ABACUS DESIGN

ARCHITECTS PROJECT MANAGERS ENGINEERS

RESOURCE CONSENT APPLICATION

for

EFFLUENT DISPOSAL

at

CNR PAYNTERS & NEW RENWICK ROAD

for

VILLA MARIA ESTATE

JUNE 2006

PART 2: ASSESSMENT OF ENVIRONMENTAL EFFECTS

2.1 PROPOSAL

Outline:

Villa Maria Estates Limited intend to upgrade the effluent system which currently services Villa Maria winery and cellar door. The property is described as Lot 1 S.O1133. and is located on the corner of New Renwick Road and Paynters Road. The Site is zoned 'Rural Three' Zone in the Wairau/Awatere Resource Management Plan. The proposal involves on-site discharge of domestic wastewater. The volume of wastewater to be discharge exceeds the permitted volume of $2m^3$ per day. This is considered to be a Discretionary Activity requiring a Discharge Permit.

The Site:

The site is located on the corner of New Renwick Road and Paynters Road. Villa Maria's processing winery and Cellar Door are situated on the site. A watercourse intersects the south eastern corner of the site. The site is vegetated with grass, occasional trees and plantings. The front portion of the site is developed with vineyard. The proposed land application area is located along the western boundary of the site and will be set back a distance of five meters from the boundary.

Discharge Permit – Discharge of Domestic Wastewater

The existing system servicing the winery consists of an Oasis Clearwater Series 5000 treatment plant and trench disposal field, which has failed. Villa Maria intends to replace the disposal field with a new shallow bed disposal field. The disposal field shall be sized to allow for a 50% increase in loading so that the system will be appropriately sized for future extensions to the winery. Peak flows of 5000L per day were recorded during vintage, however the design of land application area must allow for 50% increase from future developments. The land application area shall be designed for a maximum daily load of 7200L per day which exceeds the permitted volume of 2 cubic meters. The proposal meets all other conditions for a Permitted Activity. The existing 5000L treatment plant shall be retained, however at the time of future developments the plant must be replaced or appropriately upgraded for a daily load of up to 7200L per day (or to the capacity required for the future development). The effluent disposal system has been designed to meet the requirements of NZS 1547, On Site Domestic Wastewater Management. The proposed design for the effluent disposal system is described in detail in the attached report. Given that the site is flat, the distance from any water bodies and distance from ground water, the risks of adversely affecting the environment are

Pere concern

Warsaw Plan
Rural 4.1
• bullet point 1
"Activities ..."

sufficiently low to allow the specified system to be employed. There is no risk of contamination of adjacent sites or waterways as a result of the proposed effluent disposal system.

2.2 GENERAL ASSESSMENT CRITERIA

The Wairau/Awatere Resource Management Plan, Volume II, Rules defines the proposed activity as a discretionary activity in that the volume of wastewater to be discharged exceeds the $2m^3$ permitted in the Plan. The Rules define the general assessment criteria required to be addressed and make reference to the Matters Subject to assessment, which are addressed as follows:

- Requirements of Sections 104,105 and the Fourth Schedule; matters effecting the councils' decision on the proposal are detailed in Section 2.1 above of this application with further references to objectives, policies and rules listed in 2.2.1 below. Items listed in the fourth schedule are also discussed in the listed sections.
  Effects of the proposal on the surrounding community are detailed above with mitigating measures similarly detailed.

- *The likely effect of the proposal on locality and wider community:* The proposal will not affect the amenity values of the Rural Zone. The discharge will not be visible to the local community. The proposal will not have any adverse effect on the local or wider community.

- The *likely effects of the proposal on areas of landscape importance:*
  The site is not situated in an area of landscape importance.

- *The likely effects of the proposal on significant nature conservation value, indigenous vegetation and habitats of indigenous fauna:*
  The site is does not feature any significant nature conservation values.

