85% SAND, a light greyish sand, quartz chips coloured dark grey by the clay, in size from medium to very coarse but fairly well sorted, in shape sub angular to angular, about 5% of quartz is feldspar chips and coal parting chips, slightly micaceous, 15% clay, a dark grey clay forming the matrix holding quartz chips together
134.1	137.2	SAND	As above, but less clay about 5% and decrease in feldspar and coal
137.2	140.2	SAND	98% SAND, greyish brown sand where quartz is medium to coarse grains, fairly loose and well sorted, chips of quartz sub rounded, some ferruginised and variously coloured quartz very slightly micaceous with traces of pyrite and coal, 2% clay, a grey brown silty clay where silt is in small amounts
140.2	143.3	SAND/COAL	Similar to above, but with a high percentage of coal, may be 40% of coal
143.3	146.3	SAND	99% SAND, grey coloured sand where quartz is from medium to very coarse grain size, sorting is fair, in shape quartz grains are sub angular, traces of feldspar and mica flakes, a fairly good amount of coal chips about 25 to 30 percent, and traces of pyrite; 1-2% clay, brownish grey clay with minor amounts of silt forming a matrix to the sand grains
146.3	149.4	SAND	As for 146.3m with no pyrite and slight increase in the clayey material and decrease in coal content
149.4	152.4	SAND	98% SAND, greyish sand where quartz are from medium to very coarse in size, fairly well sorted out, some ferruginous quartz and other coloured quartz chips, quartz grains rounded to sub rounded, and sand contains traces of pyrite, mica and feldspar with a little coal, 2% clay, a brown grey silty clay as at 146.3m
152.4	155.5	SAND	98% SAND, greyish sand where quartz from coarse to very coarse in size and well sorted, some amount of coloured quartz, fairly rounded to sub rounded, quartz contains a fair amount of pyrite and coal with traces of mica flakes, some ferruginous quartz also, 2% silt, a greyish clayey silt with mica flakes in it
155.5	158.5	SAND	As above with only traces of pyrite and less amount of coal chips
158.5	161.5	SAND	As for 155.5m with traces of feldspar but no ferruginous quartz or ferruginous matter
161.5	167.6	SAND	97% SAND, greyish coloured sand where quartz grains range from medium to very coarse, loose and well sorted, sub rounded in shape, minor amount of coal and pyrite and some amount of feldspar, some ferruginous quartz, 3% clay, a brownish grey silty clay with traces of mica flakes
167.6	170.7	SAND	SAND, a darkish grey sand where quartz is from very coarse to some granular, not too well sorted, grains sub rounded in shape, various coloured quartz chips, about 30 to 40% quartz contaminated with coal, granular chips of partly decomposed feldspar present; silt, brownish grey silt with a little of clay and small amount of tiny mica flakes
170.7	173.7	SILT/SAND	70% SILT, a greyish silt tending to become black because of high percent of coal, slightly clayey with minor amounts of mica flakes; 30% sand, a greyish coloured sand where quartz is coarse to very coarse and sorting is fairly good, grains are sub rounded in shape with very minor amounts of slightly decomposed feldspar
173.7	176.8	SILT/SAND	80% SILT, a blackish grey silt blackish colour due to coal dust in the silt, small amount of clay greyish in coloured with flakes of mica; 20% sand, a very coarse grey sand quartz grains coarse to very coarse fairly well sorted, some pyrite and feldspar grains also present
176.8	179.8	SAND	90% SAND, grey sands with quartz chips coarse to very coarse grains and minor amounts of granular grained quartz, sorting is fairly good, grains are sub rounded, some amount of coloured quartz with ferruginous quartz, about 10 to 15 percent of quartz is coal and feldspar grains and minor amounts of pyrite, 10% silt, a greyish black silt, black colour due to the coal fillings, mica flakes in the silt and small amount of greyish clay
179.8	182.9	SAND	90% SAND, grey-greenish sand where quartz grains are coarse to very coarse with minor amounts of granular grain sized quartz, sorting is fairly good and loose grains are sub rounded to rounded, some coloured quartz chips, minor amounts of feldspars and pyrite, 10% silt, grey silt with a slight greenish-grey colour due to the clayey material present, flakes of mica found with the clay and silt

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
182.9	185.9	SILT/SAND	40% SILT, a greyish silt with flakes of mica; 40% clay, a darkish grey clay forming a matrix of the sand; 20% sand, quartz grains generally very coarse but medium to coarse present in minor amounts, sorting not too good sub angular in shape, minor amounts of feldspars pyrite and some chips of coal present
185.9	189.0	SAND/SILT/CLAY	40% SAND, a greyish sand medium to very coarse grained, sorting is fair, the grains of quartz are sub rounded to sub angular, feldspar chips and pyrite with minor amounts of coal found with the sand, 30% clay, a light greenish grey clay possibly slightly shaley, 30% silt, grey in colour forming a matrix with the clay for quartz grains, minor amounts of mica flakes with the silt
189.0	192.0	SAND/SILT	60% SAND, the sand is grey in colour with quartz grains of various colours some green looking and possibly glauconite, grain size from fine to very coarse, sorting is not good, in shape sub angular, feldspar and coal chips present; 10% clay, a greyish clay slightly shaley, 30% silt, grey coloured silt with very fine grains of quartz and mica flakes in minor amounts
192.0	195.1	SAND/SILT	As for 192.0 with only about 10% silt and 80% sand
195.1	198.1		70% SAND, light grey in colour, quartz grains fine to very coarse but few grains of fine quartz, sorting is fair, grains generally rounded to sub rounded, blue, brownish and greenish brown quartz chips, some grains, possibly glauconitic, minor amounts of feldspar, pyrite and coal, some very small black heavies; 30% silt, grey coloured silt, slightly clayey with mica flakes and small very fine quartz grains mixed with the silt
198.1	201.2	SAND	90% SAND, a greyish sand with quartz grains from brownish to colourless very fine to very coarse in size, but fairly well sorted, grains are angular to sub angular in shape, a fair amount of feldspars and some pyrite grains, 10% silt, light grey coloured clayey silt with minor amount of mica flakes and some very fine quartz grains in it
201.2	204.2	SAND/SILT	Same as for 201.2m with a little more silt about 15 to 20%
204.2	207.3	SILT/SAND	70% SILT, a darkish grey clayey silt clay possibly shale forming a thick matrix for the sand grains, slightly micaceous; 30% sand, the sand is greyish in colour with variously coloured quartz particles, in grain size the quartz is from medium fairly well sorted and sub angular in shaped, minor amounts of feldspar grains in the sand
207.3	210.3	SAND/SILT	60% SAND, greyish brown sand with quartz of various colours, in grain size fine to very coarse not well sorted, sub angular in shape, some amount of feldspar grains and a fair amount of coal, 40% silt, the silt is at 207.3m but with less of clay in proportion, mica is very slight
210.3	213.4	SAND/SILT/CLAY	As above with an increase in the amount of clay with the silt and decrease in the amount of coal in the sand
213.4	216.4	SILT/SAND	70% SILT, a brownish grey silt with greyish clay, slightly micaceous and forming a matrix for the sand; 30% sand, greyish sand grains where quartz is medium to coarse grained, sorting is fairly good, small amount of feldspar in the sand, very minor amounts of pyrite
216.4	219.5	SAND/SILT	As for 210.3m with more sand, about 70%
219.5	225.6	SAND/SILT	80% SAND, light grey sand, quartz from fine to coarse in grain size but fairly well sorted because fine to medium grains not many, variously coloured from brownish yellow to colourless grains, sub rounded in shape, contains some grains of glauconite and granules of feldspars; 20% silt, a fine greyish silt mixed with some clayey material very fine grain quartz chips containing also some flakes of mica
225.6	228.6	SAND/SILT	As for 219.5m with only a trace of glauconite and about 30% of clayey silt
228.6	231.7	SAND/CLAY	50% SAND, the sand is as at 222.5m with only a slight trace of glauconite and less of feldspar, 50% silty clay, an equal amount of greyish silt and clay forming the matrix of the sand grains and very slightly micaceous and contains some coal dust giving a blackish colour to the silt
231.7	234.7	SAND/SILT	80% SAND, light grey sand with quartz particles of various colours from brownish to colourless grain size from fine to coarse grained but fairly well sorted, out, sub rounded in shape containing a little of coal chips and a few grains of decomposed looking glauconitic, a few chips of feldspar and pyrite, 20% silt, the silt is grey in colour and containing a minor amount of greenish grey clay with some black coal dust, very minor amounts of micaceous flakes
234.7	237.7	SAND/SILT/CLAY	As above, but a slight increase in the clayey-shaley content to about 30%
237.7	240.8	SILT/SAND	65% SILT, a grey silty clayey silt forming the matrix of the quartz grains in the sand, some blackish coal dust present in the silt, 35% sand, the sand has a greyish colour and the quartz grains are from fine to very coarse, poorly sorted, contains a few grains which have a clay material along the cleavage planes, a few chips of coal or lignite looking material
240.8	243.8	SAND/SILT/CLAY	30% SILT, a grey silt with some micaceous flakes; 30% clay, greyish green in colour forming the matrix of the sand grains, 40% sand, a grey very fine to medium sand, not well sorted and sub angular, some glauconite, feldspar and chips of coal, very few grains of pyrite
243.8	246.9	SILTY CLAY/ SAND	60% SILTY CLAY, a grey silty clay forming a matrix for the sand grains, minor amounts of micaceous flakes, present, 40% sand, a greyish sand where the grains are from fine to coarse and very coarse, not well sorted out. The grains are sub angular to angular, small amounts of clayey feldspars of granular size in the sand
246.9	249.9	SAND/CLAYEY SILT	80% SAND, greyish sand with various coloured grains of quartz, in size varies from fine to very coarse but fairly well sorted, rounded to sub rounded grains, some feldspars and coal chips, trace of glauconite; 20% silt grey clayey silt with micaceous flakes and some coal dust in it
249.9	253.0	SAND/CLAYEY SILT	As above, with poorer sorting, and minor amounts of glauconitic grains
253.0	256.0	SAND/CLAYEY SILT	As for 249.9m but no trace of glauconite, instead some pyrite grains

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
256.0	259.1	SAND/SILT	80% SAND, a greyish sand looking black in places because about 50% of sand is made up of coal chips, quartz grains of various colours, fine to very coarse, not well sorted, rounded to sub rounded; 20% silt, the silt is grey in colour with minor amounts of brown-grey clayey matter with it, some flakes of mica in the silt and contamination of coal dust which gives a blackish colour to the silt
259.1	262.1	SAND/SILT	80% SAND, a grey coloured sand with grains of quartz of various colours from grey to colourless, grain size from fine to very coarse but minor amounts of fine and medium sorting is fair, sub angular to sub rounded, a fair amount of feldspar, minor amounts of coal and pyrite, 20% silt, a light grey silty clay forming the matrix of the sand, clay slightly brownish, minor amounts of mica flakes in the silt, some black coal dust also present in the silty clay
262.1	265.2	SAND/CLAY/SILT	30% CLAY, a greyish brown clay containing some mica flakes in it and very slightly shaley; 20% silt, a grey coloured silt mixed with the clay and forming a matrix for the sand, contains some very sand and black coal dust; 50% sand, grey in colour, slightly brownish due to coloured quartz, fine to very coarse, poorly sorted, sub angular in shape, contaminated with some coal chips and minor amounts of pyrite
265.2	268.2	SILT/CLAY/SAND	50% SILT, as at 265.18m with some brown-yellow material; 30% clay as at 265.18m; 20% sand, grey medium to coarse grain with some ferruginous contamination, some minor amounts of feldspar, sorting fair, grains sub angular
268.2	271.3	SILT/CLAY/SAND	As above, with slight increase in the clay to about 40% and drop in silt
271.3	274.3	CLAY/SILT/SAND	40% CLAY, a light grey to dark grey clay at places slightly shaley and fairly brittle; 40% silt, the silt is light to darkish grey in colour with small amounts of mica flakes and very fine quartz, some drillers mud in it. 20% SAND, has a greyish colour, sometimes brownish because of the brownish quartz, grain is from medium to coarse with minor amounts of fine grain quartz, some sorting is fair and grains are sub angular, minor amounts of feldspar, some glauconitic grains and pyrite chips
274.3	277.4	CLAY/SILT/SAND	As above with slight increase in clay and decrease in sand to about 10 per cent
277.4	280.4	CLAY/SILT/SAND	As above, clay, silt and sand, but no glauconitic grains in the sand
280.4	283.5	SAND/CLAYEY SILT	85% SAND, greyish coloured sand, some brownish and bluish grains of sand, grain size from medium to coarse, sorting fair, sub rounded grains, some quartz grains coated with blackish brown material, minor amount of feldspar grains, 15% clayey silt, a light grey to darkish grey clayey silt with some very fine quartz grains and a little bit of mica flakes
283.5	286.5	SAND/CLAYEY SILT	As for 280.4m with grain size becoming from coarse to very coarse
286.5	289.6	CLAY/SAND	80% CLAY, dark grey clay, slightly silty, about 10 to 15% silty, clay is thick and possibly shaley; 20% sand, darkish grey sand with fine to medium grained quartz grains, sub angular in shape, fairly well sorted and contains some micaceous flakes with feldspar grains
289.6	295.7	SILTY CLAY/SAND	As above with a slight increase in the silt content of the clay, and some granular grain sized quartz
295.7	301.8	CLAY/SAND	70% CLAY, as for 289.6m, 30% sand, dark grey sand with dark coloured quartz grains in it; grain size from medium to very coarse, not too well sorted; grains are sub-angular in shape, some feldspar and coal chips with the sand grains
301.8	307.9	SILTY CLAY/SAND	80% SILTY CLAY, a dark grey clay which has about 25% of it as silt, contains some mica flakes and some minor amounts of very fine sand; 20% sand, grey, coarse to very coarse and granular sand, sorting is not too good, the quartz grains are sub-angular to angular, some quantities of fine grain, green coloured sand in the clay possibly pulverised glauconite, very slightly feldspathic
307.9	310.9	CLAY/SAND	80% CLAY, a dark grey clay and slightly brownish mixed with a small amount of silty, matter and very fine sand, some micaceous flakes, the silty material is of a light grey colour, 20% sand, a grey coloured sand slightly brownish because of some yellow-brown quartz grains, grain size from fine to very coarse and even granular, not well sorted and sub angular to angular in shape, a few chips of coal
310.9	313.9	CLAY/SILT	60% CLAY. Dark greyish clay at places of light grey shades containing some kaolinite looking material; 20% silt, light grey silt with some cream-grey very fine grains, some micaceous flakes; 20% sand, as for 310.9m
313.9	317.0	SAND/SILT	80% SAND, a grey sand slightly brownish because of yellow-brown quartz grains, quartz is from coarse to very coarse with some granules, some minor quantities of fine quartz, but sorting is fairly good and the grains are sub angular to sub rounded in shape, some quartz is slightly ferruginous, some agate looking fine grains and some ferruginous matter; 20% silt, a grey clayey silt, at places a little lighter in colour, some very fine quartz grains with the silt and slightly micaceous
317.0	323.1	SAND/CLAYEY SILT	As for 317.0m but slight increase in the clayey silt content to about 25%
323.1	326.1	SAND/CLAY/SILT	40% SAND, grey sand with some brown coloured quartz, fine to very coarse grained, not well sorted, sub angular to angular in shape; 30% clay, light to dark coloured clay; 30% silt, grey silt with some very fine sand grains and slightly micaceous
326.1	329.2	SAND/SILT/CLAY	Similar to 326.1m but an increase in the sand to about 50% decrease in silty clay
329.2	332.2	SAND/SILT	60% SAND, the sand is similar to 326.1m fine to very coarse and granular, not well sorted, angular to sub angular, various colours quartz; 40% silt, a lightish grey silt with a little of clay and slightly micaceous, small amount of very fine grain sand with the silt and some very small black lustrous heavies
332.2	335.3	CLAY/SAND	70% CLAY; a dark grey clay at places a lighter shade and looking slightly shaley, small amount of silty matter within the clay; 30% sand, the sand is similar to the sand grains at 332.2m
335.3	338.3	SAND/SILT/CLAY	60% SAND, light grey sand with a few brownish coloured quartz grains, in size from fine to very coarse, not well sorted, the grains are angular to sub angular, a little lighter in colour, some very fine quartz grains with the silt and slightly micaceous

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
			greyish silt of fine , minute grains of sand, slightly micaceous; 10% clay, a dark grey clay in the silt and sand
338.3	341.4	SAND/SILT/CLAY	Similar to sample 338.3m but with less of silt and more sand, about 70% sand
341.4	347.5	CLAY/SAND/SILT	70% CLAY, a dark grey clay but lighter at places, 10% silt, the silt is lighter grey in colour and has some micaceous flakes and black very fine grains in it; 20% sand, light grey sand, coarse to very coarse grain quartz, sorting is fair, the grains are rounded and slightly feldspathic
347.5	350.5	CLAY/SAND	As for 341.4m but more clayey and less sand, clay about 80%, the sand is medium to coarse grained
350.5	353.6	CLAY/SAND/SILT	As for 341.4m
353.6	359.7	CLAY/SILT/SAND	70% CLAY, a darkish grey firm clay; 20% silt, greyish black silt mixed with clay and contains some coal dust some very fine sand grains, 10% sand, grey sand generally coarse to very coarse grains, some medium to fine, very fine mixed with the silt, not too well sorted, sub rounded in shape, some pyrite granules in the sand
359.7	368.8	CLAY/SILT	70% CLAY, a dark grey clay slight shaley looking; 25% silt, the silt is as at 356.6m; 5% sand, medium to coarse grained sand with quartz sub rounded in shape, some very fine grain quartz with the silt, sorting not too good, some coal chips and slightly micaceous
368.8	371.9	SILT/CLAY/SAND	40% SILT, a light grey silt with some very fine quartz grains in it, slightly micaceous and some coal dust; 30% clay, a dark grey clay looking slightly shaley; 30% sand, greyish quartz grains with some brown grains generally fine grain to medium grained, fairly well sorted, sub rounded in shape, traces of mica flakes and some black carbonaceous matter
371.9	374.9	SILT/CLAY/SAND	As above, with a few black heavy lustrous grains
374.9	378.0	SILT/CLAY/SAND	As for 371.9m with an increase in sand and decrease in clay by about 10%
378.0	381.0	CLAY/SILT/SAND	70% CLAY, as for 371.86m with light grey patches; 20% silt, as for 371.86m with light grey patches, 20% silt, as for 371.86m but no coal dust; 10% sand, light grey brown, sand, quartz colourless to yellow brown colour, mostly coarse and very coarse grains; some fine grains; sub angular, sorting is fair
381.0	384.1	CLAY/SILT	80% CLAY, a dark grey clay with a few medium fine flakes of mica suspended in it; 20% silt, a light grey coloured silt mixed with the clay; some very fine quartz grains mixed in the silt
384.1	387.1	SILT/CLAY	40% SILT, the silt a light to dark grey containing some powdery grains of quartz and mica flakes; 40% clay, as for the sample at 384.05m; 0.5m sand, medium to fine grained sand, light grey coloured with some brown and yellow brown grains, some bluish, sorting is not too bad, the gains are sub angular to sub rounded, some flakes of mica
387.1	390.1	SILT/CLAY	As about with an increase in the silt and decrease in the clay by about 10%
390.1	393.2	SILT/SAND/CLAY	As for 387.1m with silt increasing to about 50% and sand 30% and to clay 20% the sand has some feldspathic grains besides pyrite and mica
393.2	396.2	SAND/SILT/CLAY	50% SAND, light grey very fine grain sand, minor amounts of coarse to very coarse grain quartz but fairly well sorted, grains sub rounded in shape, contains some carbonaceous matter with pyrite and some mica flakes; 40% silt, grey in colour with a good amount of mica flakes and some very fine grains; 10% clay, as for the sample at 387.1m
396.2	399.3	SILT/SAND/CLAY	50% SILT, dark grey with some light grey patches and some mica flakes in the silt; 40% sand, medium to very coarse grain, not too well sorted, sub rounded, some decomposed ferruginous feldspar, a few grains of pyrite; 10% clay as for 396.24m
399.3	402.3	SILT/SAND	60% SILT, a greyish brown silt with some medium fine grains of sand, looking at places slightly kaolinitic, fine mica flakes present in the silt; 35% sand, coarse to very coarse grained quartz with minor amounts of medium and fine grain quartz, not too well sorted, sub rounded in shape, a good amount of slightly decomposed feldspar and some ferruginous looking feldspar; 5% clay, a grey green clay forming a cementing matrix for the silt and sand
402.3	408.4	SILT/SAND	As for 402.3m with about 20% sand generally medium to fine grained, fairly good sorting
408.4	411.5	SILT/CLAY/SAND	As above with decrease in the amount of sand to 15% and increase in clay and silt to 15% and 70% respectively
411.5	414.5	SILT/CLAY/SAND	As above, with light grey silty bands
414.5	417.6	SILT/CLAY/SAND	As for 411.5m slightly feldspathic and carbonaceous
417.6	420.6	SILT/SAND/CLAY	70% SILT, a light grey coloured silt with some very fine grains of quartz and slightly micaceous, some brown specks, some fine black heavies; 20% sand, fine to very coarse grained sand, grey colour, poor sorting, sub angular in shape, some pyrite grains present/ 10% clay, light to dark grey clay, slightly shaley
420.6	423.7	SILT/SAND/CLAY	As above with some decomposed feldspar grains
423.7	426.7	SILT/SAND/CLAY	Same as sample 420.6m with slight decrease in silt to 60% and increase in the fine sand grains
426.7	429.8	SAND/SILT/CLAY	40% SAND, fine to very fine light grey sand, some quartz grains are medium to coarse in size, sub rounded grains and fairly well sorted; 40% silt, greyish silt with some chips of siltstone and bearing some mica flakes and dust carbonaceous matter; 20% clay, darker grey than silt with a few patches of light grey forming cementing matrix
429.8	432.8	SILT/SAND/CLAY	As above but an increase in the silt and decrease in the sand by about 15%, more of black carbonaceous matter present
432.8	435.9	SILT/SAND/CLAY	As above but clay shows slight shaley characteristics
435.9	442.0	SILT/SAND/CLAY	70% SILT, as for 429.8m, 20% sand, fine grain greyish sand, with a few coarse grains but well sorted, contains some very fine black heavy minerals, 10% clay as above but slightly darker grey in colour

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
442.0	445.0	SILT/SAND/CLAY	60% SILT, light to dark grey silt with some very fine grains of quartz and flakes of mica and some carbonaceous black dust and heavies; 30% sand, fine to medium grained light grey sand with some bluish and brownish coarse grain sand, some pyrite and some black heavies, slightly micaceous; 10% clay as for 442.0m
445.0	451.1	SILT/SAND/CLAY	As above with increase in the clay and less silt; silty 50%, sand 30%, clay 20%
451.1	454.2	SILT/SAND/CLAY	As above with some patches of greenish brown siltstone
454.2	457.2	SILT/SAND/CLAY	Similar to 445.0m but slightly more micaceous
457.2	460.3	SAND/SILT/CLAY	45% SAND, light grey, quartz grains generally very fine to medium and some minor quantities of coarse and very coarse grains, fairly well sorted grains sub angular, a fair amount of black heavies; 45% silt, dark grey silt with patchy bands of light grey silt, a moderate amount of very fine mica flakes; 10% clay, a dark grey clay as above 457.2m
460.3	463.3	SAND/SILT/CLAY	50% SAND, a creamish grey sand with fine to medium grain quartz, fairly well sorted, sub angular shape, strongly calcareous cement, some brown coated grains of quartz; 35% silt, a light grey silt as above; 15% clay, the clay is dark grey looking shaley
463.3	466.3	SAND/SILT/CLAY	As above with less of calcareous cement and some very coarse grained quartz
466.3	469.4	SAND/SILT/CLAY	As for 463.3m with only traces of calcareous cementing matter
469.4	475.5	SAND/SILT/CLAY	40% SAND, a light grey sand from fine to very coarse grain quartz with some brownish and bluish very coarse grained quartz, not too well sorted, grains sub angular; 30% silt, as above at 463.3m; 30% clay, as above at 463.3m
475.5	478.5	SAND/SILT/CLAY	As above for 475.5m with less of clay, about 15% and increase in the silt, slightly micaceous
478.5	484.6	SILT/SAND/CLAY	5% CLAY, grey clay, with chips of shale; 50% silt, light to dark grey silt, some siltstone present, very fine black heavies associated with the silt, slightly calcareous, 45% sand, light greyish sand, medium to very coarse grain, not too well sorted, some brownish quartz grains, traces of mica flakes and feldspar grains
484.6	493.8	SILT/SAND/CLAY	50% SILT, dark grey silt with some very fine quartz grains and small flakes of mica, some black carbonaceous dust 20% clay, a grey clay at places patches of dark grey forms matrix for sand grains; 30% sand, fine to very coarse even granular grains of quartz; from colourless to light brown, sub angular in shape, not well sorted, some chips of pyrite
493.8	496.8	SAND/SILT/CLAY	40% SILT, light grey silt with minor amount of darker grey silty patches; 15% clay, as for 487.7m, 45% sand, a brown grey sand, fine to very coarse in size, poorly sorted, sub angular to angular in shape, moderate amount of feldspar grains and some brown ferruginous grains, minor amount of black carbonaceous matter and a fairly high percentage of calcareous cement, also slightly micaceous and a moderate amount of black heavies
496.8	499.9	SAND/SILT/CLAY	Same as above, with less of clay and feldspar and a fairly well sorted coarse grain sand
499.9	502.9	SAND/SILT/CLAY	Same as for 496.8m but a slight decrease in calcareous matter
502.9	506.0	SAND/SILT/CLAY	As for 496.8m with only minor amounts of calcareous cement
506.0	509.0	SAND/SILT/CLAY	Again as for 496.8m with decrease in amount of sand and increase in the amount of clay by about 15%
509.0	515.1	CLAY/SILT/SAND	40% CLAY, a light grey clay with small patches of darker clay, firm and slightly shaley; 40% silt, as above slightly micaceous; 20% sand, fine to medium grain light grey sand with few very coarse and coarse grains of quartz, some brownish and bluish grains of quartz, sand is fairly well sorted, the grains are sub rounded in shape minor amounts of black carbonaceous chips, slightly micaceous and some black heavies
515.1	518.2	CLAY/SILT/SAND	As above with minor amounts of calcareous cement
518.2	521.2	SILT/SAND/CLAY	45% SILT; dark grey silt with a few small lighter grey patches, some very fine quartz grains, slightly micaceous 45% sand, fine to very fine grains grey coloured sand with a few coarse and very coarse grains of quartz, fairly well sorted, sub angular, black heavies present and some black carbonaceous matter, traces of pyrite and mica flakes; 10% clay, grey clay forming matrix of silt and sand
521.2	524.3	SILT/SAND/CLAY	As above with traces of calcareous cementing matter
524.3	527.3	SILT/SAND/CLAY	The same as for 521.2m slightly more coarse grained quartz and calcareous
527.3	530.4	SILT/SAND/CLAY	As for 521.2m with a slight decrease in the silt and sand and increase in the clay to about 20%, minor amount of calcareous cement
530.4	533.4	SILT/SAND/CLAY	55% SILT, as for above at 521.2m but no traces of mica present; 35% sand, coarse to very coarse quartz grains, some medium to fine grain, sorting is fairly good, grains sub rounded in shape, some granules of pyrite, 10% clay, the clay is as above and slightly shaley looking in places
533.4	539.5	SILT/CLAY/SAND	60% SILT, as above, a little lighter in colour; 30% clay contains some creamish white patches of calcareous matter shaley; 10% sand, grey fine grained sand, quartz very fine to medium in size, fairly well sorted sub angular in shape, just traces of black heavies
539.5	542.5	SILT/CLAY/SAND	As for 533.4m but a few grains of feldspar present and some light green silty matter
542.5	545.6	SILT/CLAY/SAND	As for 533.4m but no traces of calcareous matter
545.6	548.6	SILT/CLAY/SAND	Same as for 533.4m, silt 60%, clay 30% clay and fine grains sand 10%
548.6	551.7	SILT/CLAY/SAND	50% SILT, dark grey silt with some black powdery material very slightly micaceous; 30% clay, dark grey clay with a minor amount of calcareous matter forming the cementing matrix for the sand and silt, 20% sand, greyish very coarse grained sand, quartz generally very coarse, but some medium and coarse grain, well sorted, in shape sub rounded, no mica or feldspars or pyrites, traces of black heavies
551.7	554.7	SILT/CLAY/SAND	As above but the clay has distinct shaley characteristics and the silt is slightly micaceous
554.7	557.8	SAND/SILT/CLAY	40% SILT, as for 554.74m; 10% clay as above, 50% sand very fine to fine grained sandstone, grey in colour with some coarse and very coarse grains of quartz but fairly

