

16/01/2023

Chief Executive Officer
Douglas Shire Council
PO Box 773
MOSSMAN QLD 4873

Attention Neil Beck

Dear Neil,

RE: Information Request Response – Your reference MCUC 2022_5203/1 Bamboo Creek Road Bamboo

I refer to council's request for further information dated 13 December 2022 and wish to advise the following:

Site Plan

- 1. It is understood the owner of the premises is getting an update site survey to detail the earthworks undertaken on the site. Update the site plan once the survey has been completed.*

Please find attached an amended Site Plan that has been completed based on the updated site survey.

Site and Soil Evaluation

- 2. Provide a site and soil evaluation detailing the proposed wastewater disposal system to be installed for the dwelling.*

Please find attached a wastewater assessment report prepared by Earth Test for the proposed new wastewater management system to be provided.

Vehicle Access

- 3. Provide detail with regard to the vehicle access onto Bamboo Creek Road. This detail can also form part of the response to the information request issued for the operational works application that has been lodged with council.*

The vehicle access driveway is existing and was constructed as part of the operational works carried out prior to the Material Change of Use application being lodged in December 2022. The gravel driveway location is shown on the updated site plan as determined via the updated site survey. The access to Bamboo Creek Road will be addressed as part of the operational works RFI.



If you have any queries or require any additional information, please do not hesitate to contact Scott Dillon on 07 4222 9888

Yours faithfully,



Scott Dillon
The Building Approval Company



Site Classification

And

Wastewater Management System

For

Alan Jenkins

At

Lot 3 Bamboo Creek Road

Miallo

INTRODUCTION:

Earth Test has been engaged by Alan Jenkins to assess, design and report on Site Classification and a Domestic Wastewater Management System at Lot 3 Bamboo Creek Road, Miallo.

Real Property Description:-

Lot 3, on RP 808141

Local Authority: Douglas Shire Council.

It is understood the intention is to construct a new dwelling at the site.

A site and soil evaluation was carried out in August 2022.

SITE FACTORS:

The site was identified by its site address, a photo was taken to confirm the sites identity.

The Lot has an area of 4364 square metres and is a cleared block.

The water supply to the site is reticulated.

No rock outcrops were noted at the site.

Three Dynamic Cone Penetrometer tests were performed at locations DCP1, DCP2 and DCP3, three boreholes BH1, BH2 and BH3 and one constant head soil permeability test P1 as shown on the site plan.

Atterberg Limits tests were performed on a disturbed sample from Borehole1.



Site testing at Lot 3 Bamboo Creek Road, Miallo



SITE INVESTIGATION REPORT

BOREHOLE LOG

CLIENT: Alan Jenkins.		DATE SAMPLED: 24/08/2022
PROJECT: Lot 3 Bamboo Creek Road, Miallo.		Sampled by: GN
REPORT DATE: 5/09/2022		
BOREHOLE No: BH1		
DEPTH (m)	DESCRIPTION	COMMENTS
0.0-1.2	Orange Red-Brown Sandy Silty-Clay	Disturbed sample 0.6- 0.9m.
1.2-2.0	Red-Brown Sandy Silty-Clay	Watertable not encountered
BOREHOLE No: BH2		
DEPTH (m)	DESCRIPTION	COMMENTS
0.0-0.1	Red-Brown Sandy Silty-Clay (Fill)	Watertable not encountered
0.1-1.2	Brown Sandy Silty-Clay (Fill)	
1.2-1.3	Grey-Brown Sandy Silt-Clay w Gravel	
1.3-2.0	Red-Brown Sandy Silty-Clay	
BOREHOLE No: BH3		
DEPTH (m)	DESCRIPTION	COMMENTS
0.0-0.1	Red-Brown Sandy Silty-Clay (Fill)	Watertable not encountered
0.1-1.2	Brown Sandy Silty-Clay (Fill)	
1.2-1.3	Grey-Brown Sandy Silt-Clay w Gravel	
1.3-2.0	Red-Brown Sandy Silty-Clay	