- *The likely effects of the proposal on the beds of and within, Rivers, lakes wetlands and drainage channels:*
  The site is not located near any of the above features. The watercourse running through the property is located a distance of 115m from the disposal field. The ground water table is situated in excess of 600mm below the proposed discharge level. The proposed discharge will have no adverse effect on groundwater or waterways.

- *In respect of Natural Hazards:*

  The disposal field is not located in a Natural Hazard Zone

2.3.2 MATTERS FOR CONSIDERATION IN THE EXERCISE OF COUNCILS DISCRETION

The proposal's effects on local community and amenity values have been detailed above. There are unlikely to be any detrimental effects as a result of the proposal.

2.3.3 LIKELY EFFECTS ON SURROUNDING COMMUNITY

As detailed above, we have attempted to mitigate any negative effect perceived through design, location and function of the proposal. There are unlikely to be any detrimental effects on the surrounding community as a result of the proposal.

APPENDIX

Site and Soil Evaluation Report

Site Plans

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Site and Soil Evaluation Report – Option 2

1.0 SITE INFOMATION

1.1 Location details:

Owner: Villa Maria

Location: Paynters Road & New Renwick Road

Address: Fairhall

1.2 Site Description:

The site is located on the corner of New Renwick Road and Paynters Road and is described as Lot 1 S.O1133. The site is developed with a processing winery and cellar door. A watercourse intersects the south eastern corner of the site. The front portion of the site is developed with vineyard. The remainder of the site is vegetated with grass, occasional trees and plantings. The proposed land application area is located along the western boundary of the site and will be set back a distance of five meters from the boundary.

1.3 Climate:

Annual rainfall (mm): Unknown

Annual Evaporation (mm): Unknown

1.4 Intended water supply:

water scheme

1.5 Existing on-site systems:

Consists of an Oasis Clearwater Series 5000 treatment plant and trench disposal field, which has failed.

1.6 Site Evaluator:

Name: Bronwen Frazer

Company/agency: Abacus Design

Address: PO Box 309
Blenheim

Phone: 5778857

Fax: 5779966

2.0 ON-SITE EVALUATION

2.1 Work Undertaken:

Details: Site visit & effluent design

Date: April 2006

Weather (on day and preceding week): fine on day of visit, heavy rain in week prior to visit

Photo Attached: NO

2.2 Topography:

Slope: generally flat

Drainage Patterns: few minor depressions. watercourse in south east corner of site

Ground Cover: grass

Boundaries: Noted

Waterways: none within 30 meters of proposed disposal field

Well/Bores: None within 30 meters of proposed effluent disposal field

Buildings: winery and cellar door

Other:

Site History (land Use): Agricultural

Site Plan Attached: YES

2.3 Site Exposure:

Site Aspect: good

Reference should have been made to sewerage waste waters disch. area nearby & whether a factor

2.4 Environmental concerns: (e.g. High water table, wetlands, water ways etc.):

N/A

2.5 Site Stability:

Is expert assessment necessary: No

2.6 Drainage Controls:

Depth to seasonal water table: in excess of 600mm from proposed disposal level.

Need for cut off drains/diversion banks: N/A

Need for surface water collector/cut off drains: N/A

2.7 Set back Distances:

Set back distance: 5m from boundaries, 2m between beds

Reserve area: Available

← Ditto above

3.0 SOIL INVESTIGATION

3.1 Soil profile determination Method: Test Pits and auger hole
A range of soil properties have been assessed in accordance with the procedures outlined in Appendix 4.1D of NZS1547:2000

3.2 Reporting

Test Site 1

Layer	Lower Depth	Moisture content	Colour (moist)	Field Texture	Coarse Fragments %	Structure	Other
1	300mm	moist	Dark Brown	Loam	<2	Moderate	Topsoil
2	700mm	Moist	Brown	Silty Clay Loam	<2	-	Silty Clay Loam, smooth & silky to manipulate, plastic, forms a ribbon approximately 40mm long,
3	1200mm	Moist	Light Brownish yellow	Light Clay/ Clay Loam	<2	-	Light Clay/Clay Loam, smooth & silky to manipulate, plastic, forms a ribbon up to 50mm long, some slight mottling with grey clays