DEPTH (m)		NAME (major/minor)	LITHOLOGICAL DESCRIPTION
			well sorted, sub angular to sub rounded in shape, a moderate amount of mica flakes and some yellow brown chips fairly soft
557.8	560.8	SILT/CLAY/SAND	Same as for sample at 554.7m but no yellow brown chips
560.8	563.9	SILT/CLAY/SAND	Similar to above, but with increase in the amount of clay and decrease in the sand y about 10 to 15 percent and only very slight traces of mica flakes
563.9	566.9	SILT/SAND/CLAY	50% SILT: a very dark grey siltstone, with some very fine black particles, not black heavies, the chips of siltstone are brittle and the silty particles appear to have been arranged along planes, slightly micaceous; 20% clay, dark grey clay at places having a lighter shade, minor amount of shaley chips; 30% sand, poorly sorted grey sand with quartz grains from very fine to very coarse, fine to medium grains are generally sub angular white medium to very coarse are generally rounded to sub rounded some brown ferruginous chips
566.9	570.0	SILT/SAND/CLAY	As above but with a moderate amount of calcareous cement
570.0	582.2	CLAY/SILT/SAND	45% clay, as for above; 35% silt, as for above at 569.98m, 20% sand, fine to medium grain grey sand with quartz fairly well sorted, sub angular, no ferruginous matter or feldspar but only traces of mica, no evidence of calcareous cement
582.2	585.2	SILT/SAND/CLAY	55% SILT, dark grey with a little of siltstone chip; 35% sand, a medium to very coarse grained sand with quartz fairly well sorted, sub rounded, in shape, some frosted grains of quartz, some grains coated with yellow brown material; 10% clay, as above
585.2	588.3	SILT/SAND/CLAY	As above with a slight increase in silt and decrease in sand by 5 to 10%
588.3	594.4	SILT/SAND/CLAY	As above, silt 60%, sand 30%, clay 10%
594.4	597.4	SILT/SAND/CLAY	As for sample at 588.3m slightly more clayey, silt 50%, clay 20%, sand 30%
597.4	603.5	SILT/SAND/CLAY	As for sample at 588.3m with minor amounts of calcareous cement around some of the quartz grains, and not well sorted
603.5	606.6	SILT/SAND/CLAY	Similar to above sample at 588.3m but less sandy and more silt, with the sand generally from fine to medium grained and fairly well sorted and no traces of yellow brown coating material
606.6	634.0	SILT/SAND/CLAY	60% SILT, a dark grey silt with small patches of a lighter grey shade, some very fine quartz chips associated with the silt, very slightly micaceous; 15% clay, lighter than the silt grey clay forming a matrix for the silt and sand particles; 25% sand, the sand is made up generally of very fine to fine sub rounded grains of quartz with a small quartzite of medium to coarse grained grains, fairly well sorted, some black carbonaceous chips present
634.0	637.0	SILT/CLAY/SAND	Similar to 606.6m but a slight increase in the clay content to about 25% and decrease in silt and sand
637.0	643.1	SILT/CLAY	50% SILT, dark grey silt fairly loose but a few chips of siltstone which exhibit some directional texture, slightly micaceous; 45% clay, light grey to dark grey clay generally dark grey in colour, slightly shaley; 5% sand, fine to medium grained sand, generally colourless to white and frosted quartz, sorting is quite well, the grains are sub angular to sub rounded in shape, very minor amount of black carbonaceous material
643.1	664.5	SILT/CLAY	Similar to 637.0m but at 658.4m and 661.4m the quartz grains are fine to coarse grained and not well sorted, and at 664.5m a few patches of light grey silt
664.5	667.5	SILT/CLAY/SAND	60% SILT, as for description at 637-643.1m, 25% clay, dark grey clay as for 637-643.1m; 15% sand, poorly sorted greyish coloured sand with quartz grains ranging from fine to very coarse, generally sub-rounded in shape, a few flakes of mica, some chips of black carbonaceous matter and some decaying vegetation
667.5	670.6	SILT/SAND/CLAY	20% clay, a dark grey clay mixed with the silt and some calcareous cement; 40% silt, a grey silt with chips of siltstone, some flakes of mica (biotite possibly); 40% sand, poorly sorted sand, quartz grains from fine to very coarse, some grains of ferruginous quartz, a fairly high percentage of calcareous cement, slightly micaceous
670.6	673.6	SILT/CLAY/SAND	As above with less sand, about 25% and more of silt and clay about 50% and 25% respectively
673.6	676.7	SILT/CLAY/SAND	60% SILT, as for sample 670.6m; 30% clay as for sample at 670.6m; 10% sand, coarse to very coarse grey quartz, angular to sub angular, moderately well sorted, trace of feldspar, minor amounts of mica flakes and some patches of calcareous cement
676.7	679.7	SILT/CLAY/SAND	Similar to sample above, but more silt 70% and less clay 20%, and only traces of calcareous cement
679.7	691.9	SILT/CLAY/SAND	80% SILT, dark grey silt containing minor amounts of fine flakes of mica and some very fine grains of quartz; 10% clay, lighter grey clay with traces of calcareous matter; 10% sand, coarse to very coarse sand quartz, traces of feldspar and mica flakes, sorting moderately angular grains, traces of black heavies
691.9	694.9	SILT/CLAY/SAND	As for above at 679.7-691.9m but with more clay about 25% and less silt 65%, no trace of calcareous cement
694.9	698.0	SILT/CLAY/SAND	As for 679.7-691.9m sample with no trace of calcareous cement
698.0	701.0	SILT/CLAY/SAND	As above with patches of light grey silt
701.0	707.1	SILT/CLAY/SAND	As above with a moderate amount of calcareous cement and traces of black carbonaceous matter
707.1	708.7		No sample

DRILL CORE DESCRIPTIONS

The cores are described by units from top to bottom.

<i>Core 1. (91.4 to 94.5 m), Recovery 1.02 m</i>	
0 – 0.15 m	Claystone; pale creamy brown v. well sorted and uniform in colour. Slightly silty and containing v. minor fine-grained, sub-angular quartz and v. minor fine-grained black carbonaceous material. Possibly kaolinitic.
0.15 – 0.25 m	Claystone; as above but containing patches of sandstone – fine to v. coarse grained, sub-rounded quartz, micaceous, minor weathered white feldspar, minor carbonaceous plant material.
0.25 – 0.51 m	Claystone; as the above 0 – 0.15 m section, but becoming more silty towards the 0.25 m level. Contains more black carbonaceous material (possibly lignite). V. weakly fissile due to the carbonaceous material
0.51 – 0.58 m	60% Siltstone; pale creamy brown, sandy and clayey.
0.58 – 0.64 m	25% Sand; v. fine-grained to v. coarse-grained quartz and minor feldspar, poorly sorted, sub-angular to sub-rounded. Minor fine-grained black heavy minerals, minor fine-grained pyrite. Micaceous. Minor lignite material. Ferruginised quartz grains quite common.
0.64 – 1.02 m	15% Clay; creamish-white, possibly kaolinitic.
<i>Core 2. (115.8 to 118.9 m), Recovery 0.86 m</i>	
0 – 0.86 m	Siltstone; grey, sandy and clayey, fairly well sorted, sub-angular to sub-rounded quartz. Abundant mica and minor fine-grained black heavy minerals. V. abundant brownish-black carbonaceous plant remains. Between the 0.30 m – 0.51 m section the plant material has been preserved as large flakes up to 5cm in length which causes the siltstone to fracture readily
<i>Core 3. (182.9 to 185.9 m), Recovery 1.68 m</i>	
0 – 0.76 m	Siltstone; whitish grey, sandy, clayey, compact
0.76 – 1.07 m	80% Silt
1.07 – 1.68 m	10% Sand; fine to v. coarse-grained quartz and minor partially weathered feldspars. Frosted, sub-rounded to sub-angular, poorly sorted. Minor ferruginised quartz grains. Minor black carbonaceous plant material; in patches more abundant. Minor fine grained blackish-green glauconite.
<i>Core 4. (243.8 to 246.9 m), Recovery 0.25 m</i>	
0 – 0.05 m	Sandstone; V. silty and slightly clayey. Grey v. poorly sorted fine to v. coarse grained quartz and feldspar, sub-angular to angular and frosted. Minor black carbonaceous plant remains, minor fine-grained pyrite and black heavy minerals.
0.05 – 0.25 m	Siltstone; Sandy and clayey. Sand as above but finer grained and containing more carbonaceous plant remains giving poorly bedded structure.
<i>Core 5. (269.7 to 270.7 m), Recovery 0.58 m</i>	
0 – 0.58 m	Siltstone; light grey, clayey, micaceous with small amount of fine carbonaceous material, few coarse quartz and feldspar grains, subangular. Poorly fissile.
<i>Core 6. (306.3 to 306.9 m), Recovery 0.15 m</i>	
0 – 0.15 m	Shale; light grey, silty, micaceous, with minor fine carbonaceous material, some coarse quartz and feldspar grains, subangular to subrounded. Moderately fissile.
<i>Core 7. (336.8 to 339.9 m), Recovery 0.20 m</i>	
0 – 0.13 m	Sandstone; quartz, grey, silty and clayey, very fine grained with a few coarse grains. Very micaceous, fine carbonaceous material, some very fine black heavy mineral.
0.13 – 0.14 m	Sandstone; quartz, grey-brown, with clayey matrix, coarse grained, poorly sorted. Grains angular to subangular. Black heavy mineral, mica.
0.14 – 0.20 m	Siltstone; grey, micaceous, slightly sandy, containing dark grey clayey bands. Fine carbonaceous material, minor v. fine black heavy mineral.
<i>Core 8. (373.4 to 376.4 m), Recovery 1.67 m</i>	
0 – 0.71 m	Sandstone; greenish brown, silty and slightly clayey. Fine-grained, sub-angular, fairly well sorted quartz some of which has been stained green and some ferruginised. V. abundant mica – greenish-black, fine grained, possibly biotite. Minor feldspar, minor black carbonaceous material, minor black carbonaceous material, minor pyrite and minor black fine grained heavy minerals. The presence of mica produces poorly formed micro-banding

0.71 – 1.47 m	Sandstone; Pale green, v. silty and slightly clayey with nodules of white kaolinitic clay still preserved. As for the 0 – 0.71 m section but more silty, more black heavies, less micaceous and paler in colour.
1.47 – 1.60 m	Siltstone; greenish-grey, clayey and slightly sandy. Micaceous and becoming coarser-grained towards the 1.60 m level
1.60 – 1.67 m	Sandstone; as for the 0 - 0.71 m section but more silty and showing better defined micro banding due to orientation of the mica flakes.
<i>Core 9. (428.2 to 429.5 m), Recovery 1.22 m</i>	
0 – 1.22 m	Sandstone; pale greenish-grey. V. silty and slightly clayey. V. fine to medium-grained sub-rounded quartz, moderately sorted, frosted. V. minor feldspar, abundant mica, random patches of brownish-black carbonaceous plant material. Fair amount of fine-grained black heavy minerals. The core is v. compact and v. uniform. V. minor fine-grained pyrite. Cementing material is calcareous.
<i>Core 10. (487.7 to 490.7 m), Recovery 2.59 m</i>	
0 – 2.59 m	Sandstone; grey green, silty and slightly clayey. V. fine to fine-grained quartz, well sorted, sub-rounded and slightly frosted. V. minor feldspar, and ferruginised quartz grains. Abundant mica (biotite). Fair amount of fine-grained black heavy minerals. Minor pyrite but in places nodules up to 12.5 mm in diameter are present as concretions.
<i>Core 11. (592.8 to 594.4 m), Recovery 1.30 m</i>	
0 – 0.05 m	Shale; Grey, slightly greenish. Minor amount of quartz. Fine to medium size. Moderately sorted. Some ferruginous coated quartz grains. Sub-rounded quartz grains. Mica flakes (possibly biotite). Clay shows directional property. Fracture uneven but generally parallel to directional plane.
0.05 – 0.10 m	Shale; Grey with faint greenish colour. Well compacted, weakly fissile. V. slightly silty. Quartz grains embedded in the shale. Medium to v. coarse & even granular quartz grains. Sub-rounded when medium in size but sub-angular to angular in coarse to granular grained quartz. The sand grains poorly sorted. Micaceous.
0.10 – 0.20 m	Shale; the shale is as above but with less sand (quartz) grains. The grains are generally medium to v. coarse, poorly sorted. Angular to sub-angular. Some dark coloured quartz. Micaceous. At 0.20 m a fern fossil preserved along the plane of fracture
0.20 – 0.51 m	Shale; Grey with v. faint traces of green-brown clay. Well compacted. Moderately fissile breaking along somewhat parallel planes. The planes making a v. small angle with the axis of the core. Minor amount of silty material, slightly clayey at 0.25 m. Moderate amount of mica flakes (possibly biotite) throughout. Sand grains, quartz embedded in the shale throughout. Generally coarse to granular in size. Grains are angular to sub-angular in shape. Sorting is poor. At 0.48 m a bed of sandstone about 6 mm thick and showing to have a bedding plane making an angle of about 75° with the axis of the core or about 10° with the fracture plane of the shale. The sandstone is made up of quartz with a few grains of feldspar. Coarse to v. coarse grain in size, subrounded in shape and moderately well sorted. Dip of sandstone bed will therefore be about 15° to 20°.
0.51 – 1.30 m	Shale; Light grey with traces of greenish colour shale. Well compacted and moderately fissile. The fracture planes dips about 5°. V. minor amount of silt. Light grey clay to be found at approx. 0.53 m, 0.69 m and 0.79 m. Shale and clay is micaceous (possibly biotite). Sand grains found embedded throughout the length of the core. At places slight concentration of the quartz grains at 0.53-0.58 m and 0.65–0.66 m, 0.79 m, 0.86-0.89 m. At 0.79 m a thin bed of sandstone about 2.5 mm in thickness having approx. same dip as shale. Medium to coarse grained sub-angular, slightly micaceous.
<i>Core 12. (641.6 to 642.8 m), Recovery 1.22 m</i>	
0 – 0.61 m	Siltstone; Light grey siltstone, thinly banded with darker grey siltstone. The bedding of the siltstone has an approximate dip of about 30°. The core breaks up along this plane. Loosely parted or compacted. Siltstone composed of v. fine grains of quartz and some ferruginous quartz. Flakes of mica (both biotite and muscovite looking) and a fairly moderate amount of black heavies. Minor amount of grey-grey clay and at places bands or also patches of clay and shale c.f. 0.20 m, 0.51 m, 0.61 m.
0.61 – 1.22 m	Siltstone; Light grey siltstone with thin bands of darker grey siltstone. The contact planes or bedding planes of the siltstone dip by about 30°. Not that

	well compacted and easily breaks along the bedding planes. As above the siltstone is made up of some v. fine grains of quartz, angular to sub-angular in shape and well sorted. Moderate amounts of mica flakes (both muscovite and biotite) and black heavies. Bands and patches of clay occur at 0.66 m, 0.71 m, 0.76 m, 0.84 m, 0.94 m, 1.09 m.
<i>Core 13. (702.6 to 703.2 m), Recovery 0.61 m</i>	
0 – 0.53 m	Siltstone; Light grey siltstone slightly buff coloured. V. loosely compacted. Not bedded generally but from 0.48 m – 0.53 m faint evidence of horizontal bedding exists. The siltstone is generally made up of v. fine grained quartz chips angular in shape and well sorted. Minor amounts of black v. small carbonaceous matter and some brown ferruginous matter. A fairly moderate amount of mica flakes (both biotite and muscovite). Black heavies are present but in very minor amounts.
0.53 – 0.61 m	Shale; grey shale beds interbedded with thin beds of light grey siltstone. The shale has horizontal to a very small angle of dip about 5° maximum. The shale and siltstone beds are slightly micaceous and contain minor amounts of black heavies and some carbonaceous matter.

PALYNOLOGY

Palynology from Agaton 12

Top Depth ft	Top Depth m	Sample type	Playnology Zone	Suggested Formation	Local unit	Comments
380	115.8	CC	<i>B. limbata?</i>	Warnbro Gp	A	Moderate assemblage lacking diagnostic species
600	182.9	CC	<i>B. limbata?</i>	Warnbro Gp	A	Assemblage dominated by <i>Cyathidites-Dictyophyllites</i> with few other spores. Possible back swamp facies
885	269.7	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	Indet.	Common <i>P. ingramii</i> . Typical <i>Parmelia</i> Assemblage.
1105	336.8	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E?	Some Permian & Triassic reworking
1225	373.4	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E?	Low yield
1405	429.5	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Low yield
1600	487.7	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Nearly barren
1945	592.8	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Low yield
2105	641.6	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm)	E	Low yield
2300	701	CC	<i>B. enaeabbaensis</i>	Parmelia Gp (Carnac Fm or Otorowiri Fm)	E	High diversity assemblage with common Permian and Triassic reworking and some Jurassic.

The 115.8 m sample contains a diverse spore-pollen assemblage that lacks index species. There is no strong evidence for either the *B. limbata* or *B. enaeabbaensis* zones. The absence of any of the diagnostic *B. enaeabbaensis* Zone species and the sandy nature of the lithology suggests this sample is from the Warnbro Group, but on the available data it is not possible to determine a stratigraphic position in this unit.

The 182.9 m sample contains a rich assemblage that is almost monospecific, i.e. *Cyathidites* type pollen that are all obviously from the same plant source comprise about 98% of the assemblage. The only other spores present are a few *Contignisporites cooksoniae*, *Ischyosporites crateris* and possible specimens of *Concavissimisporites* and *P. horridus*, which may be reworked. Similar assemblages have been seen before in the Leederville Fm near Perth and are thought to represent back swamp facies in a fluvial sequence (see Backhouse, 1988). However, diagnostic *B. limbata* Zone species are not present, which is typical of this type of assemblage. Therefore although the samples from 115.8 m and 182.9 m are considered to be from the Warnbro Gp this can not be demonstrated unequivocally.

Samples from 269.7 m to 701 m are all placed in the *B. enaeabbaensis* Spore-pollen zone. The 269.7 m sample contains relatively common *Pilosporites ingramii*, and some *Nevesisporites harleyii*, *N. undatus*, *Januasporites multispinus* and *Matonisporites agatonensis*, and is certainly from this zone. From 336.5 m to 641.6 m the spore-pollen assemblages are not as rich and tend to be less diverse, but are still consistent with the *B. enaeabbaensis* Zone.

The 701 m sample is highly diverse with many of the index species found in the 269.7 m sample, with the addition of *Biretisporites enaeabbaensis*. It also contains quite common reworked material of Permian, Triassic, Late Jurassic and Early Jurassic age. This abundance of reworking is seen elsewhere in parts of the Carnac Fm and also sometimes in the Otorowiri Fm. The Otorowiri Fm is essentially defined by its distinctive gamma log signature, which can not be seen on the available electric log.

PALAEONTOLOGY REPORT NO. 24/1968 DATE: 21st May, 1968

PALYNOLOGY OF AGATON 12 BOREHOLE

MATERIAL AND LOCALITY: Eleven cores were supplied from the rotary borehole Agaton 12, situated about 1½ miles west of Watheroo townsite (4 miles north of Agaton 7).

SAMPLE NOS. AND LITHOLOGIES OF THE CORES:

300' - 310' (F7818): pale brown mudstone
 380' - 390' (F7819): light grey micaceous siltstone
 600' - 610' (F7820): light grey mudstone
 885' - 888' (F7821): light grey siltstone
 1105' - 1115' (F7822): light grey siltstone
 1225' - 1235' (F7823): light grey clayey siltstone
 1405' - 1409' (F7824): light grey siltstone
 1600' - 1610' (F7825): light grey siltstone
 1945' - 1950' (F7826): light grey sandy mudstone
 2105' - 2109' (F7827): light grey shaly siltstone
 2300' - 2307' (F7828): light grey hard silty shale

SUBMITTED BY: Mr. J. R. Passmore and Mr. T. T. Bestow, Hydrology Division, on Requisition Nos. 2906, 2910 and 2917 during a period from the 25th March to 3rd May, 1968.

REPORT: Preliminary results of palynological study of the first seven cores, have been given in Palaeontological Notes of 28th March and 10th April (on file 154/1968).

Of the 11 samples prepared only that from the first core (300' - 310') is barren of palynomorphs. All others contain assemblages indicating a Lower Cretaceous (Neocomian-Aptian) age.

Cicatricosisporites australiensis, the species being used as the index fossil for Zone C₂ of the South Perth Formation, is present in most samples between 380' and 1225'.

This interval is hence considered to represent Zone C₂.

One sample from this interval which does not contain C. australiensis is that from the 600' to 610' core. This contained a most unusual assemblage; very clean and with many specimens but limited in species. About 98 per cent of the assemblage consists of simple, laevigate trilete spores representing no more than two species. The remainder were nearly all, other trilete species. This may indicate that the sample treated included mainly one ^{fern} ~~fern~~ sporangium or alternatively the sediment was deposited in an environment in which only ferns were present.

The five bottom cores (1405' to 2300') do not contain C. australiensis although some assemblages contain many species (the 2300' to 2307' core is particularly rich). This suggests the strata from 1405' to 2300' comes from Zone C₁ of the South Perth Formation.