ATTERBERG LIMITS TEST REPORT

CLIENT: Alan Jenkins

SAMPLE No:

PROJECT: Lot 3 Bamboo Creek Road, Miallo

DATE SAMPLED: 24/08/2022

SAMPLE DETAILS: BH1 0.6-0.9m

Sampled by: GN

REPORT DATE: 5/09/2022

Tested By: KH

TEST METHOD	RESULT
Liquid Limit: AS 1289.3.1.2	39%
Plastic Limit: AS 1289.3.2.1	23%
Plasticity Index: AS 1289.3.3.1	16%
Linear Shrinkage: AS 1289.3.4.1	9.5%
Length Of Mould:	125mm
Cracking, Crumbling, Curling, Number Of Breaks:	Nil
Sample History:	Oven Dried
Preparation Method:	Dry Sieved
Insitu Moisture Content:	17.5%
% Passing 0.075mm:	



DYNAMIC CONE PENETROMETER REPORT
AS 1289.6.3.2

CLIENT: Alan Jenkins

SAMPLE No: SI 588-22

PROJECT: Lot 3 Bamboo Creek Road, Miallo.

DATE SAMPLED: 24/08/2022

SAMPLE DETAILS: Sites "DCP1, DCP2 & DCP3"
as per site plan.

Tested By: GN

REPORT DATE: 5/09/2022

DEPTH (Metres)	Site: DCP1	Site: DCP2	Site: DCP3
	No Blows	No Blows	No Blows
0.0 – 0.1	9	5	5
0.1 – 0.2	4	4	5
0.2 – 0.3	3	5	4
0.3 – 0.4	3	4	4
0.4 – 0.5	3	3	3
0.5 – 0.6	3	4	3
0.6 – 0.7	3	3	3
0.7 – 0.8	2	3	4
0.8 – 0.9	3	3	5
0.9 – 1.0	3	3	6
1.0 – 1.1	3	4	5
1.1 – 1.2	4	4	6
1.2 – 1.3	4	3	8
1.3 – 1.4	3	4	8
1.4 – 1.5			
1.5 – 1.6			
1.6 – 1.7			
1.7 – 1.8			
1.8 – 1.9			
1.9 – 2.0			



SITE CLASSIFICATION

Lot 3 Bamboo Creek Road, Miallo.

Uncontrolled Fill exists at the site.

The Dynamic Cone Penetrometer test results indicate adequate allowable bearing pressure to 1.5m.

The Atterberg Limits test results indicate a slightly reactive soil.

Due to the “uncontrolled fill” the site must be classified **CLASS-“P”**.

To comply with the “Building Services Board Subsidence Policy” advice should be sought from a Registered Professional Engineer for footing design.

All site works must be carried out in accordance with AS 3798-2007 “Guidelines on earthworks for commercial and residential developments”

If the depth of any cut exceeds 0.5m or uncontrolled fill exceeds 0.4m the classification shall be reconsidered.

Because this investigation is limited in scope and extent, it is possible that areas may exist which differ from those shown on the test hole records and used in the site classification. Should any variation from the reported conditions be encountered during excavation work, this office must be notified immediately so that reappraisal of the classification can be made.

Gavin Negri
Earth Test



SITE AND SOIL EVALUATION

Lot 3 Bamboo Creek Road, Miallo.

The site and soil evaluation carried out on 24/08/2022 provided the following results.