Test site 2

Layer	Lower Depth	Moisture content	Colour (moist)	Field Texture	Coarse Fragments %	Structure	Other
1	200mm	moist	Dark Brown	Loam	<2	Moderate	Topsoil
2	650mm	Moist	Brown	Silty Clay Loam	<2	-	Silty Clay Loam, smooth & silky to manipulate, plastic, forms a ribbon approximately 40mm long,
3	1300mm	Moist	Light Brownish yellow	Light Clay	<2	-	Light clay, smooth & silky to manipulate, plastic, forms a ribbon up to 50mm long, some slight mottling with gray clays

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Test site 3

Layer	Lower Depth	Moisture content	Colour (moist)	Field Texture	Coarse Fragments %	Structure	Other
1	250mm	Moist	Dark Brown	Loam	<2	Moderate	Topsoil
2	650mm	Moist	Brown	Silty Clay Loam	<2	-	Silty Clay Loam, smooth & silky to manipulate, plastic, forms a ribbon approximately 40mm long,
3	-	Moist	Light Brownish yellow	Light Clay/Clay Loam	<2	-	Light Clay/Clay Loam, smooth & silky to manipulate, plastic, forms a ribbon up to 50mm long, some slight mottling with gray clays

3.3 Estimated Soil Category:

Soil Test	1	2	3	4	5
Soil Category	4-5	5	4-5		

The estimated soil category has been determined based on Table 4.1.1 NZS 1547:2000 The assignment of soil category 4-5 is based on the texture and structure of the soil as described in 3.2 above and observations made during the site visit.

3.4 Recommended DLR / DIR

DLR: 9mm/day
Reason: Values based on soil category

3.5 General Comments:

Existing disposal system has failed, existing 5000L treatment plant to be retained however a new land application area will be design to allow for 50% increase for future developments. At the time of future developments the existing treatment plant must be replaced or appropriately upgraded for a daily load of up to 7200L per day (or to the capacity required for the future development).

4.0 DESIGN

4.1 Soil Category found on site: 4-5

4.2 Number of staff: 40 people at 50L per person per day
Accommodation = five people at 180L per person per day

4.2.1 Average Daily Flow Rate (Q) (Litres): current peak flows of 5000L per day during vintage, however design of land application area must allow for 50% increase from future developments therefore land application area shall be designed for a maximum daily load of 7200L per day

4.4 Septic Tank / treatment plant Capacity (Litres):.
existing 5000L treatment plant to be retained. At the time of future developments the existing treatment plant must be replaced or appropriately upgraded for a daily load of up to 7200L per day (or to the capacity required for the future development).

4.5 Treatment Quality:

Equal to or better than: 20g/m3 BOD5: 30g/m3 Total Suspended Solids

4.6 Loading Rate (DLR): 9mm/day

4.7 Bed Spacing (m): 2.0m

Note: Beds shall be laid level

5.0 CALCULATIONS

$$A = \frac{7200L}{9\ mm/day}$$

Disposal Area = 800 square meters
Twelve 22m x 3m shallow ETS beds with two sequencing valves.