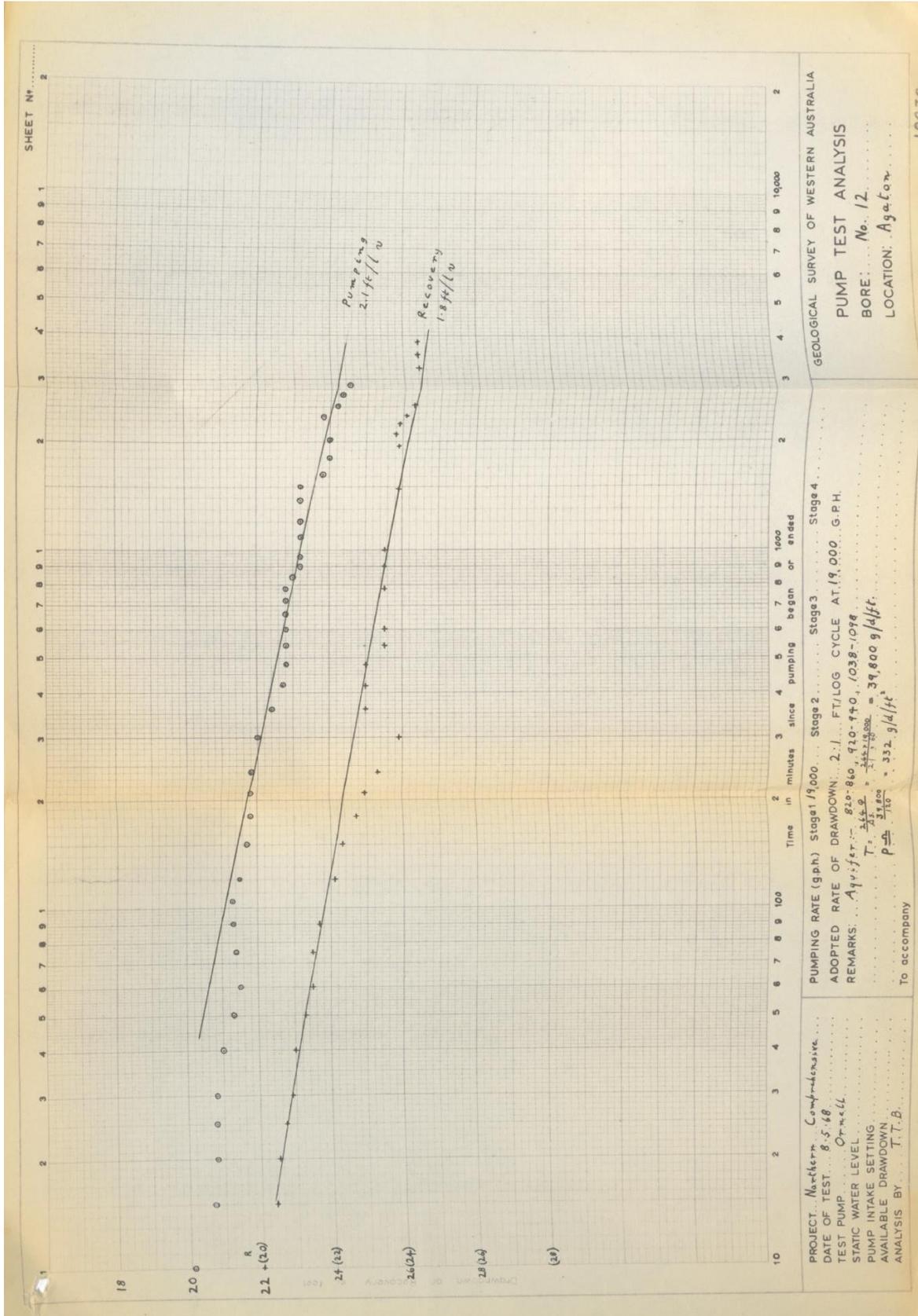
It is interesting that almost all cores below 1105' contain Permian contaminants. Also the 1225' to 1235', 1405' to 1409' and 2300' to 2307' cores contain the acritarch Veryhachium which in this formation often indicates Lower Triassic contamination rather than possible marine conditions of deposition. However it is only in the 2300' to 2307' core that a few spores of Triassic age can be recognized. This bottom core therefore contains many of the ingredients of the Otorowiri Siltstone assemblages, but to use this as a direct correlation with the Arrowsmith River area would be most unwise at this stage.

CONCLUSIONS: All assemblages obtained from the core samples supplied are Neocomian-Aptian in age and come from the South Perth Formation. It is suggested they can be separated palynologically into: Zone C₂: 380' to 1225'; Zone C₁: 1405' to 2300'

DISTRIBUTION:

Mr. Passmore
154/1968
Palaeo. Rept. & Lab. Files
Ingram.

(B. S. Ingram)
Palynologist



SHEET NO. 2

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA
 PUMP TEST ANALYSIS
 BORE: No. 12
 LOCATION: Agaton

PUMPING RATE (gph) Stage 1 19,000 ... Stage 2 ... Stage 3 ... Stage 4 ...
 ADOPTED RATE OF DRAWDOWN... 2.1... FT/LOG CYCLE AT 19,000 G.P.H.
 REMARKS: Aquifer: 820-860, 920-940, 1038-1098
 $T = \frac{24.0}{33.0} = \frac{24.0 \times 19,000}{33.0 \times 39,800} = 39,800 \text{ g/d/ft}$
 $P = \frac{21.1}{33.0} = 352 \text{ g/d/ft}$

To accompany

GOVERNMENT CHEMICAL LABORATORIES

13th May, 1968

Material: One water sample marked as below

Lab. No.: 7158/68

From whom received and date: Geological Survey of W. A.
on 19th April, 1968Marks:

"Sample No. 22157

Description sample locality: Agaton No. 12 Bore about
16½ miles due west of Watheroo

Analysis required: standard

Bore identity: A12

Depth of bore: 1124'

Depth of sample: 825' - 1104'

Appearance: cloudy grey

Collected by: J. Martins

Date water sampled: 9.4.68"

Result of examination:

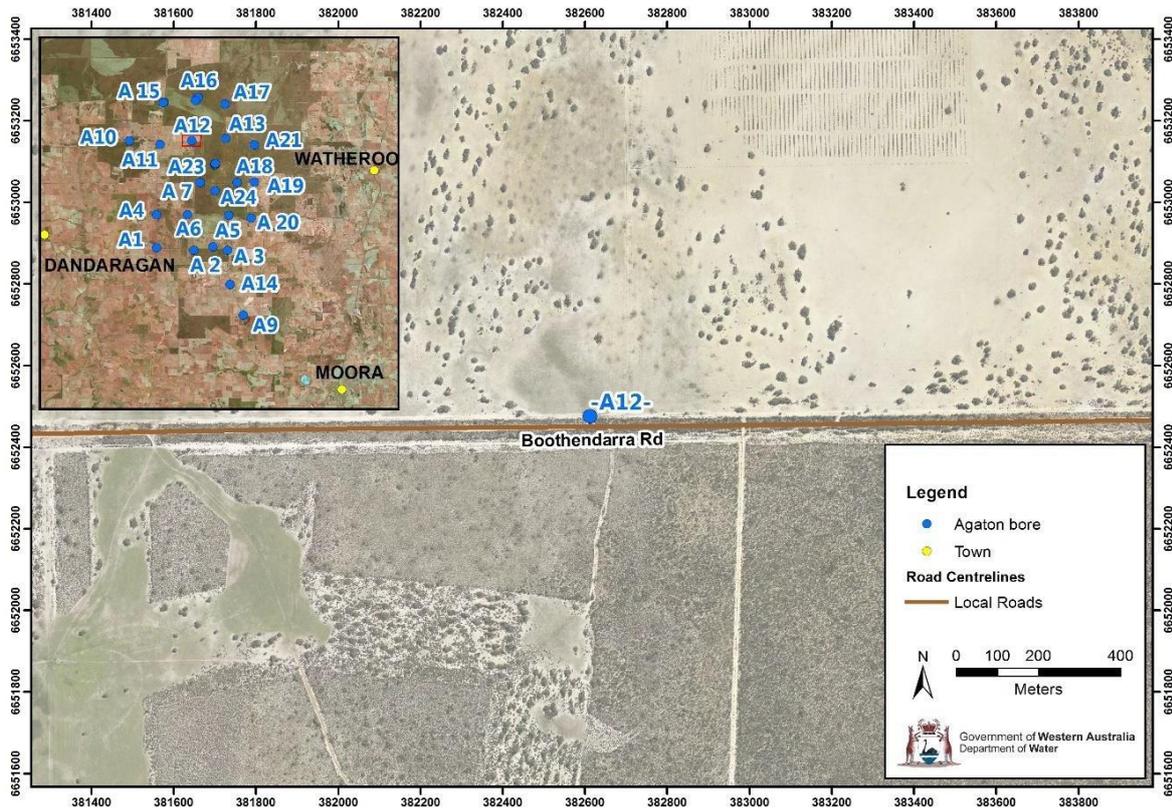
Specific conductivity (micromhos 20°C)	800
pH	7.9
Appearance	Very slightly cloudy with brown deposit
Colour	Colourless
Odour	Nil
<u>Mineral matter</u>	<u>Parts per million</u>
Total dissolved solids (by evaporation)	510
(by conductivity)	560
Sodium chloride, NaCl (calc. from chloride)	305
Total hardness (calc. as CaCO ₃)	75
Total alkalinity (calc. as CaCO ₃)	95
Calcium, Ca	20
Magnesium, Mg	6
Sodium, Na	148
Potassium, K	10
Iron, Fe (in solution)	less than 0.1
Bicarbonate, HCO ₃	116
Carbonate, CO ₃	Nil
Sulphate, SO ₄	49
Chloride, Cl	185
Nitrate, NO ₃	2
Silica, SiO ₂	22

The iron figure reported is in solution and does not include the brown deposit referred to above which may or may not be partly due to the post precipitation of iron.

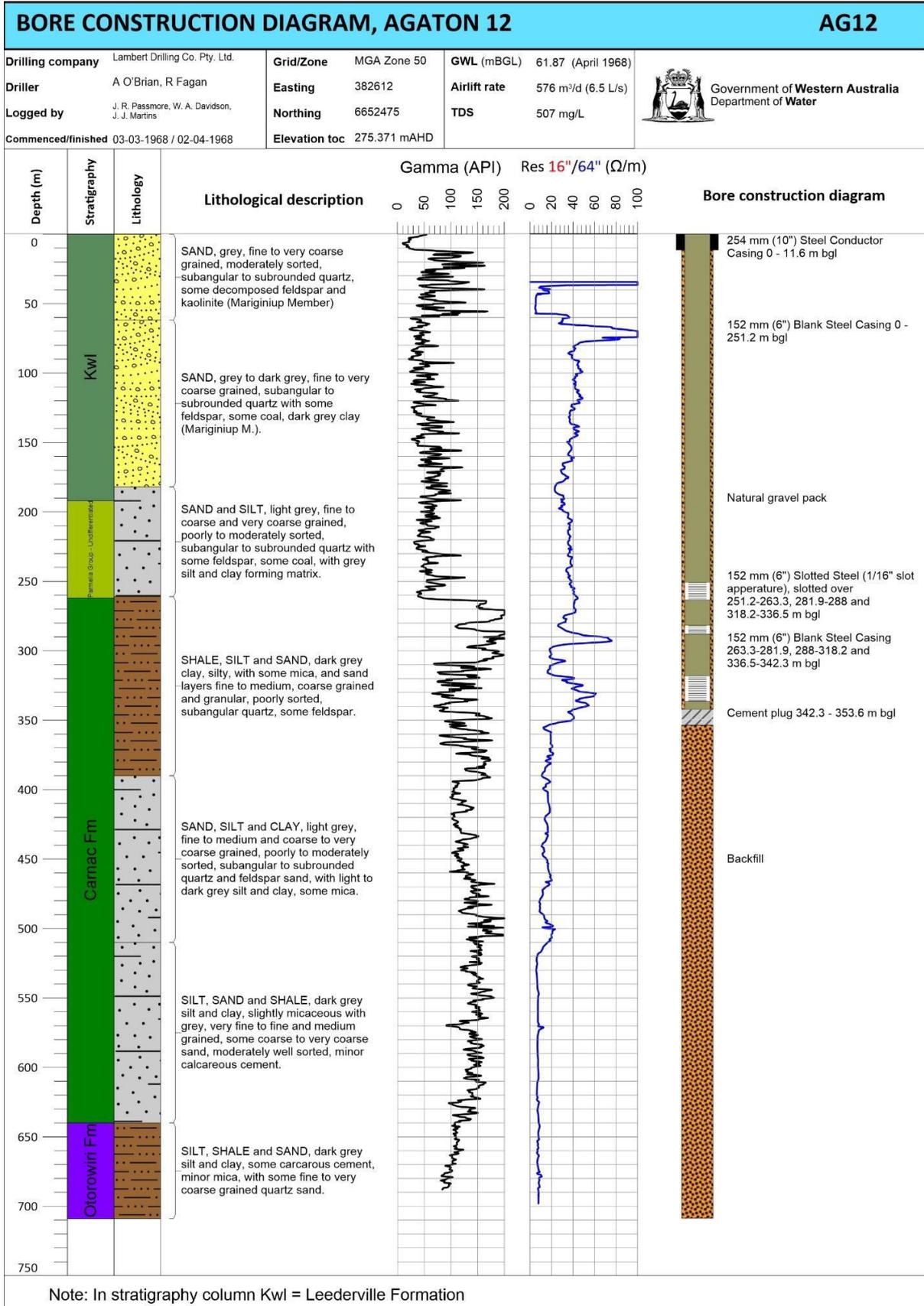
H. C. HUGHES
DIVISIONAL CHIEF
AGRICULTURE & WATER SUPPLY

CHEMICAL ANALYSES, BY GOVERNMENT CHEMICAL LABORATORIES, OF WATER
FROM AGATON NO. 12 BORE

Sample No.	10555	10568	10567
Date sampled	22/3/68	8/5/68	10/5/68
Depth (feet)	915-930	823-1104	823-1104
Sampling method	Formation Test	Pump test (start)	Pump test (48 hours)
pH	7.2	7.4	7.6
<u>MINERAL MATTER</u>	<u>Parts</u>	<u>per</u>	<u>million</u>
Calcium, Ca	21	9	8
Magnesium, Mg	4	18	13
Sodium, Na	107	147	136
Potassium, K	9	17	14
Iron, Fe			3
Bicarbonate, HCO ₃	134	55	55
Carbonate, CO ₃	nil	nil	nil
Sulphate, SO ₄	36	30	33
Chloride, Cl	118	257	218
Nitrate, NO ₃	less than 1	less than 1	less than 1
Silica, SiO ₂	12	20	27
<u>Total (sum)</u>	441	553	507
<u>Total (conductivity)</u>	400	550	530
<u>Total (evaporation)</u>	360	530	480
Total hardness (as CaCO ₃)	69	97	74
Total alkalinity (as CaCO ₃)	110	45	45



Aerial photograph of AG12 situated on the south side of Boothendarra Road, 4.6 km east of Coalara Road.



8.7 Appendix 7: Soils investigation

SOILS INVESTIGATION

Sendem Downs Proposed Cattle Feedlot Site

An investigation was undertaken by Graham Barrow B.E (Agr) on 21 August 2019.

Six soil pits had been dug on the site on 19 August 2019 at sites representative of the pens and wastewater storage areas. Soil Description Sheets for the six sites are attached. Photos of each site are attached.

The area is gently undulating, with generally poor coverage of annual pastures (drought affected). Groundwater was not encountered at any site. Topsoil of approximately 20cm depth consists of Sand with fine fragments that are insufficient to allow the formation of a consistent bolus when wet.

The B horizon also consists of Sand, with very limited root development. Readily Available Water Holding capacity (RAW) is very low due to the sandy nature of the soil and restricted root depth.

The C horizon consists variously of either Sand, Loamy Sand or Clay Sand, with varying degrees of coarse fragments.

At all sites, with the exception of Site 3, there was insufficient material for the construction of a clay lining, to an adequate hydraulic conductivity for the protection of groundwater under a wastewater storage dam. Sites 1 and 2 were comprised of Sand to a depth of greater than 120cm. Sites 4 and 5 had Clayey Sand at depth, however this layer contained significant percentages of coarse fragments. Site 6 had Loamy Sand at depth.

Site 3 had a broad layer of Clayey Sand from 115 to 180cm and probably deeper. The soil showed signs of sodicity, with mottling, indicating that when compacted, the layer would be suitable for the construction of a wastewater storage dam, or the lining under a feedlot pen. The lining would need protection from the effects of direct rainfall impact. The cost of removing the overburden may be prohibitive in comparison to the purchase cost of a synthetic liner.

Sites 4 and 5 are deemed the most suitable for siting of the feedlot pens. The combination of sloping sites, leading to run-off, higher waterholding capacity (greater storage from each rainfall event) and the increased percentage of clay at depth lead to limited leakage of nutrient rich waste leaching to the watertable.

From an agronomic perspective, the soils would benefit greatly from the application of feedlot waste. Currently, rainfall events that exceed the RAW lead to leaching of water and soluble fertilisers to groundwater. Replacement of fertilisers by manures will likely increase the RAW and reduce the leaching of nutrients.



Figure 26: Test Pit 5 with clayey gravel sub-grade base



Figure 27: Test Pit 3 clayey sand sub-grade material assessed as suitable for sealing ponds

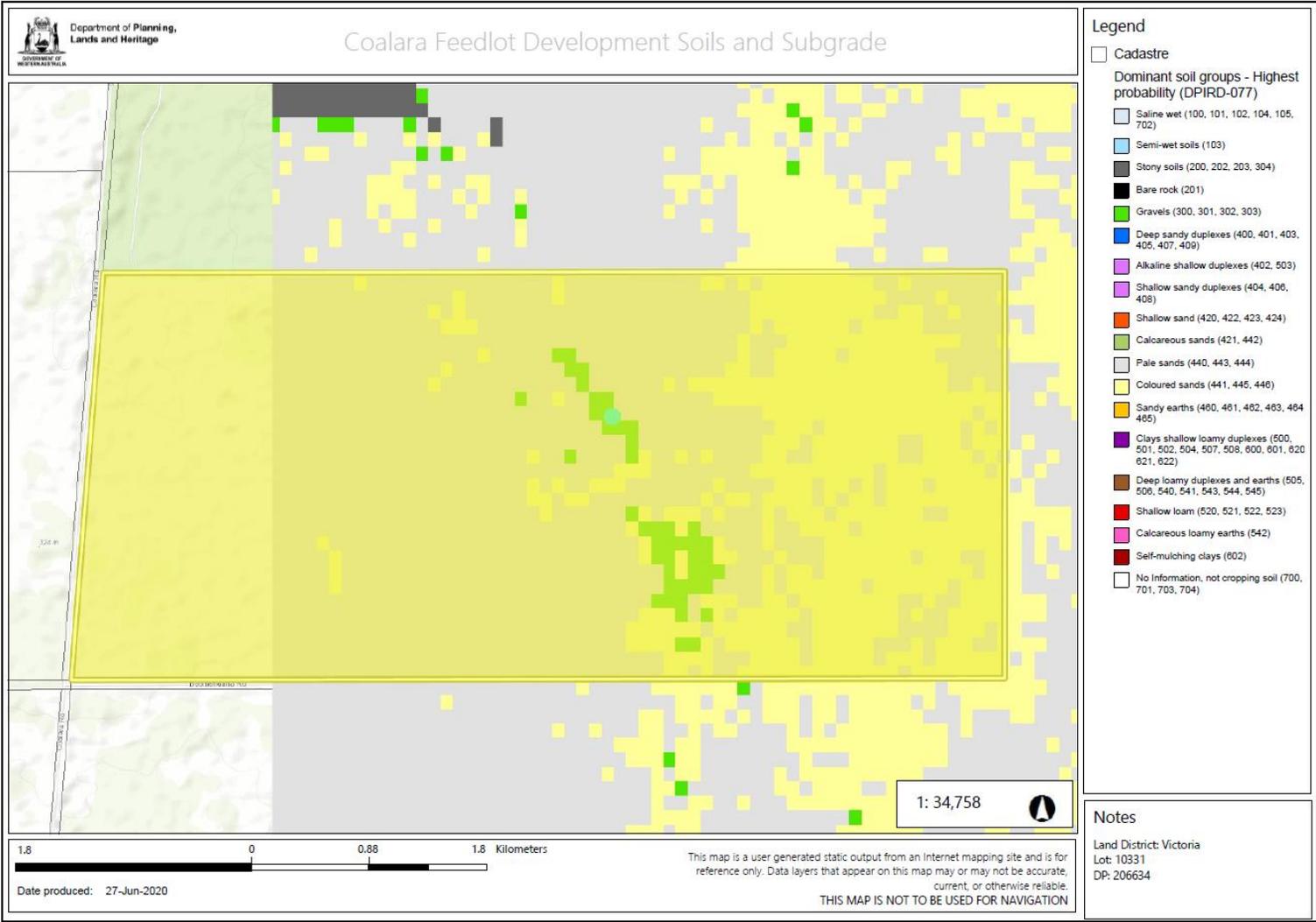


Figure 28: Coalara Feedlot Premises soils and sub-grade



Figure 29: Soil survey test pit locations

8.8 Appendix 8: Clay material infiltration test laboratory data

Perth
Unit 3, 34 Sphinx Way
Bibra Lake,
WA 6163
Ph: (08) 9418 8742
Mob: 0422 814 231
E-mail: Phillip.li@eprecisionlab.com



E-PRECISION LABORATORY

FALLING HEAD PERMEABILITY TEST REPORT				
Test Method: AS1289 6.7.2				
Client:	Local Geotechnics		Date Tested:	24/04/2020
Project:	CSC Permeability Test April 2020		Date Reported:	28/04/2020
Lab:	EPLAB		EP Lab Job Number:	LOCAL
Tested by:	Phil			
Checked by:	Phil			
Lab ID:	CLAY_PIT1_FH	CLAY_PIT2_FH		
Client ID:	Clay Pit 1	Clay Pit 2		
Sample Type:	-	-		
Sample Conditions:	Remolded 98% MMDD	Remolded 98% MMDD		
Surcharge Pressure (kPa):	12.5	12.5		
Initial Bulk Density (t/m ³):	2.24	2.21		
Initial Moisture Content (%):	9.77	11.19		
Dry Density (t/m ³):	2.04	1.99		
Saturation (Skempton's B):	0.98	1.00		
K₂₀ (m/s):	7.941 E⁻⁹	6.485 E⁻⁹		
Notes:				
Stored and Tested the Sample as received				
Samples supplied by the Client				
Authorised Signatory (Geotechnical Engineer):				

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

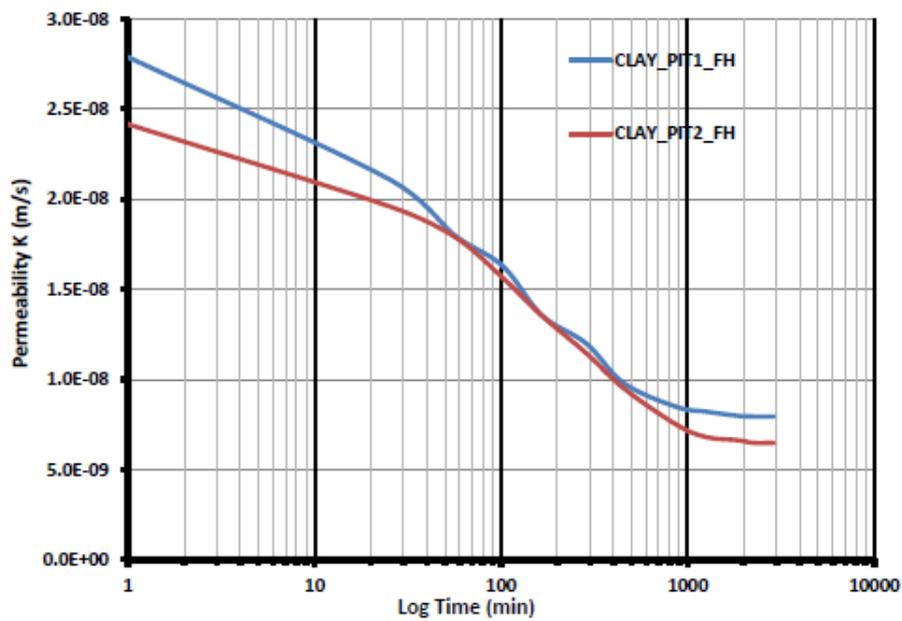
Perth
 Unit 3, 34 Sphinx Way
 Bibra Lake,
 WA 6163
 Ph: (08) 9418 8742
 Mob: 0422 814 231
 E-mail: Phillip.li@eprecisionlab.com



FALLING HEAD PERMEABILITY TEST REPORT

Test Method: AS1289 6.7.2

Client: Local Geotechnics	Date Tested: 24/04/2020	
Project: CSC Permeability Test April 2020	Date Reported: 28/04/2020	
Lab: EPLAB	EP Lab Job Number: LOCAL	



Notes:

Stored and Tested the Sample as received
 Samples supplied by the Client

Authorised Signatory (Geotechnical Engineer)

The results of tests performed apply only to the specific sample at time of test unless otherwise clearly stated. Reference should be made to E-Precision Laboratory's "Standard Terms and Conditions" E-Precision Laboratory ABN 431 559 578 87

Sample site GPS location: Zone 50 J - Easting 381498.80m E - Northing 6652459.32m S

8.9 Appendix 9: Coalara Feedlot “Animal Care Statement”

BEEF CATTLE FEEDLOTS – ANIMAL CARE STATEMENT – (CSIRO Format)

1. FEEDLOT DETAILS

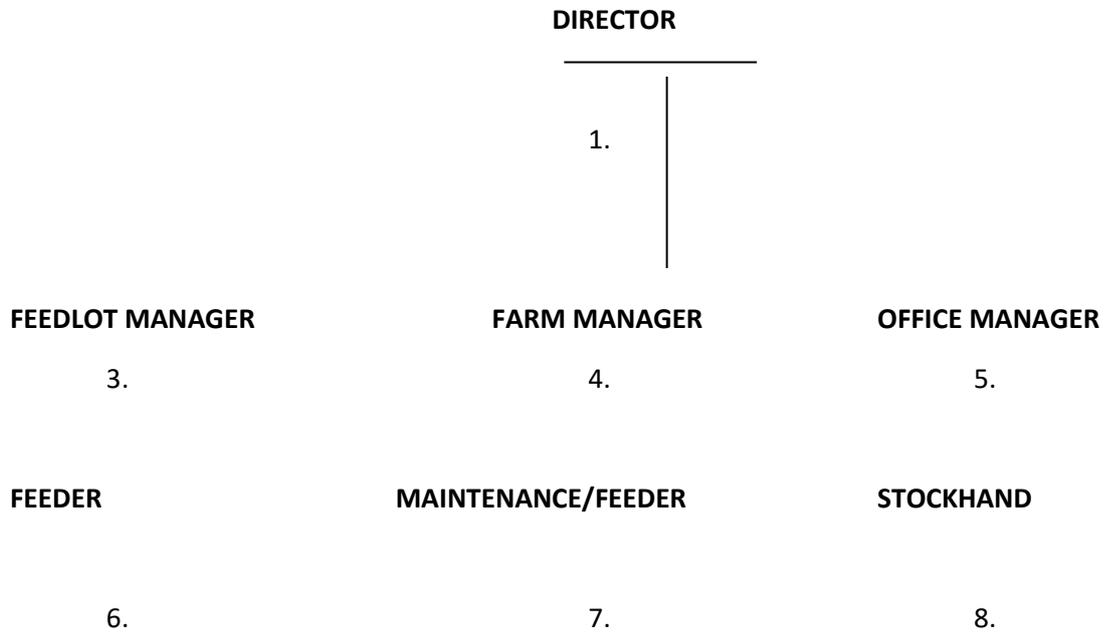
Name of Feedlot	Coalara
Contact Person/Position	Feedlot Manager
Site Address	"Sendem Downs"
	2530 Coalara Road
	Badgingarra, WA
Postal Address	
(if different to above)	
Telephone:	08 9571 2946
Facsimile:	

2 MANAGEMENT

- 8000 hd SCU Feedlot
- 70 day domestic market
- 100 day grainfed market
- Stocking density varies between 9 to 25 mtrs per square hd
- 6-13 full & part time staff
- Staff training all feedlot operations are conducted as required and documented

2.2 Management Structure

Management Structure



3 RESPONSIBILITIES AND PROCEDURES

3.1 Facilities

3.1.1 Yards

Maintenance - Position	7. & Contractors
Cleaning - Position	7.
Frequency Details	Daily

3.1.2 Water Troughs

Maintenance - Position	4,7
Cleaning - Position	7
Frequency Details	Cleaned weekly or more frequently if required (all troughs checked for flow daily)

3.1.3 Feed Bunks

Maintenance - Position	3,6,7,
Cleaning - Position	3,4,5,6,7,8
Frequency Details	Daily

3.1.4 Shelter Provisions

Is shelter provided?