Site Assessment

<u>Site Factor</u>	<u>Result</u>
Slope	Level Pad – 7 Degrees and 6 Degrees
Shape	Linear Divergent
Aspect	West and South South-West
Exposure	Good.
Erosion/land slip	Not noted.
Boulders/rock outcrop	Nil
Vegetation	Bare
Watercourse/Bores	>10m from LAA.
Water table	Not encountered during investigation.
Fill	Some uncontrolled fill in pad.
Flooding	Not likely.
Channelled run-off	Not found
Soil surface conditions	Firm, Dry
Other site specific factors	

Soil Assessment

<u>Soil Property</u>	<u>Result</u>
Colour	Brown
Texture	Sandy Clay-Loam
Structure	Weak
Coarse Fragments	<10%
Measured Permeability Ksat (m/d)	Indicative Permeability 0.5-1.5
Dispersion	Slakes
Soil Category	4
Resultant Design Load Rate, DLR (mm/day)	15



WASTEWATER MANAGEMENT SYSTEM

An “All-Waste” septic tank discharging into an “Advanced Enviro-Septic” bed is considered suitable for this site.

This system has been designed to conform to the requirements of the following codes, acts, regulations and standards. All work to be carried out in accordance with the following codes.

- AS/NZ 1547:2012 On-site domestic-wastewater management.
- Queensland PLUMBING AND DRAINAGE ACT 2018.
- Queensland STANDARD PLUMBING AND DRAINAGE REGULATION 2019.
- Queensland PLUMBING AND WASTEWATER CODE.

SYSTEM SIZING FACTORS.

A population equivalent of five (5) persons has been chosen for the proposed three bedroom dwelling.

The residence is connected to a reticulated water supply system.

Standard water-reduction fixtures must be used to ensure the integrity of the system. They shall include:-

- Dual flush 6/3 Litre water closets.
- Shower-flow restrictors.
- Aerator faucets (taps).
- Water-conserving automatic washing machines.

Note: - Garbage grinders are not permitted.

As per AS/NZ 1547:2012 Appendix H, Table H1 the “Typical wastewater design flow” for a “Reticulated water supply” gives a flow allowance of 150 L/Person/day.

The daily flow for the dwelling (5 persons @ 150 L/person/day) will be 750 L/day.

From AS/NZ 1547:2012 Table J1 the minimum capacity of the All-Waste septic tank required is 3000 L.

The tank must NOT be fitted with an outlet filter.



LAND-APPLICATION SYSTEM

DISPOSAL AREA SIZING

From AS/NZ 1547:2012 APPENDIX L, L4 DESIGN AREA SIZING, L4.2 Sizing

$$L = Q / (DLR \times W)$$

Where:

L = length in m

Q = design daily flow in L/day

DLR = Design Loading Rate in mm/d

W = Width in m

$$L = 750 / (15 \times 4.0) \\ = 12.5m.$$

Use one 12.5m long by 4.0m wide Advanced Enviro-Septic bed.

See site plan and detail cross-section.

1kg gypsum per m² shall be applied to the base before laying the aggregate

SYSTEM SAND

All configurations of Advanced Enviro-Septic® require a minimum of 150mm of system sand surrounding the circumference of the pipe. This sand, typically gravelly coarse sand, must adhere to the following percentage and quality restrictions.

AS Sieve Size (mm)	Percent Passing %
9.50	100
4.75	95-100
2.36	80-100
1.18	50-85
0.600	25-60
0.300	5-30
0.150	0-10
0.075	0-2

If there is any doubt if the sand media will pass requirements please contact Earth Test for further advice.



SYSTEM INSTALLATION

Avoid compaction by keeping people and machinery off the finished trench or bed floor.
The system shall be installed by a licensed plumber in accordance with the manufacturer's recommendations and the relevant Australian Standards.

Operation and Maintenance

Homeowners should be fully informed of the proper operation and maintenance requirements of the on-site wastewater system.