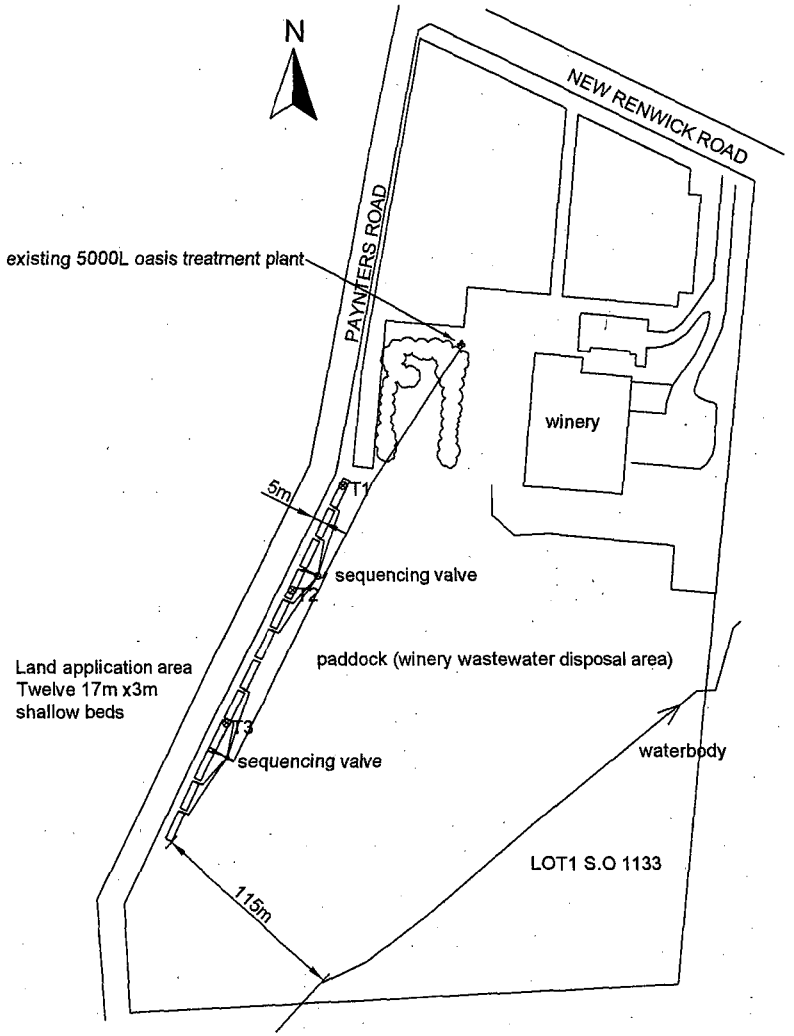
We recommend that a flow meter be installed and loading rates be recorded to allow for an accurate assessment of loading rates for future developments.

6.0 Assessment of other possible systems:

Irrigated disposal is also an option however due to the site requirements the disposal area would be large.

7.0 Best Practical Option

The best practical option for management of domestic wastewater is through the use of the proposed system (as detailed in section 4.0 above) It is my opinion that this system is the best practical method for preventing or minimizing any adverse effects on the environment.



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01 24/05/06 info AMENDMENT DATE DETAILS	AMENDMENT DATE DETAILS	CONSULTANTS ABACUS DESIGN abacusdesign@xtra.co.nz - TEL 03 577 8857 - FAX 03 577 9966 - PO BOX 309 - 141 HIGH STREET - BLENHEIM - NEW ZEALAND	CLIENT VILLA MARIA NEW RENWICK ROAD	PROJECT EFFLUENT DISPOSAL Option 2 DRAWING LOCATION PLAN	DATE 24/05/06 AMENDMENT 01 DWG NO. SJ818-Fig1 SCALE 1:3000 CAD FILE REF: SJ818-F1	A3