Yes No

If yes, advise details (natural, artificial, type, e.g. windbreak, shade etc and area involved). If no, why do you consider it is not required?

Feedlot is located in the Darling Downs high country considered to be a temperate climate. In 20 years of operation shelter has not been required.

1. Cattle released during extreme temperature conditions.
2. Water storage within close proximity of feedlot would also be utilised if needed.

In extreme weather conditions contingency plan would come in to effect. Refer to QA manual.

3.1.5 Roads/Lanes

Maintenance - Position **4,7**

3.1.6 Do the facilities adequately cover animal welfare considerations?

YES
If no, advise details

3.2 Livestock Management

3.2.1 Health Program

Position **3,8**

(i) Receival/Induction

Outline the various movements from receival through induction, into the yard, e.g. 'identify, weigh, preventative health maintenance program, draft into feedyards'.

Procedures

Upon receival cattle are placed in receival on palatable hay for 1 to 2 days then drafted, cattle that meet health & weight specifications are inducted.

Induction Clostridial Vax, Resp Vax, worm & lice control, possible HGP, as required

Cattle are scanned & individually identified with eartags.

(ii) Records kept (of health treatment)?

YES

If “yes” give details, if “no” what alternative procedures?

All treated are individually tagged with treatment & date on tag, cattle are also NLIS scanned with treatment & withholding information recorded on feedlot records system

(iii) Are sick pens available to segregate sick cattle

YES

If “yes” give details, if not available what alternative procedure is used?

Two sick pens are available cattle are treated & placed into observation pen, within the next 24 hours they are either placed in home pen or retreated and this is recorded.

(iv) What is procedure for identification and/or segregation of cattle that have been treated with any substance that has a withholding period?

All treated cattle are tagged individually with treatment and date entered into feedlot log and written on tag. Sick cattle go through the 2 pens and may go home on day of treatment or held longer depending on treatment requirement and condition.

(v) Veterinary: Service available, on site

Yes No

If no, what is alternative procedure (i.e., contract, on-call, or other)? If 'other', give details.

– Wheatbelt Vet Services are on call 24-7 for all veterinary services. 08 96711108

3.2.2 Stock Supervision

Position 3,8

Frequency Details Pen stock checked daily, more if needed.

3.2.3 Nutrition & Food Safety

Position 3

Do you have a nutritionist?

Yes

No

If no, how is formulation derived?

3.2.4 Transport

(i) Position responsible for inspection of stock on arrival, for detection of any sign of injury or disease?

3

(ii) Position responsible for fitness at load-out for health and loading density?

3

3.3 Livestock Management

3.3.1 Disease Outbreak

Position 3

Details of contingency plans:

Sick cattle are isolated, Veterinarian contacted immediately. Incident reporting requirements are implemented and animal treatment administered as required.

Refer to QA Manual Appendix 1

3.3.2 Emergency Slaughter and Carcass Disposal

Position 3,7,8

1. Details of contingency plans: Destruction of cattle to be conducted in an efficient and humane manner, utilising the temporal or frontal methods.
-

Refer to QA Manual

3.3.3 Water/Feed Failures

Position 3,4,6,7

1. **Water supply interruption** - although water for the feedlot is generally pumped from a single bore, the bore is operated in conjunction with another irrigation bore. Water is pumped to a 300,000 L storage tank which gravity feeds to all troughs. By keeping the tank full, several days storage are always available.

Shortage of feed supply, mill fire or poor quality feed

1. In the event that the feed supplier was unable to deliver supplied ration due to a mechanical breakdown, cattle would be fed silage and hay for period until ration supply arrived.
2. In the event of major commodity shortage, cattle would be let out of feedlot onto 1500 ha of country which completely surrounds feedlot.
3. In case of mill fire milled grain delivery from nearby feedlots would be arranged until normal milling was restored.

3.3.4 Extreme Weather - Heat

Position 3,4,6,7

1.Refer QA manual Appendices: Mitigations include:

- Heat rations;
- Deployment of extra water troughs;
- Minimisation of stock movement and activity; and
- Wet manure removal.

- **3.3.5 Extreme Weather - Flood**

- The site is on undulating country and the feedyard is higher than any floodwaters.

The formed surface generates raised areas in all pens thereby protecting from local st

- The feedlot has a 3000 metre all weather road to the Coalara Rd with connections to east and west.

- **3.3.6 Earthquake**
- The region has no history of significant earthquakes. Planning for earthquakes at this site is not an effective use of time.

8.10 Appendix 10: Heat risk assessment

6/21/2020

Risk Assessment Program (RAP) – Cattle Heat Load Toolbox

RAP Version 2.1 | 21st June 2020

The risk assessment program or RAP is a tool to help feedlot operators assess their potential risk of a heat event at their site based on historical climatic conditions, cattle characteristics and feedlot management practices.

Results

Results calculated on 2020-06-21 01:31:20 PM

HLI threshold: 91

AHLU Risk Level: 91

Years analysed: 22

Event duration	Frequency of High	Frequency of Extreme
2 days	Less than 1 event in 22 years	Less than 1 event in 22 years
3 days	Less than 1 event in 22 years	Less than 1 event in 22 years
4 days	Less than 1 event in 22 years	Less than 1 event in 22 years
5 days	Less than 1 event in 22 years	Less than 1 event in 22 years
6 days	Less than 1 event in 22 years	Less than 1 event in 22 years
7 or more days	Less than 1 event in 22 years	Less than 1 event in 22 years

Over a 10 year period, this site would be expected to experience:

At least 1 days of high or greater risk that includes 0 days of extreme risk

Over a 10 year period, this site would be expected to experience:

At least 1 days of high or greater risk that includes 0 days of extreme risk

Parameters

Parameter	Value
Site	Morawa
Period analysed	Long Term
Cattle type	Bos taurus
Coat colour	Black
Health status	Healthy
Number of days on feed	80 - 130
Amount of shade	No shade
Trough water temperature	20 - 30 degrees
Pen class	Class 1
Extra water troughs installed	Yes
Heat load ration fed	Yes

<https://chit.com.au/toolbox/rap-calculator?offset=600&qldsiteid=0&nswsiteid=0&sasiteid=0&wasiteid=94417&vicsiteid=0&tassiteid=0&statsinterval=Long+Term&breeds=Bos+taurus&colour=Black&h...> 1/2

6/21/2020

Risk Assessment Program (RAP) – Cattle Heat Load Toolbox

Wet manure removal

Yes

User Notes

8.11 Appendix 11: Coalara Feedlot Odour Management

8.11.1 Management Strategies for Odour and Air Quality

The 2015 MLA Guidebook – “Beef Cattle Feedlots: Waste Management and Utilisation” offers useful instruction on odour management. Content from this guidebook informs the following section.

There is generally some flexibility in the timing of potential odorous activities in the feedlot. CSCF management will use the basic understanding of atmospheric conditions that can disperse odours in planning pen cleaning, manure processing, composting and spreading operations.

Atmospheric conditions and their effects on odour dispersal are:

- Unstable atmosphere – typically the atmosphere is unstable on a warm sunny day when hot eddies of air rise from the land surface and cause significant mixing of the atmosphere. Odours are rapidly dispersed and carried upwards, quickly reducing odour intensity away from the feedlot. Because these conditions promote rapid dispersion, they will be targeted for carrying out most odour-generating activities.
- Stable atmosphere – occurs on cold, still clear nights when the air at the land surface stays cool and remains trapped below an inversion layer. Little atmospheric mixing occurs below this layer and there is little dispersal of odours. Odours remain at relatively high intensity at some distance from the feedlot. These conditions are unsuitable for undertaking activities that will generate significant odour and odorous activity will be avoided in these conditions.
- Neutral atmosphere – occurs on heavy overcast days and odour dispersion is only moderate. Composted manure utilisation will occur only when the prevailing weather conditions are unlikely to result in odour and dust nuisance for nearby residents. Management will consider the wind direction and strength, the time of day and the atmospheric stability. The plan showing the location of all neighbours within approximately 5 kilometres and the site weather station will help to show which neighbours are at risk of odour nuisance from composted manure utilisation on particular fields. Management will develop an annual utilisation plan that takes into account seasonal wind directions, rainfall patterns and crops grown. Different paddocks will be selected for utilisation at different times of the year depending on the level of odour or dust generation risk and subject to agronomic and seasonal considerations.

To reduce potential odour nuisance to neighbours, compost turning and manure spreading will be done:

- frequently to minimise events with large odour generation
- evenly
- in the morning when the air is warming rather than late in the afternoon
- for solids, as soon as possible mechanically incorporate manure into the soil

On cold, still mornings, air will be trapped below an inversion layer, restricting odour dispersion. The specified pen foundations of imported compacted clay will help to reduce problems of odour or dust. Management will not spread manure if heavy rain is predicted.

Management will communicate with neighbours at the time of planned odorous activities to ensure that important events in neighbour's calendars is not in conflict with the feedlot plan. A register of communications with neighbours will be kept in the FLM diary.

8.11.2 Feedlot Location, Site, Situation and Woodlots

The feedlot property was selected to ensure adequate buffer distance between the feedlot (which is to be located near the centre of the property) and neighbouring potential receptor residences.

Existing tree belts and woodlots create turbulence and filter air and aid in odour dispersion and therefore reduce the likely impact on neighbours.

The proponent/operator understands the importance of the existing tree wooded areas on the property to odour dispersion and will retain and nurture the trees as an important feature of odour management.

8.11.3 Feedyard Pen Surface Integrity Management

Pen cleaners will be trained in pen cleaning and maintenance of surface integrity and every effort will be made by the pen cleaner to maintain and not damage the interface layer between the base of the manure pack and the compacted clay pen floor. Management will inspect and sign off on each pen as cleaning and repair are completed. Records of inspections and consequential notes will be kept in the feedlot manager's diary.

In dry times cattle pens will be regularly cleaned of manure to ensure loose material as a dust emission source is minimised. A "clay mix" pen floor capping is specified for construction of cattle pens which should aid in forming a firm base and mitigate against pulverising to powder.

Low spots and any potholes that develop in the pen surface will be packed and repaired with suitable material at the completion of cleaning each pen prior to restocking. These problems are much less likely to occur because of the water trough design detailed in the next paragraph.

Water trough design includes elevated plug holes connected to underground drainpipe so that overflow and trough flush cleaning water flows through drainage pipes under the feedyard and exits from underground into the sedimentation structure. This design element ensures that no trough water ends up on the surface of the pen to affect pen floor integrity. This is a key design element in aiding lower odour emissions from the feedyard pad.

Prior to the monthly management meeting the feedlot manager will conduct a whole of feedyard pen floor inspection and will report findings to the meeting and develop a plan with staff to address any hazards detected.

8.11.4 Feedyard Pen Cleaning

Cattle pens will be cleaned on a frequency to maintain compliance with a Class 1 feedlot such that the depth on dry manure will not exceed 50mm depth. This strategy will reduce the risk of odour generation as a consequence of excessive manure loads becoming wet for an extended period and, as a consequence, odorous.

Tractor drawn box scrapers and frontend loaders will be the primary equipment used to mound manure and clean pens. A skid-steer with push bar will be used to clean along fence lines and push and pull material into the general yard cleaning zone for pick-up by the larger machines.

Manure loads will be managed to ensure that the solid dry manure pack is never greater than 50mm. On the nominated design criteria stocking density for the feedlot on a continuous stocking regime the pens will be cleaned approximately every 13 weeks. Pens will be cleaned in an autumn campaign to ready the yard for winter and a spring campaign to clean up after winter. Heat hazard manure load will be reduced in another concerted campaign prior to the end of December each year.

Pen cleaning environmental conditions will be assessed daily in line with the guidelines noted in Section 4 above including communications with neighbouring residents and if conditions are not suitable then the activity will be deferred until more suitable conditions develop. In summer months the Katestone heat load model will provide a useful forecasting tool for activity planning.

8.11.5 Effluent Catch Drain Cleaning

The feedpens have a specified constructed fall from bunkline to back drain. The fall is appropriate for feedlots in dry climates, such as the Wheat Belt region of WA. This slope is sufficient to create in-pen runoff to effluent catch drains in a feedlot managed to Class 1 standard but is such that the manure load generally remains in the pen and is not entrained in the pen surface effluent runoff.

In most rainfall events little manure will leave the pen and end up in the drain. However, at times, some manure will exit the pen and reach the drains. The back drains of the feedlot are specified with a constant fall from south to north.

Opens drains will be maintained by grading and solids removal to ensure all feedlot drainage-lines are weed free.

Drain cleaning environmental conditions will be assessed daily in line with the guidelines noted in sections above including communications with neighbouring residents and if climatic conditions are not suitable then the activity will be deferred until better conditions develop.

8.11.6 Sedimentation Structures Operation and Cleaning

Sedimentation detention structures as detailed in the Feedlot EA will be operated to detain feedyard rainfall runoff for a period of no more than 24 hours. This period is too short for the runoff water to experience anaerobic processes and become odorous at the time of decant.

Design of the structures will ensure that all liquid drains from the basis only leaving behind a layer of sediment. Each summer the structures will be assessed for sediment load and once the capacity is reduced by 20% the structures will be isolated, (see design criteria) dried out and cleaned.

Possible impact on receptor residences will be considered in planning the timing of cleaning.

8.11.7 Effluent Evaporation Dams Operation and Cleaning

Effluent terminates in a series of evaporation dams. Water balance detailed in the EA estimates that total design capacity of 46.25 ML is sufficient to evaporate (including effluent use in composting) all feedyard runoff in the 95th percentile wet year. See Section 6.4.4 and Appendix 3.

The drainage system has been designed to ensure that most sediment and Biochemical Oxygen Demand (BOD hereon) potential is retained in the feedyard pens and not entrained in the feedyard effluent. Constructed sedimentation structures are designed to aid solids that are entrained from the pens to settle in the sedimentation structures.

Effluent is therefore expected to contain some Total Dissolved Solids (TDS hereon) from leached nutrient and salts but significantly lower BOD in the terminal dams than other feedlots of equivalent size. Lower BOD in the effluent means lower odour potential.

In the 95th percentile year water balance calculations including use of effluent in composting, indicate that both dams are fully evaporated and empty by the end of summer.

Once holding capacity in either of the terminal dams is reduced by 20% by accumulation of sediment, inflows will be redirected to the other storages and the dams will have solids harvested for spreading on designated manure receival areas.

The feedlot manager will review weather forecasts for the planned activity period and possible impact on receptor residences will be considered in determining the timing of cleaning.

8.11.8 Manure Storage Area Pad Maintenance

The manure storage pad will be constructed of the same material and to the compaction and permeability standard of the feedyard pens. Runoff from the pad will be directed to the effluent settlement and evaporation system.

The pad will be managed to leave a layer of aged manure or compost over the pad. This will aid in reducing erosion. Any low spots or potholes that develop on the manure storage pad will be filled and repaired as soon as they are detected. The pad will be maintained, to remain free draining all the time. The manure storage pad will be inspected by the feedlot manager, monthly, and a report of the inspection will be logged at the monthly management meeting.

8.11.9 Manure Processing and Composting

As described earlier in this document, effluent water will be used in the compost production processes on the feedlot site. Turning of manure in the composting process has the potential to create odour.

Weather forecasts for possible impact on receptor residences will be considered by the Feedlot Manager in planning the timing of composting activity. Region receptor residents within 6 k's will be advised of major manure turning and composting programs prior to commencement. Windrows during initial composting activity will be low profile so that in the event of spontaneous combustion the smouldering manure will be cut out and extinguished as soon as detected.

8.11.10 **Composted Manure Spreading**

Effectively composted manure has an earthy smell that is not classed as unpleasant by most people.

In instances when composted manure solids are spread, possible impact on receptor residences will be considered in planning the timing and location of spreading activity. The spread material will be incorporated into the soil in a timely manner.

Weather forecasts for possible impact on receptor residences will be considered by the Feedlot Manager in planning the timing of spreading activity. Neighbours within 2 kms of spreading on company land will be advised of major spreading campaign programs prior to commencement.

8.11.11 **Manure Shipping Off Site**

Any composted manure shipped off site will be transport in covered loads designed to ensure odours do not exceed acceptable levels.

Neighbours possibly impacted by loading of composted manure for shipment and passing trucks will be advised before the shipping campaign to ensure that the timing of the activity does not impinge on their amenity.

8.11.12 **Deceased Animal Disposal and Composting**

All deceased or euthanized animals will be composted at the manure storage pad in accordance with the 2015 MLA Guidelines for the composting of dead animals. The process includes opening the thoracic cavity and puncturing the rumen.

Dead animals must be delivered to the composting area and covered immediately, or, if a necropsy is conducted, then as soon as the necropsy is finished. Deceased animals found to be uncovered at the pad for more than 18 hours will be designated a notifiable incident under the feedlot QA system and will be dealt with using the Corrective Action Request program.

8.11.13 **Feedlot Roads and Cattle Alleys - Dust**

Feedlot road specifications include compacted stabilised gravel seal thereby significantly reducing the risk of dust in feed alley roads.

Cattle alleys will be regularly cleaned of slope wash manure to ensure loose material as an emission source is minimised. A sandy clay mix capping is specified for construction of cattle alleys which should aid in forming a firm floor and mitigate against pulverising to powder. If the cleaned surface becomes powdery then the use of a water tanker will be used to suppress the alley dust.

8.12 Appendix 12: Effluent drains and sedimentation structures

8.12.1 Pen rows catch drain design

Time of Concentration:

$$t_c = \frac{58 \times L}{A^{0.1} \times S_e^{0.2}}$$

Where:

t_c = time of concentration (min)

L = mainstream length (km)

A = area of catchment (km²)

S_e = equal area slope (m/km)

For one row of pens:

L = 0.56 km

A = 0.036 km²

S_e = 7.5 m/km (assuming a 0.75% drain slope)

t_c = 30.3 minutes

Rainfall intensity of 20year ARI design storm with a 30minute duration at the site is approx. 22.8mm/hr

Calculate drain capacity at the end of **one row of pens**:

$$Q = \frac{C \times I \times A}{360}$$

Where:

Q = peak flow rate (m³/sec)

C = runoff coefficient

I = rainfall intensity of 20year ARI design storm (mm/h)

A = catchment area (ha)

For one row of pens:

C = 0.8

I = 22.8 mm/h

A = 3.6 ha,

Thus, Q = 0.18 m³/sec (15.8ML/day), the peak flow rate at the end of the pen drain. An earthen channel with a 4m bed width, 1V:5H batter flowing 0.1m deep with a 0.75% slope will be sufficient under the National Guidelines. The actual drain, as a minimum for drain line maintenance and management, will be 4m bed, 1:7.5 batters and 0.2m deep.

8.12.2 Northern transfer drain design (prior to detailed survey)

Below are calculations for the drain running the northern end of the feedyard pens to the sedimentation structures.

For site contributing to sedimentation basin from the feed pens and cattle handling yards etc. (only approximate given limited height data):

$$L = 0.9 \text{ km}$$

$$A = 0.22 \text{ km}^2$$

$$S_e = 12 \text{ m/km}$$

$$t_c = 36.95 \text{ minutes}$$

Rainfall intensity of 20 year ARI design storm with a 37 minute duration at the site is approx. 25mm/hr.

Calculate drain capacity leading up to sedimentation basin:

For pens and cattle handling area:

$$C = 0.8$$

$$I = 22.8 \text{ mm/h}$$

$$A = 22 \text{ ha,}$$

Thus, $Q = 1.2222 \text{ m}^3/\text{sec}$ (105.6ML/day). Assuming a concrete drain at 1% slope, a bed width of 2.5m, vertical batters, and a flow depth of approx. 0.3m will satisfy the National Guidelines. Once a detail survey is conducted, then an accurate assessment can be made as to the flow rates and drain sizes required.

8.12.3 Sedimentation structures

The sedimentation system capacity can be calculated using the following formula:

$$V_p = Q_p \times \frac{L}{W} \times \frac{\lambda}{V}$$

Where:

V_p = required sedimentation system volume (m^3)

Q_p = peak flow rate (m^3/sec) for a 20 year ARI design storm

L/W = length to width ratio

λ = a scale factor

v = design flow velocity = 0.005m/s or less

Allowing for the whole site flowing to the sedimentation basin, includes the manure storage and handling area, but not the evaporation ponds, the peak flow rate, $Q_p = 1.7 \text{ m}^3/\text{sec}$ (assuming an area of 30 ha is draining to the sedimentation ponds).

Thus, the required sedimentation system volume = 3060 m^3 . Assume floor dimensions of 100m x 16.7m, 1:3 batters, and 0.8m deep = 1560 m^3 . Thus, a minimum of three ponds of this size will be required as at any time one pond may be closed off for drying out and cleaning.

8.13 Appendix 13: Premises & CSC properties manure utilisation areas



Figure 30: Premises: Manure utilisation area 1 – Total reserve 1285 ha – crop areas 1197 ha



Figure 31: CSC Manure utilisation areas 2 (Sendem Downs) and 3 (Hallswood Park)

8.14 Appendix 14: Feedmill conceptual design (AF Systems 04/08/20)

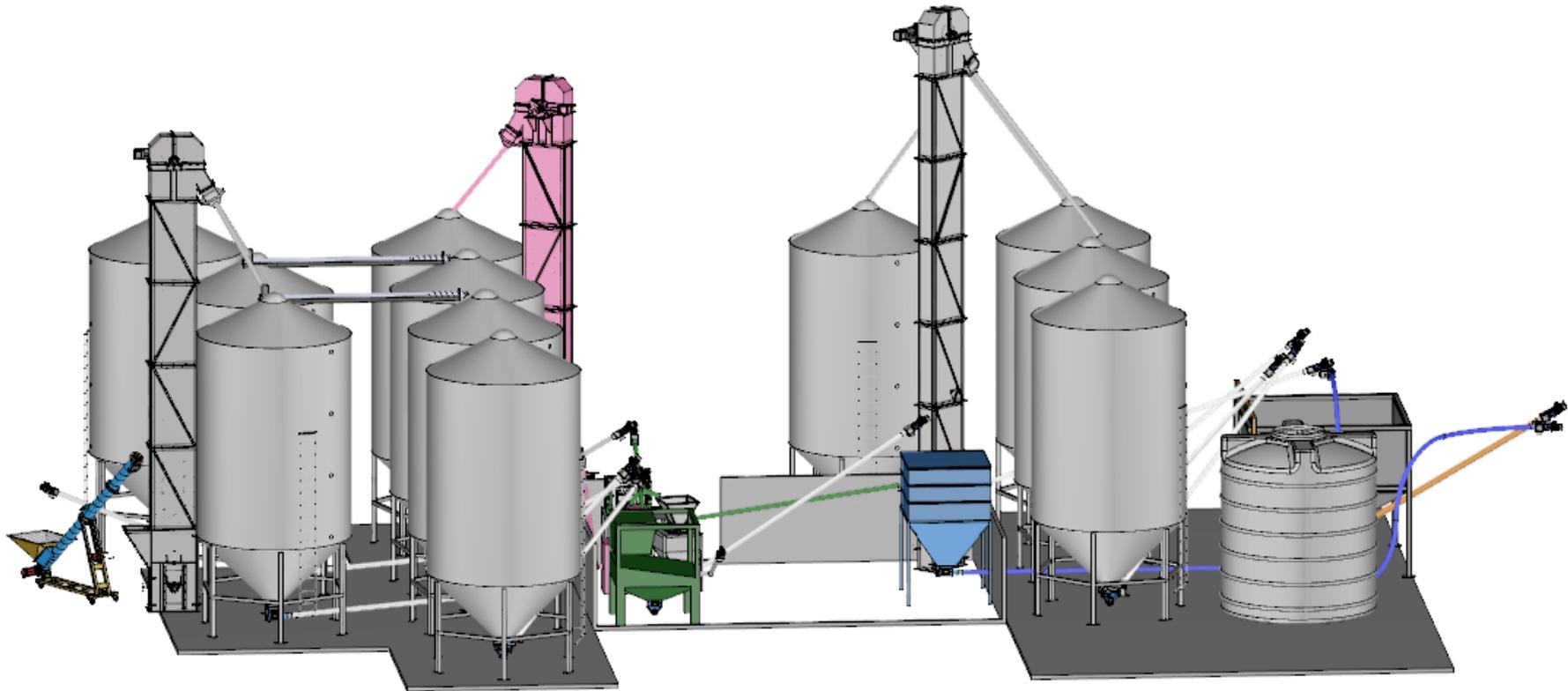


Figure 32: Feedmill conceptual design demonstrating enclosed grain handling system

8.15 Appendix 15: ASIC Certificates of Registration for the Applicant

COPY

Butcher, Paull & Calder Attn: Claire McGregor
GPO Box 51354
Perth WA 6845

Remove this top section if desired before framing



Certificate of Registration of a Company



This is to certify that

CENTRAL STOCKCARE PTY LTD

Australian Company Number 122 321 500

is a registered company under the Corporations Act 2001 and
is taken to be registered in Western Australia.