Gavin Negri
Earth Test

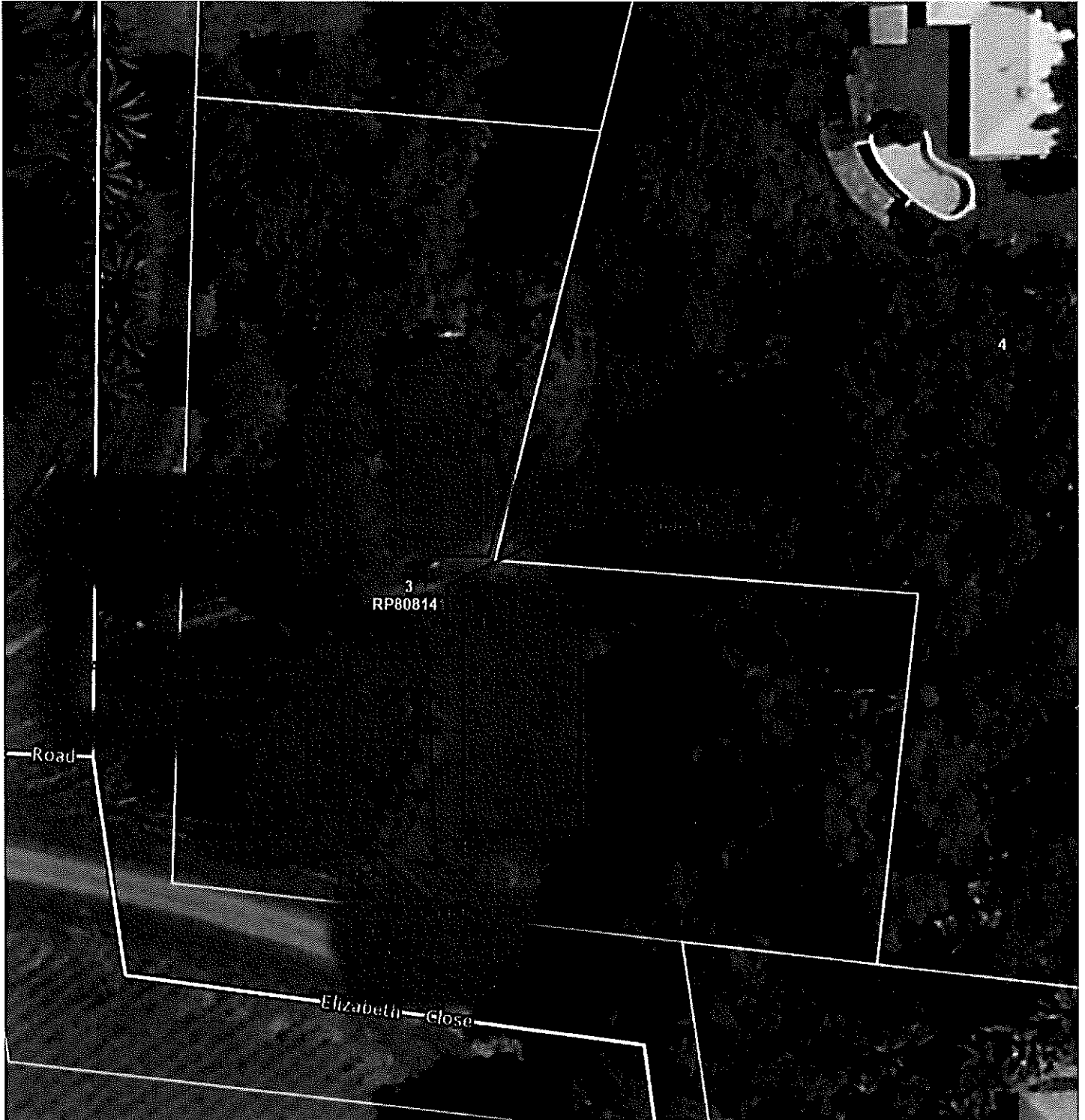


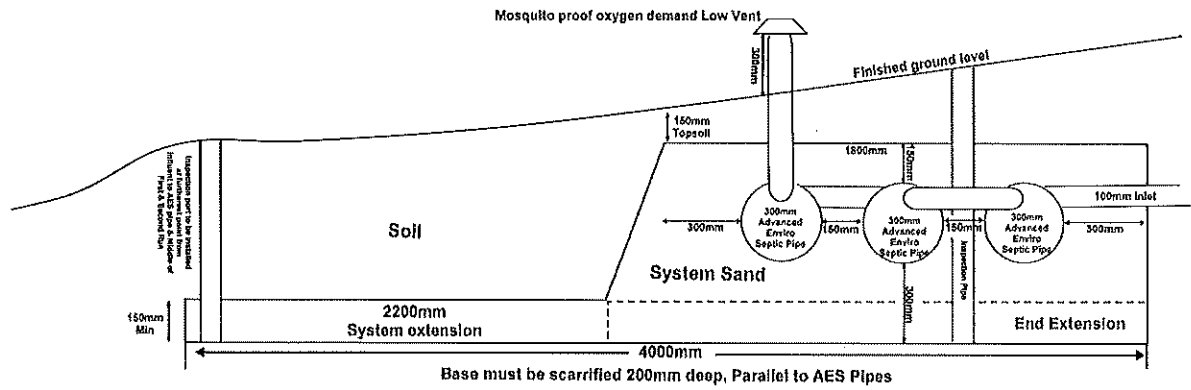
Consoil Solutions