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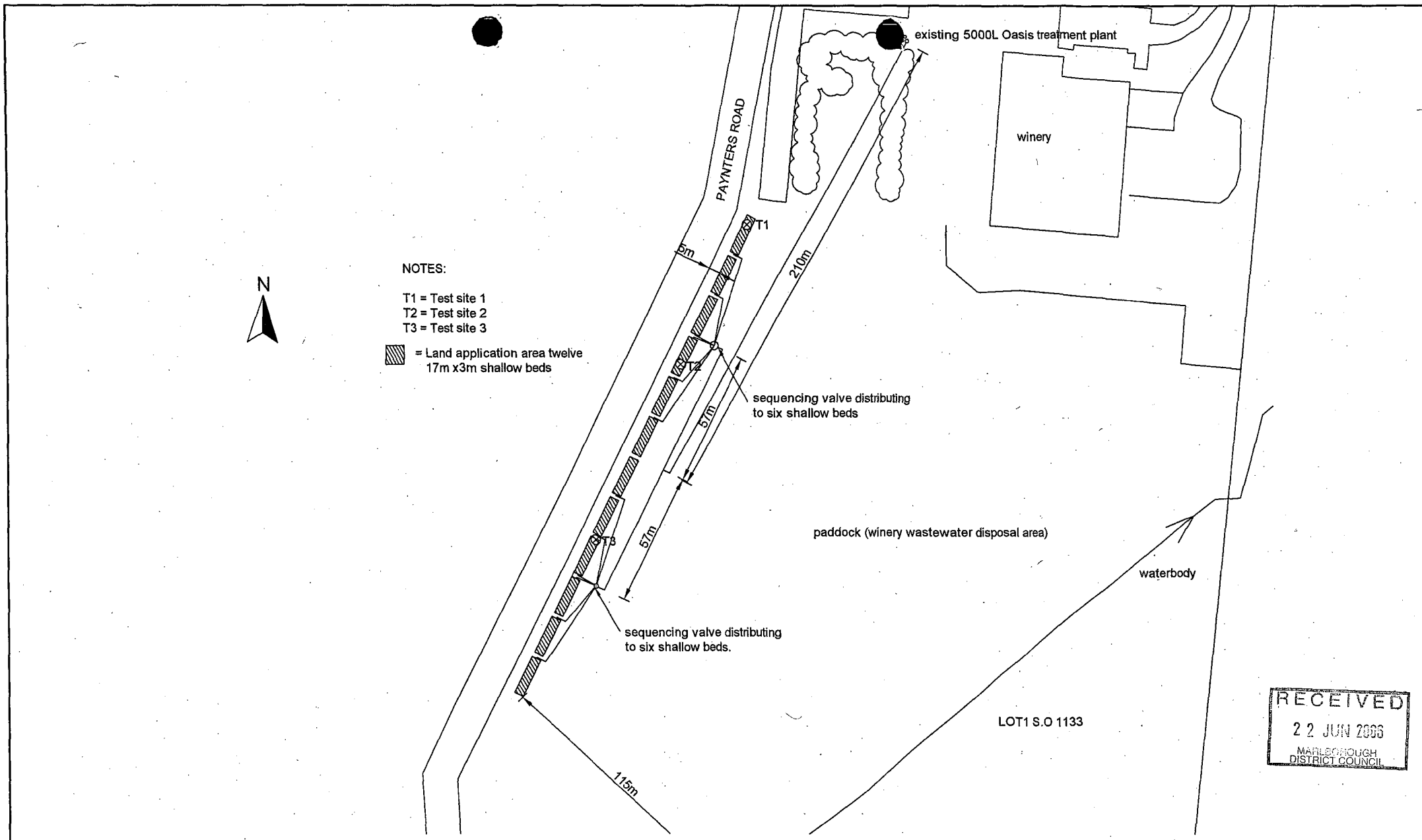