The company is **limited by shares**.

The company is a **proprietary** company.

The day of commencement of registration is
the **twenty-third day of October 2006**.

CERTIFICATE

Issued by the
Australian Securities and Investments Commission
on this twenty-fourth day of October, 2006.

Jeffrey Lucy
Chairman

Figure 33: Company Registration for Central Stockcare Pty Ltd

View company details

Page 1 of 2

**ASIC**

Australian Securities & Investments Commission

Forms Manager

Registered Agents

Company: CENTRAL STOCKCARE PTY LTD ACN 122 321 500

Company details

Date company registered 23-10-2006
 Company next review date 23-10-2007
 Company type Australian Proprietary Company
 Company status Registered
 Home unit company No
 Superannuation trustee company No
 Non profit company No

Registered office

SUITE 11 LEVEL 1 , 295 ROKEBY ROAD , SUBIACO WA 6008

Principal place of business

LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Officeholders

RYAN, DEAN PATRICK

Born 03-08-1973 at CHINCHILLA QLD

LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Office(s) held: Director, appointed 23-10-2006
Secretary, appointed 23-10-2006

RYAN, KATIE JANE

Born 09-12-1976 at GERALDTON WA

LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Office(s) held: Director, appointed 23-10-2006

Company share structure

Share class	Share description	Number issued	Total amount paid	Total amount unpaid
ORD	ORDINARY SHARES	2	2.00	0.00

Members

RYAN , DEAN PATRICK LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Share class	Total number held	Fully paid	Beneficially held
ORD	1	Yes	Yes

RYAN , KATIE JANE LOT 43 STOCK ROAD , BULLSBROOK WA 6084

Share class	Total number held	Fully paid	Beneficially held
-------------	-------------------	------------	-------------------

<https://www1.edge.asic.gov.au/cgi-bin/Lodgement/regaportal?update/requestViewCo...> 07/11/2006

Figure 34: Company details for Central Stockcare Pty Ltd



blackwood partners
chartered accountants

DIRECTORS
SCOTT SAWYER
WAYNE SCAINI
BEN THOMPSON

Suite 11
295 Rokeby Road
Subiaco WA 6008

PO Box 885
Subiaco WA 6904

Phone (08) 9382 8155
Fax (08) 9382 8166



9 November 2006

Mr D P & Mrs K J Ryan
Central Stockcare Pty Ltd
Lot 43 Stock Road
Bullsbrook WA 6084

Dear Dean & Kate

**Central Stockcare Pty Ltd t/f The Ryan Family Trust
Notification of your Australian Business Number**

We enclose confirmation from the Australian Taxation Office of the Australian Business Number for The Ryan Family Trust.

The Australian Business Number is 67 548 177 945.

Please ensure this notice is retained with your other permanent records.



S L Sawyer

ENTRUSTED

Blackwood Partners Pty Ltd As Trustees of The Sawyer & Co Unit Trust, The Scaini Family Trust & The Thompson Family Trust. ABN 70 527 193 497

Figure 35: Trustee ABN notification page 1

PO Box 908
Albury NSW 2640



Australian Government
Australian Taxation Office



THE TRUSTEE FOR THE RYAN FAMILY TRUST
C/- BLACKWOOD PARTNERS
PO BOX 885
SUBIACO WA 6904

Date of Issue
07 November 2006

Client Enquiries
Telephone: 13 28 66
Facsimile: 1300 130 911

Dear Sir/Madam

**Notification of your Australian business number
For your information**

Thank you for your recent request to register for an Australian business number (ABN).

I am pleased to advise that you are now registered in the Australian Business Register.

Your Australian business number is **67 548 177 945**.

Your ABN registration is effective as of **23 October 2006**.

We have enclosed a list of details recorded about your business or organisation. Please check that these details are correct.

You are required to notify the Australian Business Registrar of any changes to the information recorded on the register within 28 days of becoming aware of the change. If your details have changed, please phone **13 28 66** between 8.00am and 6.00pm, Monday to Friday.

Please note that some of the information collected will be available to the public on the Australian Business Register at www.abr.business.gov.au. The Registrar may also provide selected information to other government agencies authorised by law to receive it.

Deductible gift recipient, income tax exempt fund and/or tax concession charity

If you have indicated that you require endorsement as a deductible gift recipient, income tax exempt fund and/or tax concession charity, an application will issue shortly.

For more information

The enclosed brochure, *Checklist for people starting a new business*, tells you about a range of helpful products and services for business tax information, including our free online services and how easily you can access them.

If you need any further information, please visit our website at www.ato.gov.au or phone us on **13 28 66** between 8.00am and 6.00pm, Monday to Friday.

Protecting your privacy when you phone us

If you phone us, we need to know we are talking to the correct person before providing information. We will ask you for details only you or your authorised representative would know. It would be helpful if you have your tax file number or Australian business number ready when you phone us.

Your review rights

Your date of registration is a reviewable ABN decision. If you are not happy with this decision, you may request a review of the decision by the Administrative Appeals Tribunal. You would need to request a review within 28 days from the date this notice was issued.

Yours faithfully



Registrar of the Australian Business Register and
Commissioner of Taxation

AML/AVS/SL/AV/REC/01/10/07/02/04/1/05/0

Figure 36: Trustee ABN notification page 2



Australian Government
Australian Taxation Office

Australian Business Register

Australian business number(ABN) : 67 548 177 945
 Entity name : THE TRUSTEE FOR THE RYAN FAMILY TRUST
 ABN Status : Registered
 ABN Registration Date : 23 October 2006
 Postal Address : C/- BLACKWOOD PARTNERS
 PO BOX 885
 SUBIACO WA 6904
 Business Address : LOT 43 STOCK ROAD
 BULLSBROOK WA 6084
 Type of Entity : Trust
 Industry Code (ANZSIC) : 33190
 Trustee Name : MR DEAN PATRICK RYAN
 (See reverse for additional trading names.)
 GST Status : Registered
 GST Registration Date : 23 October 2006

Please turn over ...

Figure 37: Trustee ABN notification page 3

8.16 Appendix 15: Proof of occupier status

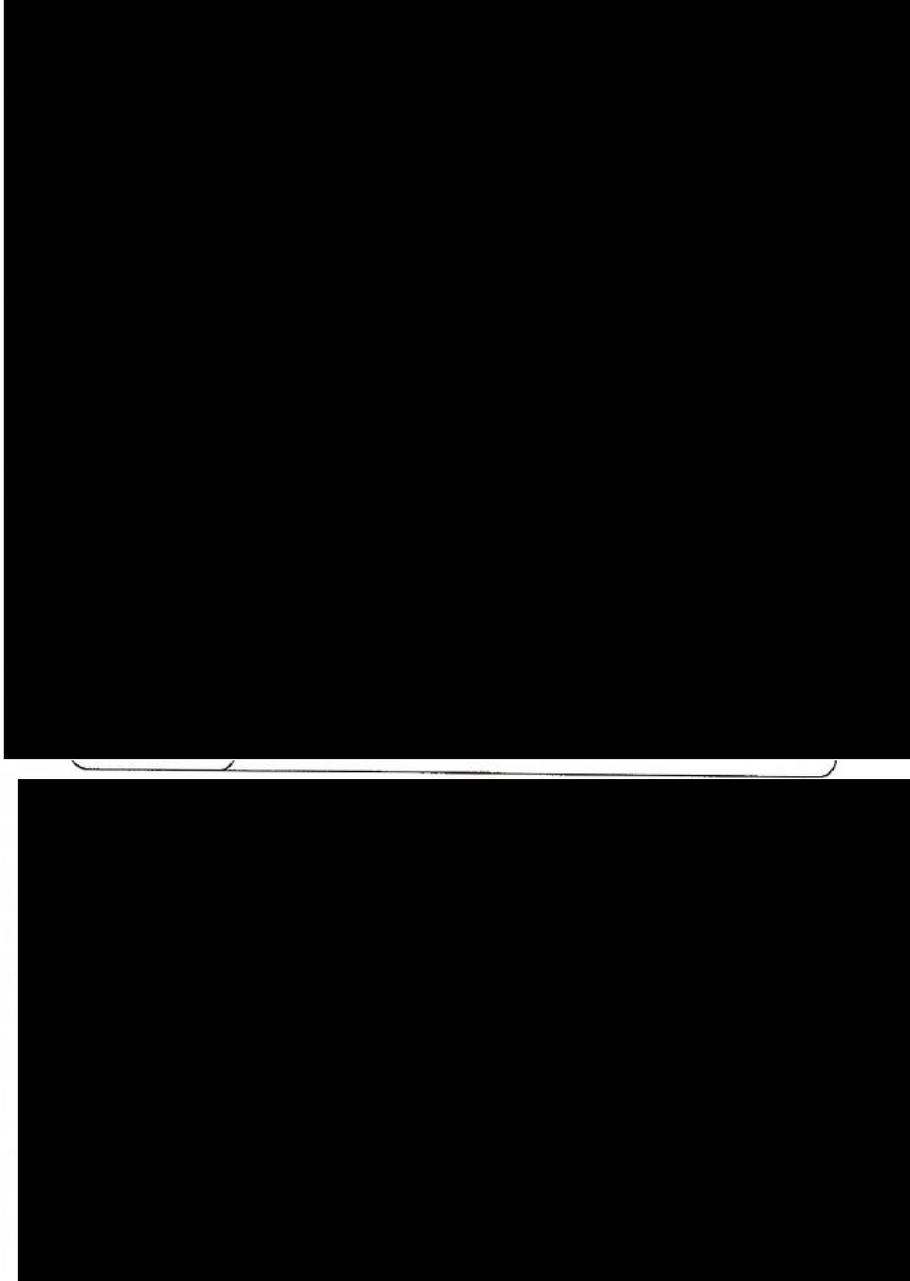


Figure 38: Occupier Council rates notice



Tel: 08 6189 9090
www.auswideconsulting.com.au
info@auswideconsulting.com.au
ABN 18 162 361 042

TRAFFIC IMPACT ASSESSMENT

2530 COALARA ROAD, BADGINGARRA WA 6521

Farm with Proposed Beef Feedlot Development

Prepared for:	Central Stockcare Pty Ltd
Date Prepared:	December 2020
Revision:	1.2
Shire of Dandaragan Application #:	T.B.A.

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INTRODUCTION

AusWide Consulting were commissioned by Central Stockcare Pty Ltd to prepare a Traffic Impact Assessment for a beef feedlot development to be located at 2530 Coalara Road, Badingarra, in the Shire of Dandaragan.

BACKGROUND AND EXISTING CONDITIONS

As shown in Figure 1, the subject site is bound by Boothendarra Road to the south and Coalara Road to the west. There are no residential dwellings in the immediate vicinity of the site.

The closest non-company dwelling is 6 kilometres distance, as the crow flies, from the development.

Vehicle access to the site is available through Boothendarra Road at the north side connecting to Coalara Road to the west of the subject site.

Key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress.

Figure 1: presents the location of the subject site on a road map.

Figure 2: presents an aerial view of the subject site showing surrounding roads.

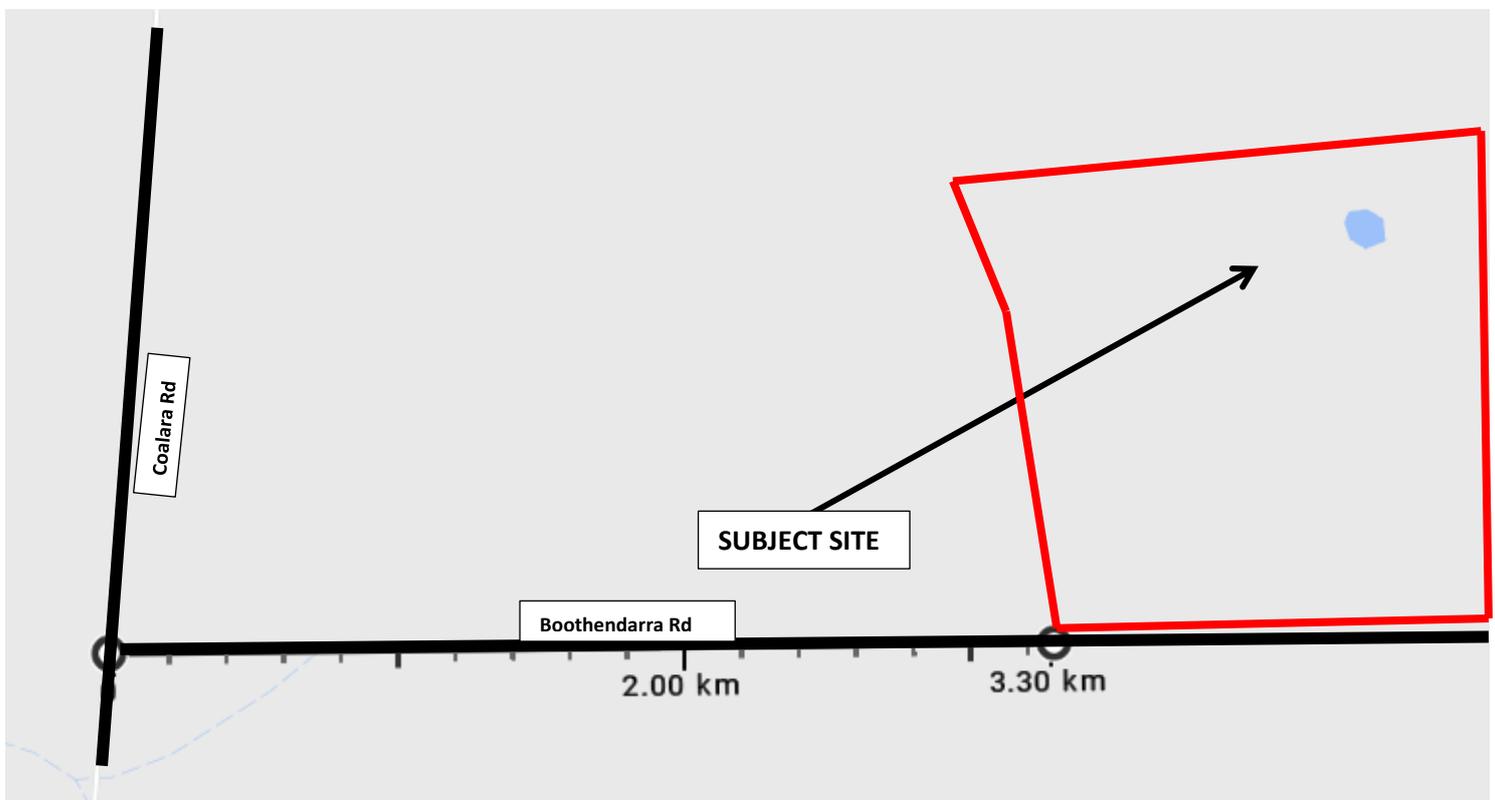


Figure 1: Location of the subject site on a road map.

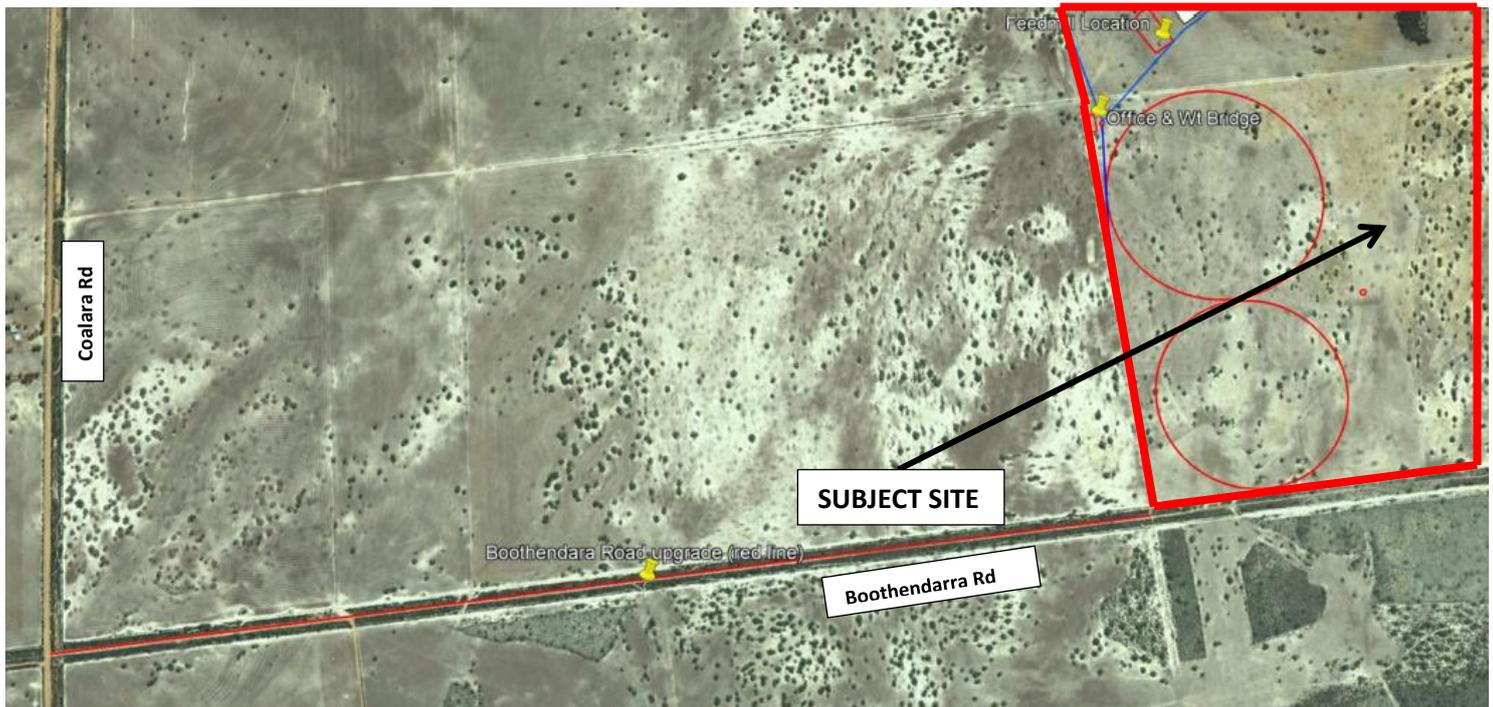


Figure 2: Location of the subject site on an aerial view

PROPOSED DEVELOPMENT

The site is presently vacant farmland used for cropping and grazing. The proposed development involves the operation of a beef feedlot on the site. A staged development is planned for the site as detailed below:

Stage 1: 4,000 Standard cattle units (2 years after DA approval).

Stage 2: 6,000 SCU (3 years after DA approval).

Stage 3: 8,000 (5 years after DA approval final stage).

Inward truck movements trips will be generated with cattle delivered to the site as business operator buys cattle from external farms to feed them on the feedlot for the specified days for various beef customer programs.

It is proposed to provide a full movement access from Boothendarra Road to Coalara Road that services the subject site.

Table 1 below gives the development summary.

Table 1: Development summary

Stage	1	2	3 (Final)
No. of head in Standard Cattle Units	4,000	6,000	8,000
Total feedstuffs at 80% occupancy (tonnes)	15,768	23,652	31,536
Total cattle inwards (tonnes)	4,171.4	6,257.2	8342.9
Total cattle outwards (tonnes)	6,539.3	9,809.0	13,078.7

VEHICLE ACCESS

The proposed development will be served by a full-movement crossover on Boothendarra Road at the south side of the subject site, which connects with Coalara Road. The 3.3 Km length of Boothendarra Road from Coalara Road to the site will be upgraded to be suitable for B Train trucks with cattle or feed.

Figure 3 illustrates the proposed access and egress system for the site.

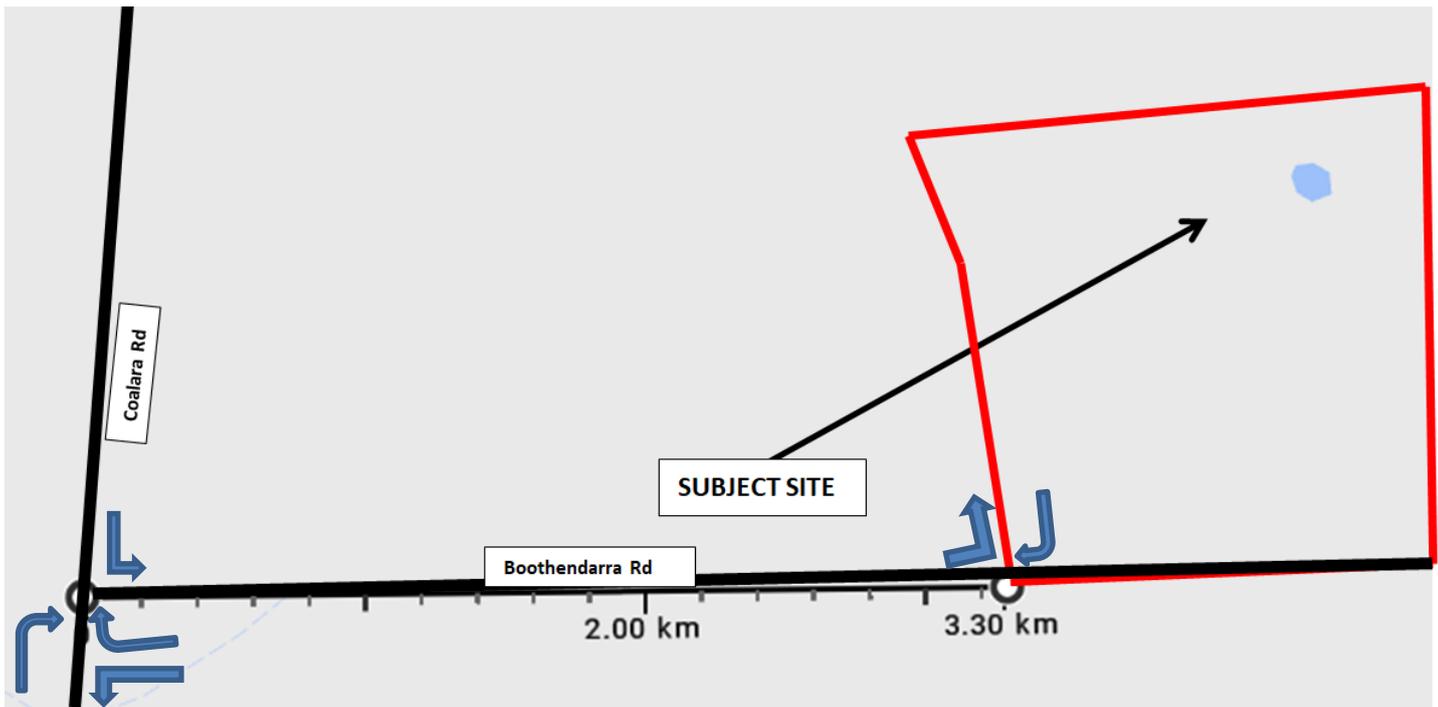
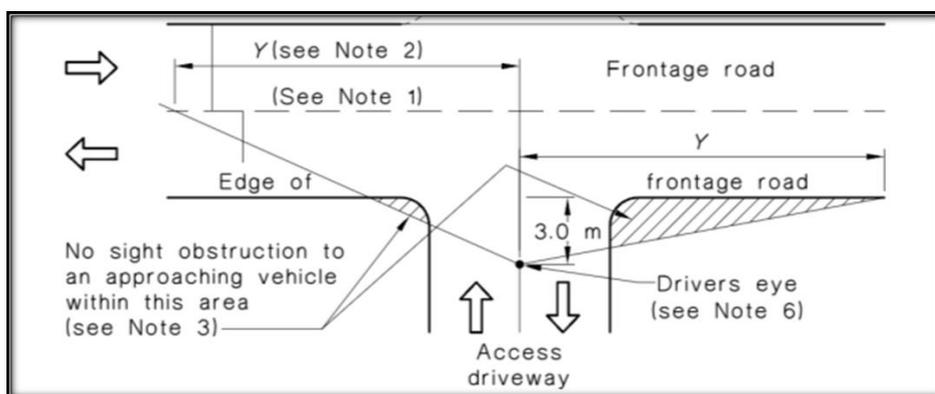


Figure 3: Proposed access and egress system

SIGHT DISTANCE FROM VEHICLE ACCESS

The vehicle exit from the site is off Boothendarra Road which is classified as an access Road. According to the Metropolitan Region Scheme (MRS), a recommended operating speed is 50km/hr. It will distribute traffic through to Coalara Road which is a local distributor road in the Main Roads WA Metropolitan Functional Road Hierarchy, with an operating speed of 60km/hr.

The sight distances have been assessed for an operating speed of 50km/hr on Boothendarra Road and an operating speed of 60km/hr on Coalara Road. Referring to Figure 3.3 of AS 2890.2:2004, it is recommended to leave the shaded area in the figure below (excerpt from AS 2890.2:2004) free of permanent obstacles for a length 'Y' of 69 metres.



Frontage road speed (Note 4) km/h	Distance (Y) along frontage road m		
	Access driveways other than domestic (Note 5)		Domestic property access (Note 6)
	Desirable 5 s gap	Minimum SSD	
40	55	35	30
50	69	45	40
60	83	65	55
70	97	85	70
80	111	105	95
90	125	130	Use values from 2 nd and 3 rd columns
100	139	160	
110	153	190	

The sight distances observed along Boothendarra Road for the proposed vehicle exit from the development site was 190 metres to the west and 200 metres to the east.