Pty. Ltd. T/A Earth Test QBCC #. 15092731

SITE PLAN

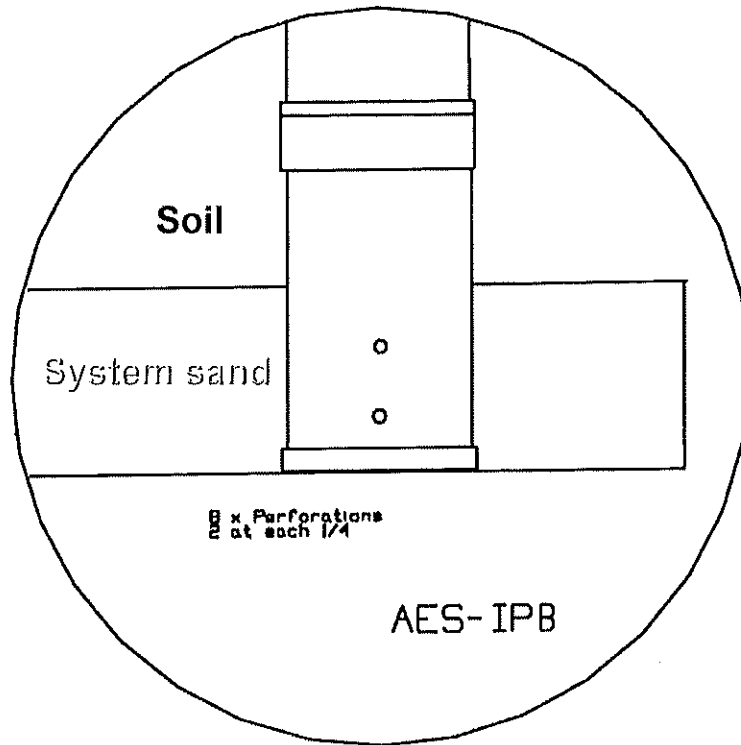
Lot 3 Bamboo Creek Road, Miallo.