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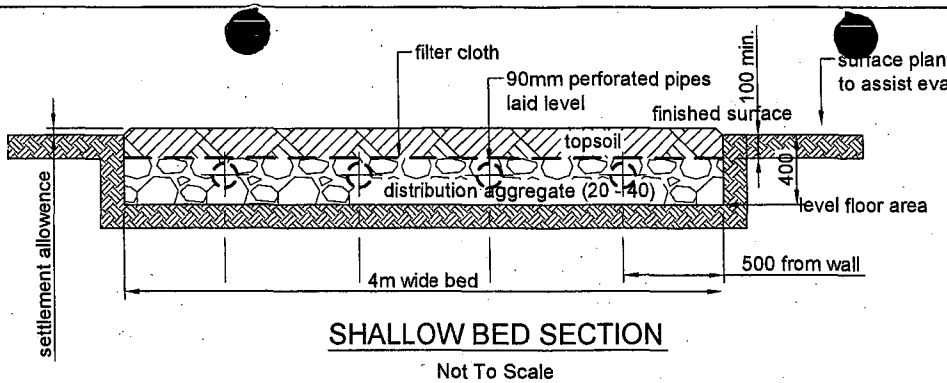
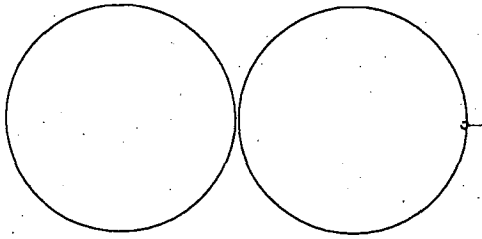


SHALLOW BED SECTION

Not To Scale

(level site - slope less than 5 %)



Existing Oasis Clearwater Series 5000 Treatment Plan

40mm pumping main

Note: Pipe lengths to each sequencing valve to balence to ensure even head to each sequencing valve.

sequencing valve distributing to six shallow beds (see bed detail below and layout on site plan)

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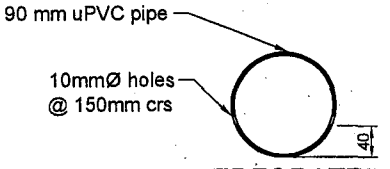
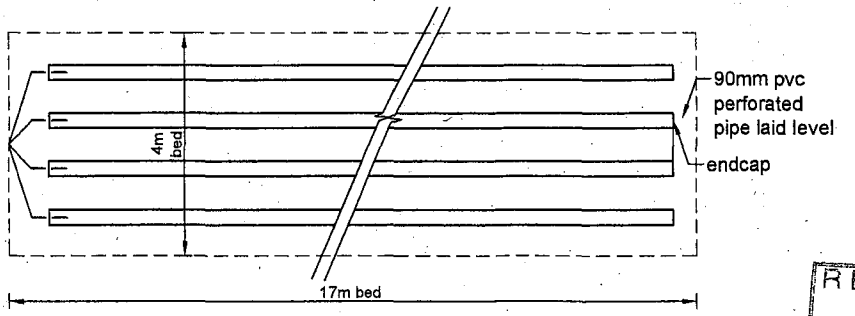


PERFORATED PIPE DETAIL

Not To Scale



SHALLOW BED LAYOUT

Schematic - Not To Scale

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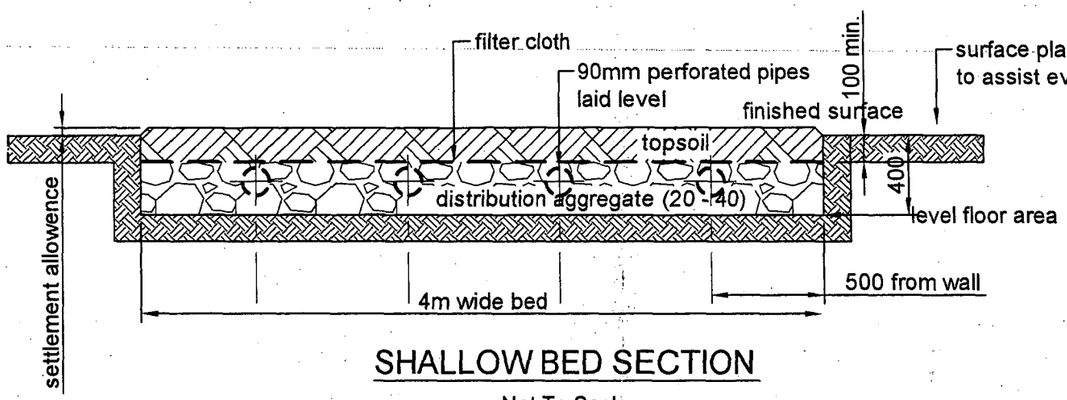
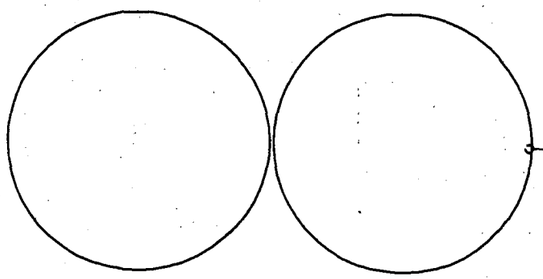