The sight distances observed along Coalara Road for the proposed vehicle exit from the development site was 190 metres to the north and 250 metres to the south.

All the sight distances observed exceed the desirable sight distance of 69 - 83 metres from the table above or the minimum sight distance required of 45 - 65 metres.

Figures 4 and 5 below show the observed sight distances from the development traffic entry/exit on Boothendarra Road and Coalara Road.



Figure 4: Observed sight distances from the site traffic entry/exit on Boothendarra Road



Figure 5: Observed sight distances from the site traffic entry/exit on Coalara Road

TRAFFIC IMPACTS OF THE PROPOSED DEVELOPMENT

The RTA NSW Guide to Traffic Generating Developments 2002 does not provide any traffic generation rate for a feed lot as defined in the proposed development. The traffic generation from the proposed development has been assessed using the Environmental Assessment as a guide.

The calculation of the traffic generated by the development at each subsequent stage has been summarised in Table 2 below.

Table 2: Summary of the calculation of trip generation

Stage	Standard Cattle Units (SCU)	Tonnage calculation at 80% occupancy	Tonnes	BD Loads	Trips/Year	Trips/Day
1	4,000	Total feedstock = (4,000 x 80% x 13.5 x 365/1000)	15,768	38	415	1.14
		1, tonnes of grain from CSC property	1,000	38	26.3	0.07
		All fibre production CSC property	2,365	38	62.2	0.17
		Net imported feed	12,402	38	326.4	0.89
		% of local imported feed	8,302	38	218.5	0.60
		% of Highway sourced feed	3,100	38	81.6	0.22
		Total cattle in @ 80% = (4,000 x 80% x 400 x 365/112)	4,171.4	36	115.9	0.32
		Total cattle out @ 75% = (4,000 x 75% x 635 x 365/112)	6539.4	36	181.6	0.50
		SUBTOTAL		53,647.8	300	1,275.4
2	6,000	Total feedstock = (6,000 x 80% x 13.5 x 365/1000)	23,652	38	622.4	1.70
		1.5 tonnes of grain from CSC property	1,500	38	39.5	0.11
		All fibre production CSC property	3,153	38	83.0	0.23
		Net imported feed	18,604	38	490.0	0.89
		% of local imported feed	13,953.1	38	367.2	0.60
		% of Highway sourced feed	4,651.0	38	122.4	0.33
		Total cattle in @ 80% = (6,000 x 80% x 400 x 365/112)	6,257.1	36	173.8	0.48
		Total cattle out @ 75% = (6,000 x 75% x 635 x 365/112)	9,312.4	36	258.7	0.71
		SUBTOTAL		81,082.6	300	1,769.9

Stage	Standard Cattle Units (SCU)	Tonnage calculation at 80% occupancy	Tonnes	BD Loads	Trips/Year	Trips/Day		
3 Final stage- (5 years after DA approval)	8,000	Total feedstock = (8,000 x 80% x 13.5 x 365/1000)	31,536	38	830	2.28		
		2, tonnes of grain from CSC property	2,000	38	53	0.14		
		All fibre production CSC property	4730.4	38	124	0.34		
		Net imported feed	24,805.6	38	653	1.78		
		% of local imported feed	18,604.2	38	490	1.35		
		% of Highway sourced feed	6,201.4	38	163	0.45		
		Total cattle in @ 80% = 8,000 x 80% x 400 x 365/112)	8342.86	36	232	0.64		
		Total cattle out @ 75% = (8,000 x 75% x 635 x 365/112)	13,078.7	36	363	1.00		
		SUBTOTAL			109,299.2	300	2,908.0	7.98

Table 3 below is a summary of the traffic generated by the 3 stages of the proposed development.

Table 3: Summary of the traffic generated by the 3 stages of the proposed development

Stage	SCU	BD Loads	Trips per year	Trips per day	Trips per hour
1	4,000	300	1,275.4	3.91	0.4/hr
2	6,000	300	1,769.9	4.84	0.48/hr
3	8,000	300	2,908.0	7.98	0.8/hr

The only traffic volume count from Main Roads data on the surrounding streets is for Watheroo Road which is 100 vehicles per day.

The Road Hierarchy for Western Australia gives some indication of the maximum desirable traffic volumes on roads based on their classification.

Coalara Road is considered to be a local distributor road with a maximum desirable traffic volume of 100 vehicles per day in non-built up areas. The recommended operating speed is 60 km/hr.

Boothendarra Road is considered to be an access road with a maximum desirable traffic volume of 75 vehicles per day.

The maximum daily trip rate as assessed in Table 3 above is 8 vehicles per day for stage 3 operation. Half of that traffic would access Watheroo Road. The percentage increase in traffic on Watheroo Road is = $(4/100) = 4\%$.

This is a low increase in traffic volume compared to the existing traffic flow on Watheroo and the surrounding roads. The maximum daily trip rate from the development at 8 Vehicles per day would have an insignificant impact on traffic using Coalara Road, Watheroo Road and nearby roads.

Impact on Surrounding Roads

The WAPC Transport Impact Assessment Guidelines (2016) provides the following guidance on the assessment of traffic impacts: “As a general guide, an increase in traffic of less than 10 per cent of capacity would not normally be likely to have a material impact on any particular section of road, but increases over 10 per cent may. All sections of road with an increase greater than 10 per cent of capacity should therefore be included in the analysis.

For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 per cent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis.” The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. The expected increase is 0.8 vehicles per hour. Therefore, the impact on the surrounding road network is considered to be insignificant and acceptable.

The traffic generated by the proposed development will be distributed via the local road network to Coalara Road and Watheroo Road. The total proposed development peak hour traffic is detailed in Figure 6 below. The development traffic distribution modelled in this report has been evaluated by considering the catchment area of the proposed development, existing traffic patterns and the identified key traffic routes.

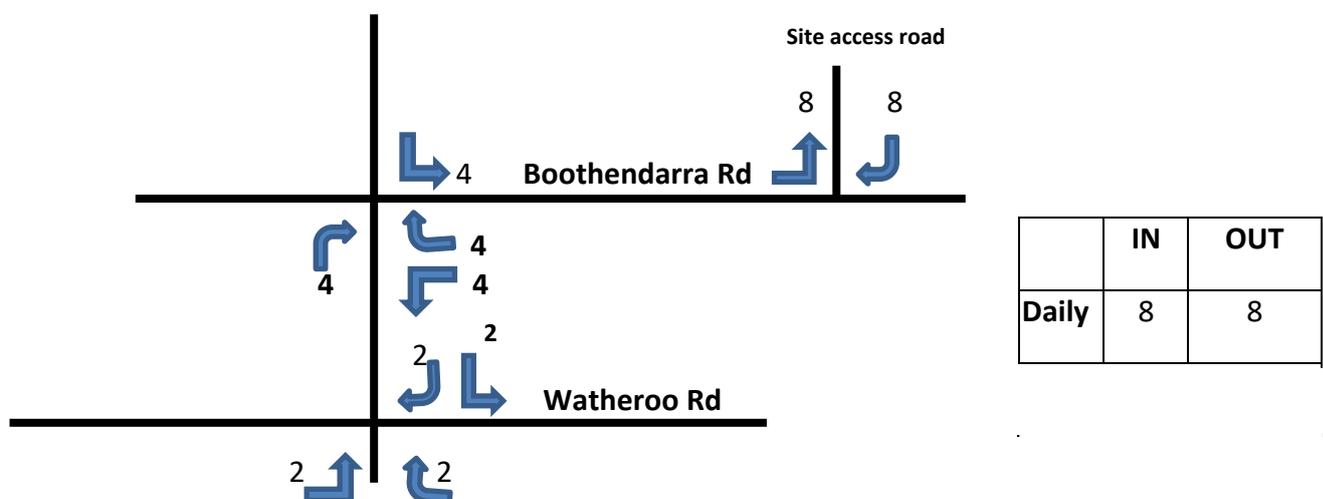


Figure 6: Daily traffic generated by stage 3 of the development.

PROPOSED ACCESS ROUTE TO AND FROM THE DEVELOPMENT

There are limited roads providing access to and from the site. The main access point is through the intersection of Boothendarra Road and Coalara Road. Traffic from the north would be travelling along Coalara Road. Traffic from the south would travel from Watheroo Road along Coalara Road.

Since Coalara Road is about 18kms long from Watheroo Road to the nearest main intersection with Marchagee Track, there are no suitable crossroads for traffic to divert from Coalara Road. However, the traffic impact analysis above has demonstrated that at the maximum stage 3, only 8 vehicles per day would be generated from the whole development.

This would have an insignificant impact on the existing road network used to provide access to and from the development site.

ASSESSMENT OF THE OPERATION OF THE DEVELOPMENT'S ACCESS TO COALARA ROAD

From Figure 6 above the total peak hour traffic turning in and out of the intersection of Boothendarra Road and Coalara Road is 8 vehicles per day. This represents only $(8/100) \% = 8 \%$ increase in Coalara Road daily traffic, which is a minor traffic increase on Coalara Road. This small increase would have no significant effect on the operation of the development's access from Boothendarra Road and Coalara Road.

Assessment under AustRoads Guide to Road Design (Part 3)

Sight Distance

Under Table 5.4 of the AustRoads Guide to Road Design (Part 3), adequate sight distance based on the road speed should be provided at the access driveway (reproduced here as **Table 4**).

Measurements taken off the Google Maps aerial photo indicate that more than 190 metres of sight distance can be provided in each direction along Coalara Road from the proposed access road of Boothendarra Road (see **Figure 5** above). From the values in Table 4, this distance is adequate for an operating speed of 60km/h. It is considered that, given the straight and wide cross-section of Coalara Road, the sight distance at the access road to the site (and therefore for the proposed development) is therefore considered to be adequate.

Table 4: Sight distance diagram from Table 5.4, AustRoads Guide to Road Design Part 3

Design speed (km/h)	Absolute minimum values Only for specific road types and situations ⁽¹⁾ based on $d = 0.46$ ^{(2), (3)}			Desirable minimum values for most urban and rural road types based on $d = 0.36$			Desirable values for major highways and freeways based on $d = 0.26$	
	$R_T = 1.5s^{(4)}$	$R_T = 2.0s^{(4)}$	$R_T = 2.5s$	$R_T = 1.5s^{(4)}$	$R_T = 2.0s^{(4)}$	$R_T = 2.5s$	$R_T = 2.0s$	$R_T = 2.5s$
40	30	36	–	34	40	45	–	–
50	42	49	–	48	55	62	–	–
60	56	64	–	64	73	81	–	–
70	71	81	–	83	92	102	113	123
80	88	99	–	103	114	126	141	152
90	107	119	132	126	139	151	173	185
100	–	141	155	–	165	179	207	221
110	–	165	180	–	193	209	244	260
120	–	190	207	–	224	241	285	301
130	–	217	235	–	257	275	328	346

Traffic Volumes and Gap Acceptance

The expected traffic volume entering to and from Coalara Road is 8 movements per day. Existing traffic using Coalara Road has been assessed as 100 vehicles per day from The Road Hierarchy for Western Australia.

The expected volume of up to 8 vehicles per day generated by the new development at stage 3 would lead to an increase of 8% vehicles per day. Equal numbers of right turn out from the site and left turns into the site may therefore be expected. It is considered that the width of Coalara Road at about 13 metres provides opportunities to enter and exit the site.

Table 5 and 6 show the required gap and follow-up headways for traffic entering a road. For left and right turns into Coalara Road the gap acceptance is 5 seconds. At 60km/h this distance is up to 83 metres. From the previous section on sight distance, the sight distances along Coalara Road are 190 to 250 metres. These easily exceed the desirable sight distance of 83 metres from the site to achieve the required gap acceptance. It is considered that the proposed development will not have a significant impact on the operation of Coalara Road traffic.

Table 5: Gap acceptance/follow-up headways from Table 3.4, Guide to Road Design (Part 4A)

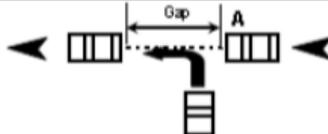
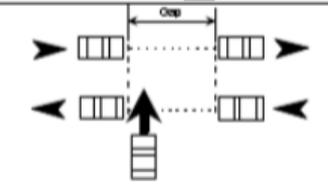
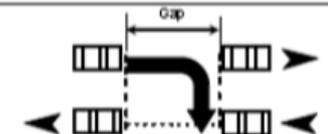
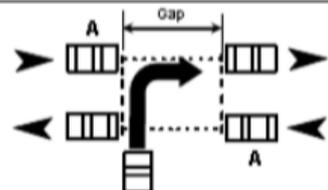
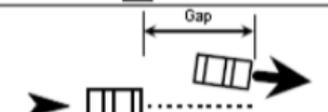
Movement	Diagram	Description	ta	tf
Left-hand turn		Not interfering with A Requiring A to slow	14-40 sec 5 sec	2-3 sec 2-3 sec
Crossing		Two lane/one way Three lane/one way Four lane/one way Two lane/two way Four lane/two way Six lane/two way	4 sec 6 sec 8 sec 5 sec 8 sec 8 sec	2 sec 3 sec 4 sec 3 sec 5 sec 5 sec
Right-hand turn from major road		Across one lane Across two lanes Across three lanes	4sec 5sec 6sec	2 sec 3 sec 4 sec
Right-hand turn from minor road		Not interfering with A One way Two lane/two way Four lane/two way Six lane/two way	14-40 sec 3 sec 5 sec 8 sec 8 sec	3 sec 3 sec 3 sec 5 sec 5 sec
Merge		Acceleration lane	3 sec	2 sec

Table 6: Minimum gap sight distance from Table 3.5, Guide to Road Design – Part 4A

Critical gap acceptance time (ta) (secs)	85th percentile speed of approaching vehicle (km/h)										
	10	20	30	40	50	60	70	80	90	100	110
4	11	22	33	44	55	67	78	89	100	111	122
5	14	28	42	55	69	83	97	111	125	139	153
6	17	33	50	67	83	100	117	133	150	167	183
7	19	39	58	78	97	117	136	155	175	194	214
8	22	44	67	89	111	133	155	178	200	222	244
9	25	50	75	100	125	150	175	200	225	250	275
10	28	56	83	111	139	167	194	222	250	278	305

The above assessment shows that the low daily traffic entering and leaving the site access to Coalara Road will have no difficulty in finding critical gaps to turn onto or from Coalara Road.

CONCLUSIONS

The proposed development will involve the operation of a farm with a beef cattle feedlot. The feedlot development will be constructed in 3 stages, starting with stage 1, to be completed 2 years from DA approval.

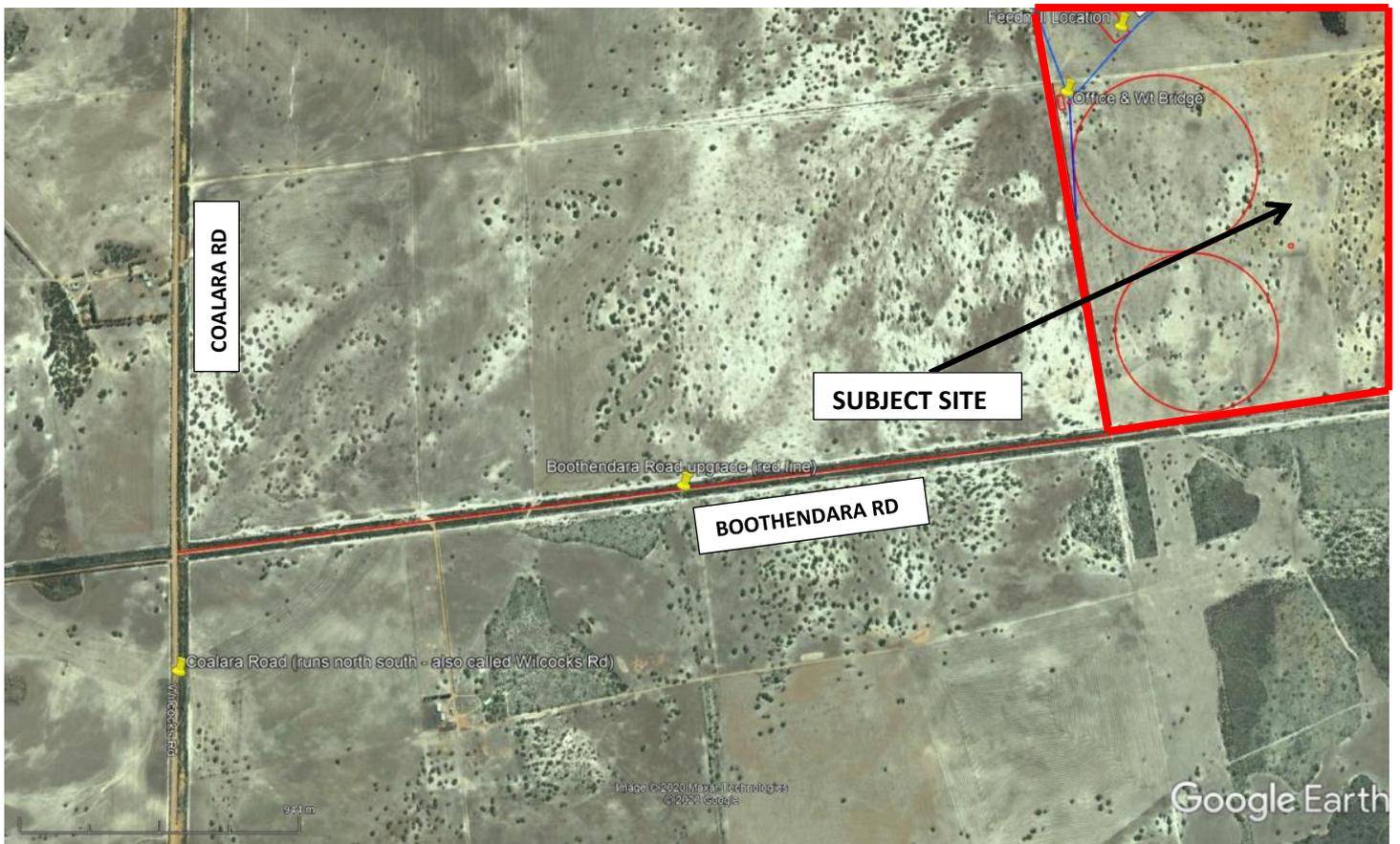
The assessment of the expected daily and peak hour vehicular traffic movements generated by the proposed development reveals low levels of increased vehicular traffic. The daily traffic generated by the development is 3.91 vehicles per day at stage 1, 4.84 vehicles per day at stage 2 and 7.98 vehicles per day at stage 3. The peak hour trip rate in stage 3 is 0.8 vehicles per hour. This low level of trips generated by the proposed development would have no significant effect on the traffic using Coalara Road and Watheroo Road. The daily traffic generated by the proposed development represents only 8% of the daily traffic on Coalara Road and 4% of Watheroo Road traffic.

The traffic generated by the proposed development at stage 3 is only 8 vehicles per day and therefore will have a less than minor impact on the existing traffic using Coalara Road and Watheroo Road.

The sight distances along Coalara Road for vehicles exiting the site through Boothendarra Road has been observed as 190 metres to the north and 250 metres to the south. The observed sight distances exceed the desirable sight distance of 83 metres for a critical gap to exit into the Coalara Road traffic. The site vehicle access complies with AS/NZS 2890.1-2004 in terms of sight distances. There is adequate sight distance for the rare pedestrians on Coalara Road.

Therefore, based on the assessment presented in this report, it is considered that the proposed development will have a less than minor effect on the existing traffic in the surrounding roads and very little to no effect on the on-street parking in the vicinity of the site.

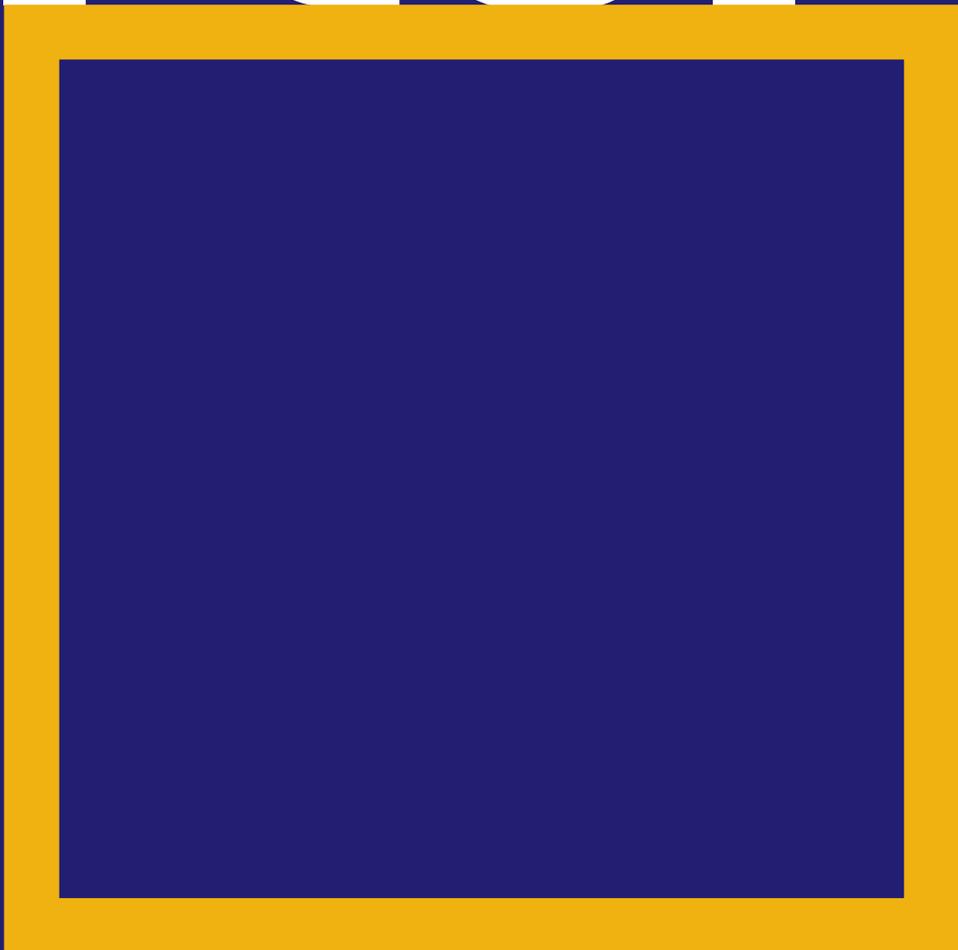
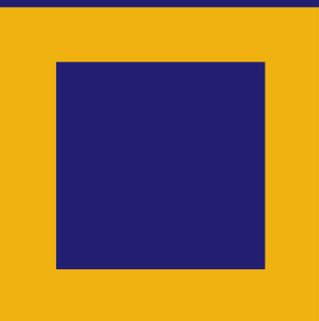
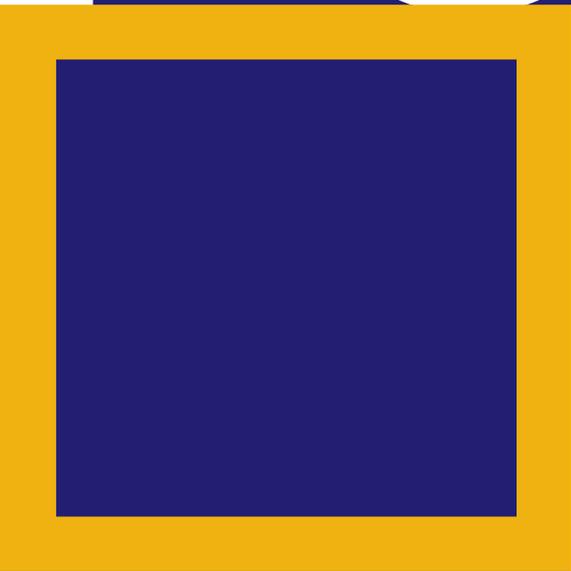
APPENDIX A: PROPOSED SITE LOCALE



2530 COALARA ROAD,
BOOTHENDARRA

PROPOSED FEEDLOT
TRAFFIC IMPACT ON
ROADS ASSESSMENT

Porter



REPORT PREPARED FOR

Shire of Dandaragan

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1.0 INTRODUCTION

1.1 Background

Porter Consulting Engineers has been commissioned by the Shire of Dandaragan to prepare a Traffic Impact on Roads Assessment of a Development Application received by the Shire for a proposed Cattle Feedlot at 2530 Coalara Road, Boothendarra. Access to the Site will be off Boothendarra Road north side approximately 3.3km east of Coalara Road.

The Site is located approximately 200km north of Perth. The location is shown in a regional context in **Figure 1** and in local context in **Figure 2**. Travelling on Coalara Road, Boothendarra Road is located approximately 25.6km north from North West Road and 7.2km north from Watheroo Road. Boothendarra Road is also located 24.5km south from Coorow Green Head Road along Willcocks Road and Coalara Road. Boothendarra Road, Coalara Road and Willcocks Road are all unsealed gravel roads. Marchagee Track at Coalara Road forms a northern boundary between the Shire of Dandaragan and Shire of Coorow.