NOT TO SCALE



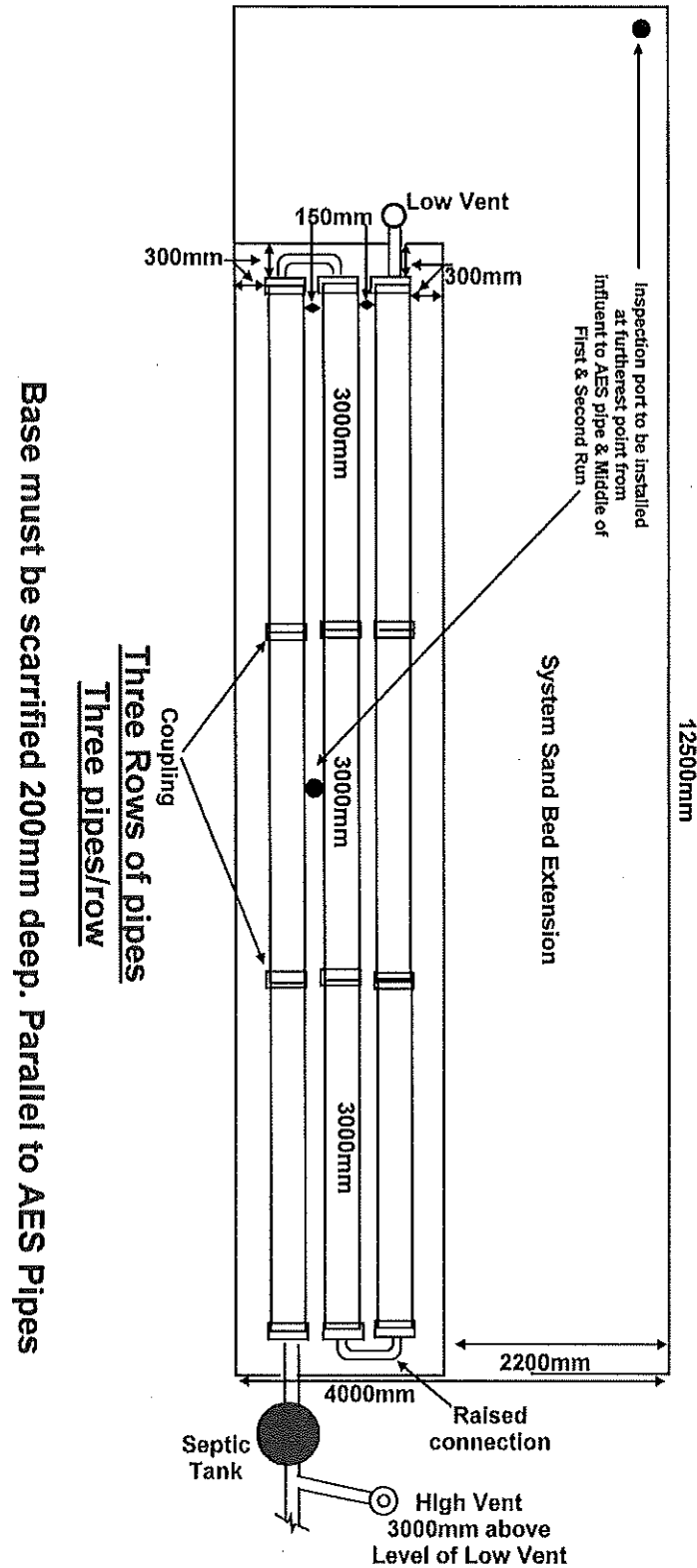


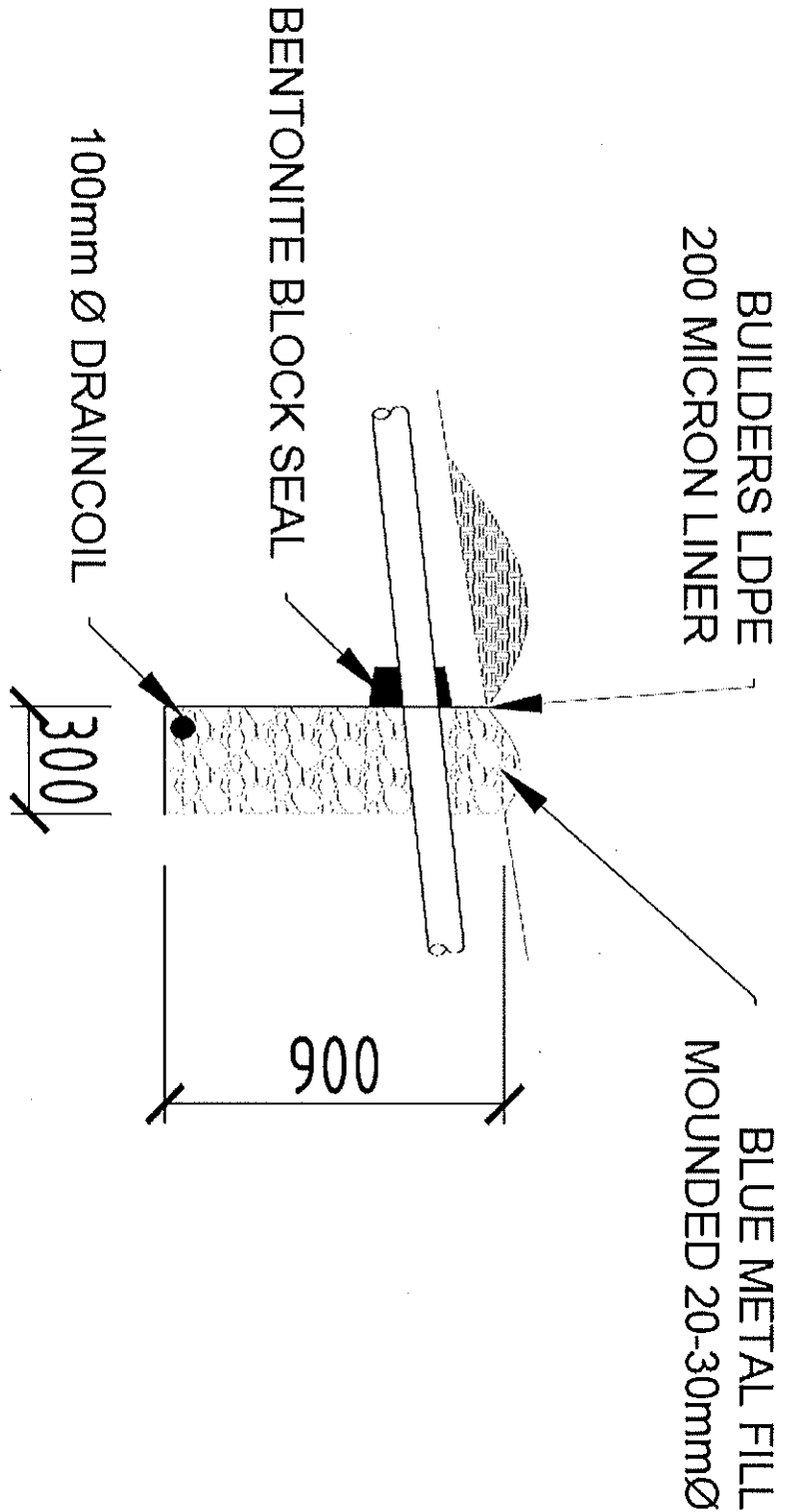
4000mm Wide Three Pipe Advanced Enviro-Septic Cross-Section



AES Inspection point detail

Overhead view of Land Application Area





1. 900mm Deep by 300mm wide surface and subsurface interception & diversion cutoff drain.
2. Drain base and downslope side lined with Minimum 200 Micron LDPE Heavy Duty. Backfill with 20-30mm Ø crushed blue metal or similar.
3. 100mm Ø draincoil placed in lower corner of drain to discharge drain water well clear of LAA.
4. Excavation spoil mounded on downslope side to act as bund and blue metal drainage aggregate mounded to prevent bridging by leaves etc.
5. Bentonite block to be placed in septic tank discharge pipe trench, replacing bedding sand/aggregate, downslope of cutoff drain to prevent water in cutoff drain running through pipe bedding into land application area