SHALLOW BED SECTION

Not To Scale

(level site - slope less than 5 %)



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40mm pumping main

Note: Pipe lengths to each sequencing valve to balence to ensure even head to each sequencing valve.

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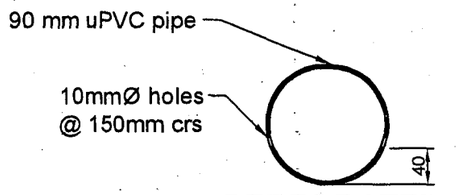

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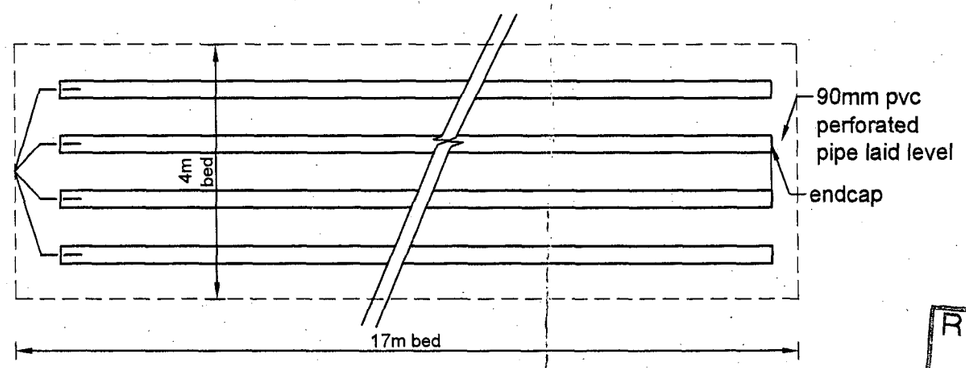

SHALLOW BED LAYOUT

Schematic - Not To Scale

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NOTES:

T1 = Test site 1
T2 = Test site 2
T3 = Test site 3

= Land application area twelve 17m x3m shallow beds

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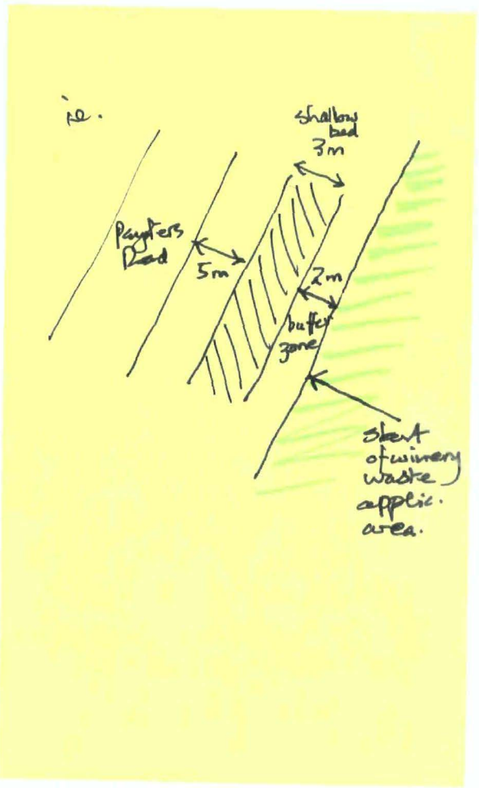

existing 5000L Oasis treatment plant

PAYNTERS ROAD

winery

T1

5m

210m

T2

sequencing valve distributing to six shallow beds

57m

T3

paddock (winery wastewater disposal area)

waterbody

sequencing valve distributing to six shallow beds.