Figure 1: Site Location – Regional Context (*GoogleMaps*)

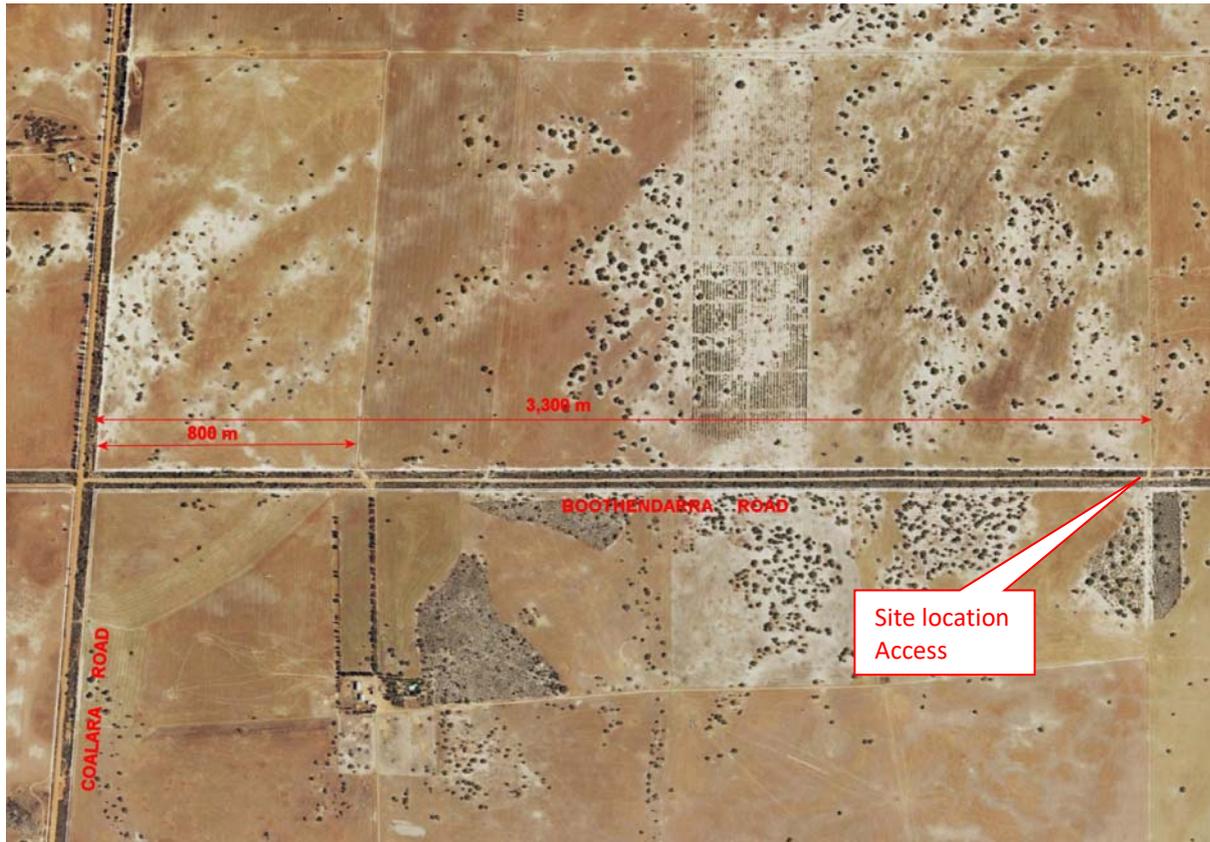


Figure 2: Site Location – Local Context (GoogleMaps)

1.2 Scope of Assessment

The Development Application proposes for the subject land (‘Sendem Downs’) to be used as a beef cattle feeding facility with the cattle transported into and away from the Site by trucks using the current road network.

In addition to the transportation of cattle there is also proposed to be transportation to the site by truck of grain for cattle feeding and a number of staff vehicles on a shift basis. The normal operating hours of the Site are proposed to be from 7.00am to 5.00pm, 7 days a week.

This report will review information supplied by the proponent’s Development Application Traffic Impact Assessment report prepared by Auswide dated December 2020 Revision 1.2 with the intent of making assessment of potential traffic impacts on the Shires road network and to provide recommendations.

The Shire of Dandaragan local government boundary northward along Coalara Road ends at Marchagee Track. Willcocks Road and Coorow Green Head Road are located in the Shire of Coorow and are accordingly under the control of the Shire of Coorow.

2.0 DEVELOPMENT PROPOSAL

2.1 Proposed Land Use

The Site is presently vacant cleared farmed land used for cropping and grazing. The proposed development is to create a beef cattle feedlot on the Site with development proposed in 3 stages to final full development as follows:

Stage 1: 4,000 standard cattle units (2 years after DA approval)

Stage 2: 6,000 standard cattle units (3 years after DA approval)

Stage 3: 8,000 standard cattle units (5 years after DA approval)

The development proposes vehicles access in and out of the site off Boothendarra Road located at approximately 3.3km east of Coalara Road.

The proponent has supplied the following tables of estimated traffic generation at 80% and 100% of full development (Stage 3).

Feedlot Occupancy	Light Vehicles Weekly			Trucks Weekly (B-Double Equivalents)					Weekly Total All Vehicles
	Staff	Other	Total	Local Feed	Other Feed	Cattle	Other	Total	
80%	16	5	21	9.4	3.1	11.4	1	25	46
100%	16	5	21	11.8	3.9	14.3	1	31	52

Assumed Annual Quantities	Total tonnes	B-Double Load (tonnes)	Trips per Year	Trips per Week	Trips per Day
Total feedstuffs @ 80% = 8,000 x 80% x 13.5 x 365/1,000	31,536	38	830	16	2.28
2,000 tonne of grain supplied from CSC properties	2,000	38	53	1.0	0.14
Fibre (hay, straw, silage) produced on CSC properties	4,730.4	38	124	2.4	0.34
Net imported feed	24,805.6	38	653	12.5	1.78
Local sourced feed	18,604.2	38	490	9.4	1.35
Highway sourced feed	6,201.4	38	163	3.1	0.45
Total cattle inward @ 80% = 8,000 x 80% x 400kg x 365/112	8,342.8	36	232	4.5	0.64
Total cattle out @ 80% = 8,000 x 79% x 635kg x 365/112	13,078.7	36	363	7.0	1.0
Cattle manure generated – to be re-purposed on the Site	0	0	0	0	0

2.2 Context to the Surrounds

Land surrounding this site is a mix of Nature Reserve and National Park or land that is largely similar to the current use on the Site of cleared for farming. There appear to be no higher intensity traffic generating developments in the surrounding near proximity.

3.0 EXISTING SITUATION

3.1 Road Infrastructure and Hierarchy

The proponent has indicated that trucks servicing the site will likely access Boothendarra Road from Coalara Road by 50% to the north from Coorow Green Head Road and 50% from the south from Watheroo Road.

The eastern 3.3km of Boothendarra Road between Coalara Road and the driveway access to the site is currently an unsealed gravel road. The first 800m of gravel pavement east of Coalara Road is slightly wider and appears to have more gravel basecourse than the remainder out to the 3.3km property access.

The southern 7km of Coalara Road between Watheroo Road and Boothendarra Road is currently an unsealed gravel road.

The northern 11.5km of Coalara Road and the 13km of Willcocks Road between Boothendarra Road and Coorow Green Head Road is currently an unsealed gravel road.

Watheroo Road between Coalara Road to Brand Highway is currently sealed as is Coorow Green Head Road between Willcocks Road to Brand Highway.

Figure 3 outlines the existing road geometry standard of Watheroo Road and the intersection with Coalara Road in the vicinity of the site. Coalara Road is sealed at the intersection only.



Figure 3: Road Standard of Adjacent Road Network (*Google Streetview*)

Road	Classification	Other Information
Boothendarra Road	Access Road	
Coalara Road	Local Distributor	
Willcocks Road	Local Distributor	School Bus Route
Watheroo Road	Regional Distributor	
Coorow Green Head Road	Regional Distributor	School Bus Route
Brand Highway	Primary Distributor	

Figure 4 outlines the road hierarchy classification of the surrounding road network.

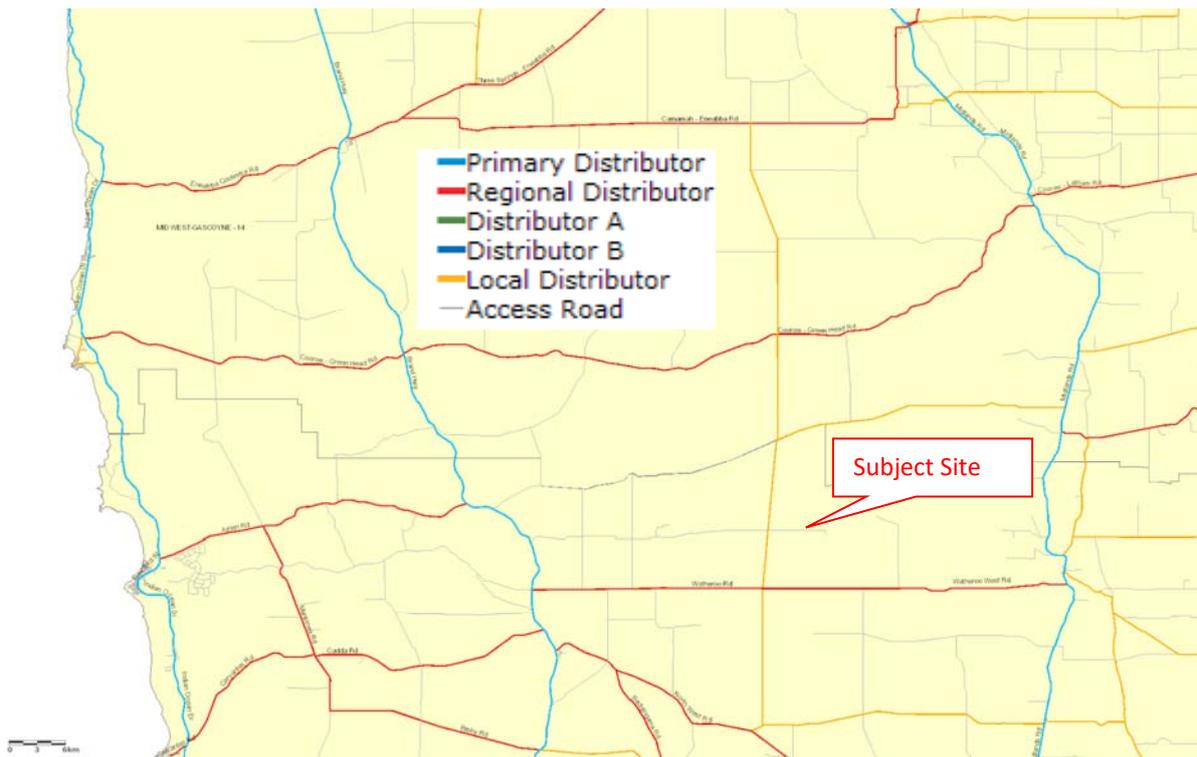


Figure 4: Road Hierarchy of Surrounding Road Network (*Main Roads website*)

3.2 Road Speed Zones

Main Roads WA website Road Information Mapping System provides the following speed limit details on the surrounding roads.

Road	Speed Zoning
Boothendarra Road	Unsigned 50kmh to 110kmh depending on design characteristics
Coalara Road	Unsigned 60kmh to 110kmh depending on design characteristics
Willcocks Road	Unsigned 60kmh to 110kmh depending on design characteristics
Watheroo Road	Unsigned up to 110kmh outside of built up area
Coorow Green Head Road	110kmh posted
Brand Highway	110kmh posted

3.3 Existing Traffic Volumes

Main Roads WA website Trafficmap provides available traffic counts data on roads surrounding the Site. A summary of these are outlined below.

Table 1: Existing Traffic Volumes of Existing Road Network

Road	AWT	Peak Hour	% Heavy Vehicles	85 th Percentile Speed	Date
Watheroo Road east of Brand Highway	33	1 – eastbound in AM 3 – westbound in AM 2 – eastbound in PM 1 – westbound in PM	18.2%	112 kmh	2020/21
Midlands Road south of Coorow Green Head Road	325	18 – northbound 18 – southbound	28.0%	114 kmh	2020/21
Midlands Road north of Watheroo Road	460	19 – northbound 20 – southbound	28.7%	102 kmh	2017/18
Brand Highway south of Watheroo Road	1,855	77 – northbound 99 – southbound	23.9%	112 kmh	2020/21
Brand Highway south of Coorow Green Head Road	1,177	47 – northbound 58 – southbound	28.0%	111 kmh	2016/17
Jurien Road west of Brand Highway	201	29 – eastbound in AM 1 – westbound in AM 2 – eastbound in PM 30 – westbound in PM	13.9%	112 kmh	2020/21

3.4 Crash History

Review of the recent crash history for surrounding intersections has been conducted for the five year period to the end of December 2019 from the Main Roads Western Australia Integrated Road Information System (IRIS) crash database.

	Coalara Rd/ Boothendarra Rd	Coalara Rd/ Watheroo Rd	Willcocks Rd/ Coorow Green Head Rd	Watheroo Rd/ Brand Highway
Total	0	0	0	1
Severity				
Hospital	-	-	-	-
Medical	-	-	-	-
Property Damage Major	-	-	-	1
Property Damage Minor	-	-	-	-
Crash Nature				
Rear End	-	-	-	-
Sideswipe	-	-	-	-
Right Angle	-	-	-	-
Right Turn Thru	-	-	-	-
Hit Object	-	-	-	-
Non Collision	-	-	-	1
Other/Unknown	-	-	-	-
Road Condition				
Dark	-	-	-	1
Dry	-	-	-	1
Curve	-	-	-	1

* Significantly over represented.

3.5 RAV Network

Main Roads Western Australia restricted access heavy vehicles routes mapping website indicates the following heavy vehicle combinations are permitted on the subject roads.

N6.1 – Tandem Drive RAV6 – 36.5m (88.5t)	IECC4 – Import/Export Containerised Cargo
N7.1 – Tandem Drive RAV7 – 36.5m (108.5t)	OBD1 – Oversize Road Train and B-Double (27.5m)
TD1.1 – Tri Drive Category 1 – 19.0m (52t)	OSDP6 – Oversize Divisible Products (36.5m)
TD4.3 – Tri Drive Category 4 – 36.5m (112t)	OWR2 – Over-width Routes (8.5m)

Road Section	RAV Network							
	N6.1	N7.1	TD1.1	TD4.3	IECC4	OBD1	OSDP6	OWR2
Boothendarra Road	x		x			x	x	
Coalara Road	x		x			x	x	
Willcocks Road	x		x			x	x	
Watheroo Road	x		x			x	x	
Coorow Green Head Road		x	x			x	x	
Midlands Road		x	x			x	x	
Brand Highway		x		x	x	x	x	x

Figure 3. RAV Network

4.0 ROAD OPERATING CONDITIONS

4.1 Affected Roads and Intersections

The Developer has proposed for the site to be accessed via two routes:

1. Commencing at Boothendarra Road, west to Coalara Rd, south on Coalara Rd to Watheroo Rd, west on Watheroo Rd to Brand Hwy
2. Commencing at Boothendarra Rd, west to Coalara Rd, north on Coalara Rd to Coorow Green Head Rd, west on Coorow Green Head Rd to Brand Hwy.

The Shire has indicated a preference for the first route only in order to constrain and limit damage to the current road network.

Roads	Sections	Road Length	Intersections
Boothendarra Road	From the Site Access to Coalara Rd	3.3 km	Boothendarra Rd / Coalara Rd
Coalara Road	Boothendarra Rd to Watheroo Rd	7.2 km	Coalara Rd / Watheroo Rd
Coalara Road	Boothendarra Rd to Marchagee Track	11.3 km	Coalara Rd / Marchagee Track
Willcocks Road	Marchagee Track to Coorow Green Head Rd	13.2 km	Willcocks Rd / Coorow Green Head Rd
Watheroo Road	Coalara Road to Brand Hwy	24.5 km	Watheroo Rd / Brand Hwy
Coorow Green Head Road	Willcocks Rd to Brand Hwy	42.2 km	Coorow Green Head Rd / Brand Hwy

Total length of the proposed route 1 from the Site to Brand Highway is 35km and the total length of the proposed route 2 from the Site to Brand Highway is 70km.

4.2 Intersection Sight Distances

The following tables list the minimum sight distance requirements for drivers for a typical reaction time of 2.0 seconds at intersections. Other factors that increase or decrease the minimum requirements include downhill and uphill gradients. Visually the gradients at these intersections appear below minimum thresholds and do not increase distances.

Road Sight Distance Requirements (Austroads)

Minimum Requirements (m)	110kmh
Stopping Sight Distance (SSD) (Car)	193m
Stopping Sight Distance (SSD) (Truck)	225m
Approach Sight Distance (ASD)	193m
Safe Intersection Sight Distance (SISD)	285m
Minimum Gap Sight Distance (MGSD) (5 sec)	153m

Property Access Sight Distance Requirements (AS2890.1)

Property Access Sight Distance (m)	110kmh
Minimum	153m
Desirable	190m

Available sight distances from site inspection.

Boothendarra Road

- a) at Property Access. Looking to the west the sightline is restricted by a low crest and vegetation in the verge from the fenceline to edge of road formation.



- b) at Coalara Road. North looking sightline along Coalara Rd from Boothendarra Rd there is a crest and a slight downhill grade that will extend vehicle braking distance on the gravel.



- c) at Coalara Road. South looking sightline along Coalara Rd is sufficient but there is restriction by vegetation to any vehicle exiting from the offset western leg of Boothendarra Road opposite.



Coalara Road

d) at Watheroo Road. East looking sightline along Watheroo Rd is sufficient.



e) at Watheroo Road. West looking sightline along Watheroo Rd is limited a crest.



Willcocks Road

f) at Coorow Green Head Road. East looking sightline is restricted by a crest.



g) at Coorow Green Head Road. West looking sightline is sufficient.



Watheroo Road

h) at Brand Highway. North looking sightline is sufficient.



i) at Brand Highway. South looking sightline is sufficient.



Coorow Green Head Road

j) at Brand Highway. North looking sightline is sufficient.



k) at Brand Highway. South looking sightline requires removal of a small area of verge vegetation on the corner.



Intersection	Permitted Speed (kmh)	Design Speed (kmh)	Minimum Required Sight Distance (m)	Available Sight Distance (m)
Property Access/ Boothendarra Rd	Up to 110 kmh	110 kmh	Minimum = 153m Desirable = 190m	Less than 50m, restricted by verge vegetation
Boothendarra Rd / Coalara Rd	Up to 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Approximately 250m to north (estimated). More than 300m to south.
Coalara Rd/ Watheroo Rd	Up to 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Less than 200m to west, restricted by crest. More than 300m to east.
Coalara Rd/ Marchagee Track	Up to 110 kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.
Willcocks Rd/ Coorow Green Head Rd	Posted 110 kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.
Watheroo Rd/ Brand Hwy	Posted 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.
Coorow Green Head Rd/ Brand Hwy	Posted 110kmh	110 kmh	SSD Truck = 225m ASD = 193m SISD = 285m	Both directions, more than 300m.

4.3 Heavy Vehicle Turning Swept Paths

Intersection	Permitted Heavy Vehicles	Proposed Heavy Vehicles	Compliance
Boothendarra Rd / Coalara Rd	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Coalara Rd / Watheroo Rd	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Coalara Rd / Marchagee Track	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Willcocks Rd / Coorow Green Head Rd	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Watheroo Rd / Brand Hwy	Up to B-Triple 36.5m and 88.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.
Coorow Green Head Rd / Brand Hwy	Up to B-Triple 36.5m and 108.5 tonne	B-Double up to 27.5m and 38 tonnes	HV's turn 'not lane correct'.

4.4 Road Formation

Road	Section	Existing	Comment
Boothendarra Road	From the Site Access to Coalara Rd	approx. 3.5m wide unsealed gravel formation	Poor suitability for HV's in even dry conditions.
Coalara Road	Boothendarra Rd to Watheroo Rd	approx. 8m wide unsealed gravel formation with soft gravel shoulders	Only suitable for trucks in dry conditions.
Coalara Road	Boothendarra Rd to Marchagee Track	approx. 8m wide unsealed gravel formation with soft gravel shoulders	Only suitable for trucks in dry conditions.
Willcocks Road	Marchagee Track to Coorow Green Head Rd	approx. 8m wide unsealed gravel formation with soft gravel shoulders	Only suitable for trucks in dry conditions.
Watheroo Road	Coalara Road to Brand Hwy	7m bitumen seal 1.0m unsealed shoulders	Suitable for low volume of HV's.
Coorow Green Head Road	Willcocks Rd to Brand Hwy	6.4m bitumen seal 1.0m unsealed shoulders	Suitable for low volume of HV's.

Austrroads provides rates of Passenger Car Equivalents (PCEs) for heavy vehicles in order to determine Passenger Car Units (PCUs). The following table provides the PCE multiplier rates for the 27.5m and 36.5m heavy vehicles.

AUSTROADS Bin (Vehicle Class)	Passenger Car Equivalents PCEs	Heavy Vehicles
2-5	2	
6-9	3	B-Double (27.5m)
10-11	4	B-Triple (36.5m)
12	5	

MRWA provides recommended cross-sections for rural roads on the state road network and these are presented in the following table.

Element	Design (PCUs / day)			
	150 - 500	500 - 1000	1000 - 3000	3000 - 8000
Traffic lanes ⁽¹⁾	7.0m (2 x 3.5)	7.0m (2 x 3.5)	7.0m (2 x 3.5)	7.0m (2 x 3.5)
Total shoulder	1.0m	1.5m	1.5 or 2.0m	2.0 or 2.5m
Minimum shoulder seal ⁽²⁾⁽³⁾⁽⁴⁾⁽⁵⁾	1.0m	1.5m	1.5 or 2.0m	2.0 or 2.5m
Wide centreline	N/A	N/A	None or 1m	None or 1m
Total carriageway	9.0m	10.0m	11.0m	12.0m

AADT is calculated based on Passenger Car Equivalents instead of AADT. The Passenger Car Equivalents (PCEs) for large vehicles are used to convert vehicles/day to PCUs/day.

Unsealed shoulders are not used and are replaced by sealed shoulders. The reason for this is two-fold: (a) sealed shoulders generally have lower maintenance and Whole of Life Cycle Costs, and (b) research has shown that sealed shoulders up to 2.0m wide have a significant reduction effect on run-off-the-road and head-on KSI crashes.

The development proposal has indicated trip generation at 100% development of 21 light vehicles/week and 31 B-Doubles/week. This translates to PCUs as follows.

Vehicles/week	PCE factor	PCU
21 light vehicles	1	21
31 B-Doubles	3	93
Total		114

The trips are provided as vehicles per week and the development proposes to operate 7 day/week, so the equivalent daily traffic is 16 PCU/day. This is less than the 150 PCUs/day that is the MRWA recommended threshold minimum for the road to be sealed.

Boothendarra Road



The existing gravel formation is narrow (approx. 3.5m) and noticeably soft in several places where the underlying soil is coming through. The existing formation is not expected to be sufficient and could quickly break down from the expected number of B-Double trucks proposed. There is insufficient width of pavement formation for two-way traffic passing to occur and the abutting verges are mostly vegetated soft sand making it difficult for vehicles to safely pull over to one side to provide passing clearance.

Coalara Road

Advisory signing was noted cautioning drivers that Coalara Road is a School Bus Route.



The intersection of Boothendarra Road with Coalara Road does not have a road name sign installed to confirm to drivers that the roadway is Boothendarra Road. The only signing is that of 'Sendem Downs' placed adjacent to a private mail box. Boothendarra Road (both legs) have the appearance of being private driveway access and not necessarily a public road which may mislead drivers looking for this road.



Watheroo Road

There appears to have been relatively recent motor vehicle tyre skids performed on Watheroo Road at the Coalara Road intersection resulting on some stripping of the seal surface. There is also considerable loose stone from the seal on the Coalara Road north leg. Increasing heavy vehicle turning traffic through this intersection will result in further quicker stripping of the seal surface and lead to earlier failure if not maintained in time.



4.5 Vertical and Horizontal Geometry

Road	Section	Comment
Boothendarra Road	From the Site Access to Coalara Rd	Straight alignment, but narrow formation constrained by vegetation with some gradients that slow moving heavy vehicles could cause heavy rutting and may have difficulty with traction if only has a single driving axle.
Coalara Road	Boothendarra Rd to Watheroo Rd	Straight alignment with some gradients but none excessive.
Coalara Road	Boothendarra Rd to Marchagee Track	Mostly straight alignment with some gradients but none excessive. Shallow S-curve through the Marchagee Track intersection.
Willcocks Road	Marchagee Track to Coorow Green Head Rd	Mostly straight alignment with some gradients but none excessive. Has a shallow S-curve on the approach to Coorow Green Head Road.
Watheroo Road	Coalara Road to Brand Hwy	Mostly straight alignment with some significant gradients. Has a shallow S-curve on the approach to Brand Highway.
Coorow Green Head Road	Willcocks Rd to Brand Hwy	Sinuous alignment with vertical changes in grade. S-curve on the approach to Brand Highway and with Falcone Drive side road 75m from Brand Highway that provides access to Bush Fire Brigade, Gull Service Station and Tourist stop. Property accesses on curves. Tyre tracks on pavement evidence that HV's do not turn lane correct.

4.6 Road Maintenance

The Shire of Dandaragan has advised that their unsealed gravel roads are typically graded three times each year. Those being a maintenance winter grading, a summer grading and a minor touch up grading in between.

The Shire has further advised that their expectation of the impact on Coalara Road to the unsealed gravel formation by the proposed B-Double heavy vehicles is that it is likely the road will now require 7 or 8 maintenance gradings per year.

The main purpose of winter maintenance grading is to provide a good running surface and to form crossfalls so that water runs off and does not pool to form potholes. Moisture is a critical component in maintenance grading so it is best done after light rainfall. However, when the gravel is more heavily wetted it becomes unsuitable for traffic of heavy vehicles and they cannot be permitted on it. Only light vehicles are permitted at those times.

Summer maintenance grading is often done to remove corrugations and improve the running surface. However, summer grading may only be partially successful as there will be little or no moisture to aid compaction.

Maintenance gradings are important for maintaining the Coalara Road and Willcocks Road gravel surface as this is a school bus route.

It should be recognised that due to the grading of the gravel material back and forth between the edge and centre of formation, gravel roads can have soft shoulders that comprise of gravel material that may not be well compacted but visually to drivers will appear similar to the

compacted centre of road. An inspection of Coalara Road and Willcocks Road indicates that there are sections that do not have soft shoulders. The following photograph shows the difference in compaction between the left and right vehicle tracks, where the left wheel track is on the shoulder.



Driver control of a vehicle is significantly affected by differences in wheel tracking and if the road should also be rutted or corrugated, then vehicle control is further affected. Many drivers therefore travel along the centre of road. Should opposing traffic occur requiring each vehicle to pull to the side away from the centre then vehicles may become less controlled, or even destabilised. Therefore as track flows increase proper maintenance of the pavement increases in importance to minimise crash risk.

5.0 SUMMARY AND CONCLUSION

The development application proposes two routes for vehicles to access the Site including their heavy vehicles up to B-Double combination and carrying loads up to 38 tonne. The roads in both routes are Restricted Access Vehicle routes approved for vehicle combinations allowing for at least up to B-Triple 36.5m combinations and carrying up to 88.5 tonne. Accordingly, the development's proposed B-Double heavy vehicle combinations are permitted.

Total length of the proposed Route 1 between the Site's access and Brand Highway via Watheroo Road is 35km and the total length of the proposed Route 2 between the Site's access and Brand Highway via Coorow Green Head Road is 70km. Route 2 adds a significant 70km extra of Shire road network to be maintained.

Boothendarra Road, Coalara Road and Willcocks Road are unsealed gravel roads. Unsealed gravel roads are typically only suitable for heavy vehicles in dry conditions. As when wet the surface of the pavement does not have a bound wearing course and is therefore more easily

damaged particularly in locations where braking and turning occur. Truck damage to gravel roads in the wet can result in sufficient damage as to make it impassable to cars. For this reason it is not uncommon to ban trucks from unsealed gravel roads when the gravel pavement formation is wet.

Route 1 has 10.5km of unsealed gravel roads and Route 2 has 27.8km of unsealed gravel roads. 3.3km of the two routes is common resulting in an additional 24.5km of unsealed gravel road needing to be maintained if Route 2 is used. If only Route 1 is used this would require maintenance of 10.5km of unsealed gravel roads and if Route 2 is also used then it would require an additional 24.5km of unsealed gravel roads to be maintained.

Route	Total length	Unsealed Roads Length (3.3km common)	Sealed Roads length	Extra Unsealed Roads Length	Extra Sealed Roads Length	Total Extra Roads Length
Route 1	35 km	10.5 km	24.5 km	-	-	
Route 2	70 km	27.8 km	42.2 km	24.5 km	42.2 km	66.7 km

The development has indicated a total weekly traffic generation at full development of 52 vehicles. It can be expected there will be a significant saving in both unsealed gravel road and sealed road maintenance if all the proposed development's vehicle trips are limited to travel via Route 1 only.

The Shires' unsealed gravel roads maintenance gradings are typically three per year but the Shire is expecting that the proposed B-Double heavy vehicles would require maintenance grading to now occur up to 7 or 8 times per year, particularly as Coalara Road and Willcocks Road are a school bus route. The development should cover the cost by the Shire for any additional maintenance gradings.

Heavy vehicles must not use unsealed gravel roads when it is wet as the formation becomes much more susceptible to significant damage and may cause it to become hazardous or impassable to light vehicle traffic. At those times, should heavy vehicles to or from the development travel on Coalara Road and Willcocks Road causing it to become damaged to the point where it is a hazard or impassable to light vehicle traffic then the development should cover the cost of damages reinstatement of the road formation incurred by the Shire.

Summary of Conclusions for Shire Consideration	
1	Install Boothendarra Road street name signs on Coalara Road at the two intersections.
2	Upgrade Boothendarra Road unsealed road pavement formation suitable for the proposed weekly number of B-Double heavy vehicles and other development traffic.
3	Do not permit heavy vehicles to use unsealed road pavements when the formation is wet.
4	Permit the proposed heavy vehicles to use only Route 1 (i.e. via Watheroo Road) so as to limit the extent of road network impacted and consequent road maintenance costs.
5	The proposed development cover the annual cost of additional road maintenance incurred by the Shire as a consequence of the development traffic.
6	The proposed development cover costs incurred by the Shire where it reinstates road pavement following damage caused by development traffic that has rendered the road hazardous or impassable to traffic.

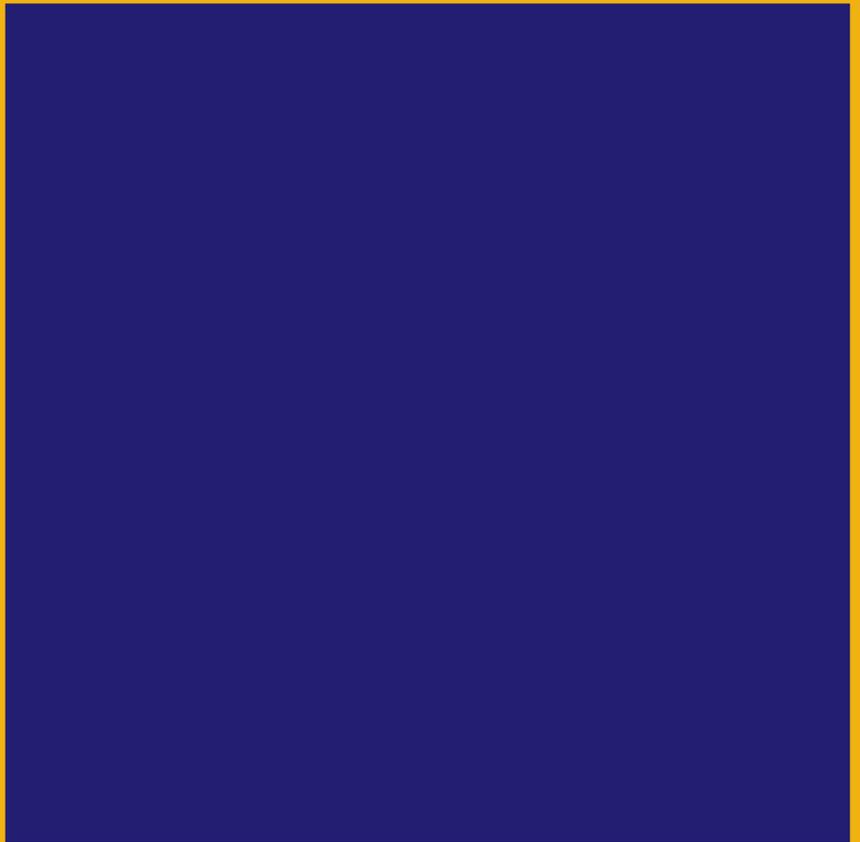
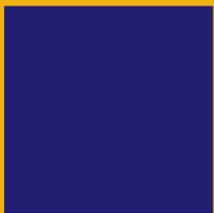
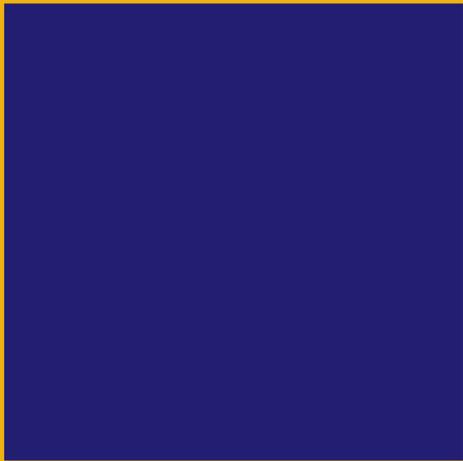


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Department of
**Primary Industries and
Regional Development**

Our reference: LUP 998
Enquiries: A Stuart-Street

Mr Brent Bailey
Chief Executive Officer
Shire of Dandaragan
PO Box 676
JURIEN BAY WA 6516
council@dandaragan.wa.gov.au

Date: 19 January 2021

Dear Brent

Proposed cattle feedlot – Sendem Downs, Coalara Rd, Boothendarra

Thank you for providing the Department of Primary Industries and Regional Development (DPIRD) with the opportunity to comment on the proposed development of a cattle feedlot which will eventually house up to 8 000 head of cattle. DPIRD would like to provide the following information for your consideration.

DPIRD has concerns about the suitability of the proposed land use on this property. These concerns are based on a number of issues not addressed by the proponent in the draft planning report. Consideration of these issues for planning is required in the State Planning Policy 2.5 Rural Planning (2016), Section 5.7 - Animal Premises and also in the Planning and Development (Local Planning Schemes) Regulations (2015), Part 9, Section 67(c), (o) and (q).

These concerns include:

Biosecurity:

- The property is surrounded on three sides by the Watheroo National Park. With the composting of cattle carcasses proposed onsite, as well as a concentration of grain, hay and odours associated with the feedlot activities, the risk of attracting vermin, particularly wild dogs and feral pigs, both known to be in the area, may be increased. If the facility is well managed, there should be minimal risk, and there is an active biosecurity group in the West Midlands who see management of feral pigs and wild dogs as a priority.
- DPIRD suggests monitoring for infestation of stable fly around feedlots, especially where cattle manure has been composted with straw and hay and spread across paddocks, as stable fly may be attracted to the area.

Environmental:

- The property containing the proposed feedlot sits over the Parmelia-Leederville aquifer in the Dandaragan Plateau Hydrozone. The closest long-term DPIRD groundwater monitoring site¹ to the proposed feedlot (BD1 located about 10km

¹ More information in Raper et al (2014) <https://researchlibrary.agric.wa.gov.au/rmtr/374/>

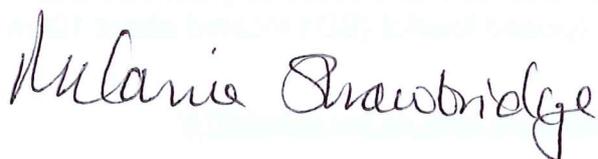
west of the property) shows rising groundwater trends (Attachment 1). Manure disposal, especially under centre pivot irrigation, could result in nutrient leaching over the aquifer.

- DPIRD requests more information on groundwater depths/qualities and any mitigation strategies designed to prevent any impact on groundwater.
- To achieve the planned installation of centre pivots and expansion of cropping areas for manure utilisation (including areas 2 and 3 south and west of the feedlot), clearing of native vegetation is needed, requiring the appropriate clearing permit from Department of Water and Environmental Regulation (DWER). Clearing of areas of native vegetation, however, may further contribute to an increase in the rate of water table rise beneath the property.
- The dominantly loose, sandy nature of the topsoil means the entire property has been rated as having an extreme risk of wind erosion. Some areas with surface ironstone gravels may have a reduced risk. Careful management of the groundcover to prevent loss of topsoil is important.
- The sandy and gravelly nature of the dominant soils means they have low to very low water storage and nutrient holding capacity with rapid profile permeability, so leaching losses may be high.
- DPIRD expects that feedlot pens will have a hardstand that has a permeability of at least 1×10^{-9} m/s. In the agricultural regions of Western Australia, soaking rains are more prominent than storm events and as such hardstands with a permeability of at least 1×10^{-9} m/s are required. DPIRD anticipates that the DWER will address this issue when assessing the works approval application.
- Animal Feed Manufacturing is a prescribed activity according to the *Environmental Protection Regulations 1987*, irrespective of whether the feed is to be used onsite or taken offsite (if the production capacity is more than 1000 tonnes per year). DPIRD would expect that this activity is assessed to ensure it is not impacting on the surrounding environment.
- DPIRD has not conducted a review of the Cropping Nutrient Balance (Section 6.3.5) as this will be assessed by DWER.
- DPIRD notes that there is no detail on the capacities of the wastewater containment infrastructure, including the effluent pond/s. It is assumed that this information will be provided to DWER as part of the works approval application process.

DPIRD expects the proponent to undertake a Nutrient and Irrigation Management Plan (NIMP) to establish how to manage the potential for degradation to the natural environment, particularly the dryland salinity hazard through rising groundwater and nutrient leaching.

I trust these comments inform you on this matter. If you have any queries, please contact Angela Stuart-Street at (08) 9780 6124 or angela.stuart-street@agric.wa.gov.au.

Yours sincerely



Dr Melanie Strawbridge
**Director Agriculture Resource Management Assessment
Sustainability and Biosecurity**

Attachment 1:

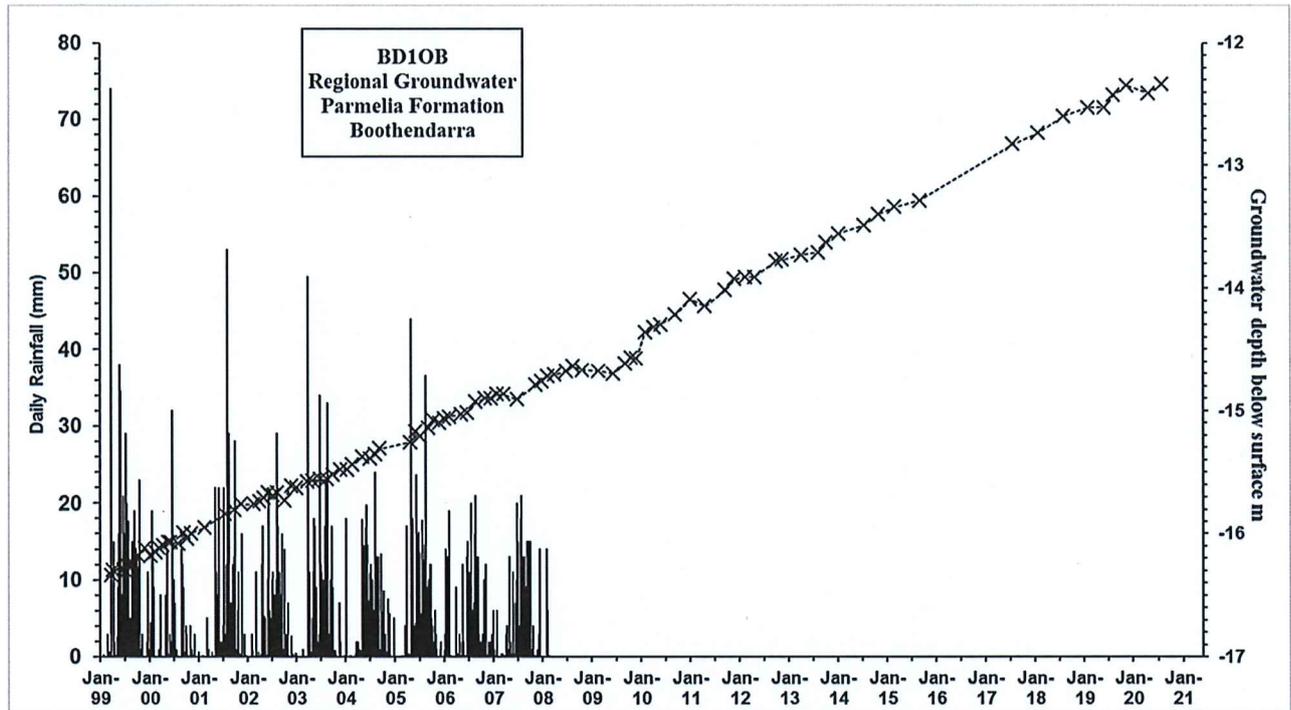


Figure 1a: Bore monitoring site BD1 is approximately 10km west of property



Department of Biodiversity,
Conservation and Attractions



*We're working for
Western Australia.*

Your ref: Sendem Downs
Our ref: PRS 46508
Enquiries: Anthony Desmond
Phone: 9964 0901
Email: anthony.desmond@dbca.wa.gov.au

Mr Rory Mackay
Planning Officer
Shire of Dandaragan
PO Box 676
JURIEN BAY WA 6516

Email: council@dandaragan.wa.gov.au

Dear Mr Mackay

PROPOSED CATTLE FEEDLOT – SENDEM DOWNS, BOOTHENDARRA

Thank you for your email of 8 December 2020 regarding the proposal for a cattle feedlot adjacent to Watheroo National Park.

The Department of Biodiversity, Conservation and Attractions (DBCA) provides the following advice in relation to the proposal.

All effluent, waste water runoff, dust and invasive weed control needs to be managed by the proponent so as not to have a detrimental impact on neighbouring conservation values.

Boundary fencing will need to be managed by the proponent to prevent cattle impacting on native vegetation in neighbouring conservation tenure.

Bushfire risk mitigation for the proposal by the proponent should not have undue expectations placed on the normal fire management practices of DBCA Moora District within Watheroo National Park.

Thank you for raising this matter to our attention. If you have any queries regarding these comments or would like to discuss further, please contact Anthony Desmond on 9964 0901

Yours sincerely

Nigel Sercombe
REGIONAL MANAGER
Midwest Region

13 January 2021



mainroads
WESTERN AUSTRALIA

Enquiries: Pia Marshall 08 9956 1210
Our Ref: 20/1399, D21#126638
Your Ref: NA

1 February 2021

Shire of Dandaragan
Rory Mackay
By email: rorym@dandaragan.wa.gov.au

Dear Rory,

Proposed Cattle Feedlot, 2530 Coalara Road, Boothendarra.

Thank you for consulting Main Roads on the proposed development of a Cattle Feedlot at 2530 Coalara Road, Boothendarra.

The proposed development site is not located within or adjacent to a road reserve under Main Roads jurisdiction and it is considered that the proposal would have no detrimental impact on the level of service, amenity or safety of users of the existing Main Roads network.

Notwithstanding, Main Roads supports the findings of the Traffic Impact Assessment prepared by Porter Consulting Engineers, in particular section 5.0 Summary and Conclusion, point 4 of the table "Permit the proposed heavy vehicles to use only Route 1 (i.e. via Watheroo Road) so as to limit the extent of road network impacted and consequent road maintenance costs".

If you would like any further information please contact Pia Marshall on (08) 9956 1210 or by email pia.marshall@mainroads.wa.gov.au

Yours sincerely,

for Bernie Miller
Regional Manager
Mid West-Gascoyne Region



SUSTAINABLE BEEF SYSTEMS

Pty Ltd

Our Ref: Mr R Mackay emails 01/02/2021
Your Ref: Coalara Feedlot Development

12 February 2021

Planning Officer
Shire of Dandaragan
69 Bashford Street
JURIEN BAY WA 6516

ATTENTION: Mr Rory Mackay

Dear Rory,

**SUBJECT: Central Stockcare Pty Ltd ATF The Ryan Family Trust
Coalara Feedlot Development Application
Response to mooted preliminary development conditions**

Thank you for your advisory emails of 1 February 2021.

Dean Ryan and I have considered your advice and the 4 email attachments.

This letter provides the proponent response to the list of draft conditions that are listed in your email and addresses matters implied and raised in departmental agency responses.

Specific proposed conditions of consent informed by the Porters "Road Assessment" and listed in your email were:

- Boothendarra Road will become a private gated access from Coalara Road via a \$10 per annum gate permit.
- Heavy vehicles will not be permitted on Coalara Rd when the road is wet.
- Heavy vehicles will be limited to 'Route 1 (via Watheroo Rd)' only.
- Road user agreement for use of Coalara Rd will be established between the Shire and Central Stockcare - annual payment of additional road maintenance undertaken by the Shire as a result of the feedlot traffic. This will be at full 8,000 head capacity - 4x additional gradings and 1-2x rollings, estimated around \$10-15K at this stage.
- Road damages condition - if Coalara Rd is used by the feedlot's heavy vehicles when closed during wet periods and the road is rendered impassable to traffic, Central Stockcare will be required to pay the extra costs incurred by the Shire in reinstating the road pavement.

Boothendarra Road private gated access

We accept that Boothendarra Road will become a private gated access from Coalara Road via a \$10 per annum gate permit.

27 Marns Street
Wagga Wagga
NSW 2650

We accept that the road upgrade and maintenance cost to the east of the private gate on Boothendarra Road is the responsibility of the proponent.

Wet weather road conditions (Coalara Rd)

We accept that heavy vehicles will not be permitted on Coalara Rd when the road is closed in wet weather.

Heavy vehicle route to the Coalara Feedlot

We accept that heavy vehicles entering and exiting the feedlot will be limited to 'Route 1 (via Watheroo Rd)' only.

Road user agreement

We have concerns about the proposed road user agreement mooted in dot point 4.

The beef feedlot business is a capital intensive, high turnover, low margin business. Beef feedlots generate beneficial flow-on effects to the local community, the state and the nation. The multiplier effect acts to provide many more jobs offsite than onsite.

The Coalara Feedlot will be funded from private borrowings raised by the Ryan family. The Ryan family is a relatively small family business. This financial model is quite unlike publicly listed mining companies involved in non-renewable extractive activity. The business as a primary food producer is potentially indefinitely sustainable.

We accept that a road user agreement would contain provision for repairs at cost for damage caused by using a closed road in wet weather (see road damages condition below). However, we would request that no annual ongoing fee be charged for public road maintenance outside the private gate on the Boothendarra Road on the basis that it erodes viability in a low margin business. We also advise that it will be a significant period before the business reaches the maximum proposed capacity upon which the Shire indicates it will strike the charge rates.

If a public road user agreement were to contain an annual maintenance cost (which as noted above the proponent does not support), then a "variable but capped" levy linked to the annual truck activity of the feedlot would be a more equitable system. Such a system (if agreed) would also need to be linked to the CPI (or other appropriate index) to ensure escalation did not occur in the case of a change in philosophy or administration. In poor trading environments feedlots at times close-down and cease business activity. In such a time of financial hardship it would be unreasonable to expect the operator to pay the Shire for road maintenance.

Road damages condition

We accept in principle that if the feedlot heavy vehicles use a closed road during wet weather and render the road impassable to traffic, then the feedlot operator will be required to pay extra costs incurred by the Shire to reinstate the road pavement.

DPIRD matters of concern

It is noted that DPIRD officers raised a significant number of matters as “concerns” in response to Shire advice of the proposed feedlot development. DPIRD officers did not have a copy of the full Works Approval Application (WAA) documents now lodged with DWER and may therefore have “concerns” that have been addressed in the full set of WAA papers. Following are advisory notes in respect of each matter raised by DPIRD.

Biosecurity

DPIRD have raised concerns in respect of biosecurity matters.

The proponent has committed in WAA documents submitted to DWER, to become, and maintain accreditation, under the Feedlot Industry Accreditation Scheme (FLIAS).

A key plank of the FLIAS (recently upgraded) is the management of biosecurity issues on site including the management of pests and vermin on the premises. We consider that an appropriate condition (if one was determined to require application as a development consent condition) is the achievement and maintenance of accreditation under the FLIAS.

The proponent also understands that the DWER will consider this issue and has in the recent past prescribed conditions in other environmental licences issued to similar developments. We believe it is unnecessary for the Shire to include such conditions in the DA consent.

Environmental – Groundwater and native vegetation

The full WAA document set deals at length with the groundwater issues. Detail sought by DPIRD has been supplied to DWER in a series of reports including the feedlot Environmental Assessment.

In addition, the proponent has engaged in significant interaction with DWER to reach agreement on the issue of a groundwater licence for this development. It is understood that the rising groundwater in the aquifer a key reason to grant a licence for access to the groundwater resource for this premises and therefore aid in stabilising the groundwater levels.

Groundwater licence conditions prescribed by DWER in licence GWL205125(1) aim to prevent and monitor possible contamination of the Parmelia-Leederville aquifer. It is recommended that DPIRD read this licence to gather the additional information they indicate is required.

DPIRD have made certain assumptions in respect of clearing of native vegetation in cropping areas nominated for compost utilisation. The areas identified for manure utilisation on dryland cropping areas have been farmed for dryland cereal cropping in the past and do contain scattered timber that will be retained in future cropping programs. Further clearing in these dryland areas is not proposed. Spreading of manure on irrigation pivots is not proposed.

The centre pivot irrigation areas remarked upon by DPIRD are not an element of this development application and therefore not a matter for the Shire to regulate as part of this development consent. These matters have been, and will be, dealt with by DWER.

Environmental – Soils and feedlot hardstand

The full WAA document set deals at length with the premises soils, cropping programmes and the feedlot hardstand issues. Detail sought by DPIRD has been supplied to DWER in a series of reports including the feedlot Environmental Assessment.

If deemed appropriate, DWER will address these concerns in their determination and in the application of conditions in the DWER environmental licence.

Environmental – Feedlot feed-milling

The full WAA document sets out the nature and scale of animal feed milling and mixing proposed for the development including the postulation that all feed manufactured on site will be used on the premises. Control of possible environmental impacts related to feed milling are covered in the Environmental Assessment. The case for licencing under the provisions of the Act relating to animal feed manufacturing activity will be determined by DWER and dealt with in the environmental licence specifications and conditions.

Environmental – Cropping nutrient balance and wastewater containment

The full WAA document set supplied to DWER deals with the cropping programmes, nutrient balance, and wastewater containment.

If deemed appropriate it is understood that DWER will address these concerns in their determination and with licence conditions in the environmental licence.

Environmental – Nutrient and Irrigation Management Plan

In gaining irrigation licence, GWL205125(1), the proponent prepared and supplied a nutrient and irrigation management plan to DWER for the management of the irrigation pivots. As noted above the pivots and the water licence are not integral elements included in this development application and as such are not matter's for consideration by the Shire in determining the feedlot development application and conditions of consent.

Department of Biodiversity, Conservation and Attractions

We note the response from this agency and believe the comments to be fair and reasonable. We understand that these matters will be considered and dealt with in the WAA before DWER. Matters of importance raised by DBCA are more appropriately conditions of environmental licencing.

We believe it is unnecessary for the Shire to include conditions related to these matters in the DA consent.

Main Roads Western Australia

We note the response from Main Roads Western Australia and believe the comment to be fair and reasonable particularly in respect of the reference to the designated heavy vehicle route. We understand that the comments in this response will be incorporated into Shire development consent conditions.

Please call if you have any queries.

Yours faithfully,
Sustainable Beef Systems Pty Ltd

A handwritten signature in blue ink, appearing to read 'Peter Paradice', is centered on a light pink rectangular background.

Peter Paradice
Director
0404 444650

CC Dean Ryan – Central Stockcare Pty Ltd