LOT1 S.O 1133

115m

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					CAD FILE REF: SJ818-F2	

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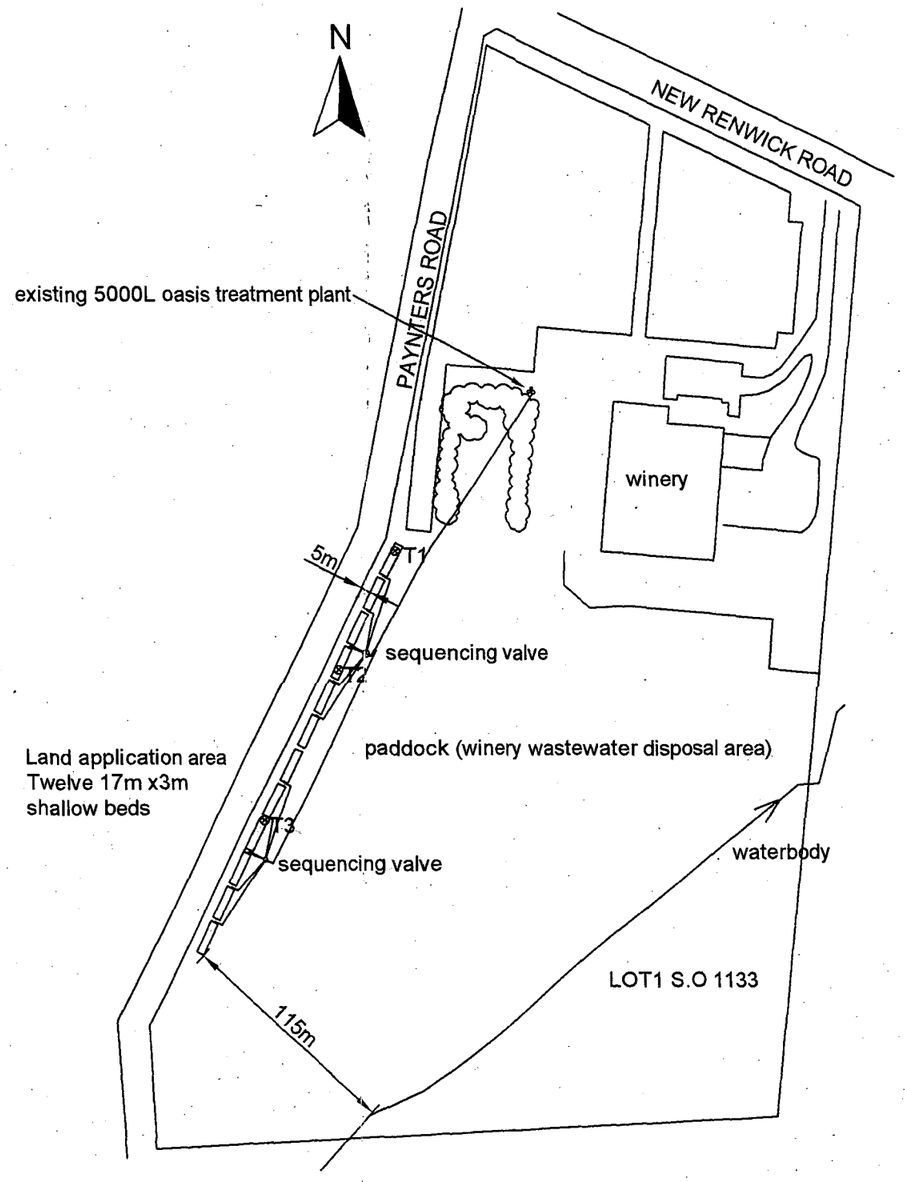

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