



## **SORELL COUNCIL**

# **NOTICE OF PROPOSED DEVELOPMENT**

Notice is hereby given that an application has been made for planning approval for the following development:

**SITE: 16 Schofield Drive, Sorell**

**PROPOSED DEVELOPMENT:**

### **RESOURCE PROCESSING (MICRO DISTILLERY)**

The relevant plans and documents can be inspected at the Council Offices at 47 Cole Street, Sorell during normal office hours, or the plans may be viewed on Council's website at [www.sorell.tas.gov.au](http://www.sorell.tas.gov.au) until **4:45pm Tuesday 9<sup>th</sup> March 2021**. Any person may make representation in relation to the proposal/s by letter or electronic mail ([sorell.council@sorell.tas.gov.au](mailto:sorell.council@sorell.tas.gov.au)) addressed to the General Manager. Representations must be received no later than **4:45pm Tuesday 9<sup>th</sup> March 2021**.

**APPLICANT: S M Irwin**

**DATE: 18 February 2021**

**APPLICATION NO: DA 2020 / 438 - 1**





16 Schofield Drive, Sorell -The relevant plans and documents can be inspected at the Council Offices at 47 Cole Street, Sorell during normal office hours, or the plans may be viewed on Council's website at [www.sorell.tas.gov.au](http://www.sorell.tas.gov.au) until 4:45pm Tuesday 9th March 2021

Disclaimer: This map is a representation of the information currently held by Sorell Council. While every effort has been made to ensure the accuracy of the product, Council accepts no responsibility for any errors or omissions. Any feedback on omissions or errors would be appreciated.

23-Feb-2021

100 m



# **Site & soil evaluation and design report.**

**Onsite wastewater management  
system for proposed distillery  
operation at 16 Schofield Drive, Sorell  
TAS 7172**

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## BACKGROUND

This report and design information has been provided in order to assist the client in considering wastewater management options to manage effluent generated by a small-scale distillery operation. The information provided in this Report provides Design Information, Plans and Specifications suitable for inclusion in supporting documentation to enable the client to apply for a Plumbing Permit for an on-site wastewater management system.

## SITE INFORMATION

**Location:** 16 Schofield Drive, Sorell TAS 7172.

**PID:** 7849111

**CT:** 14/02/2021

**Developer:** Steven Irwin

**Project Summary:** Design of on-site wastewater management system to manage wastewater generated by a small-scale distillery operation.

The new on-site wastewater management system for distillery waste will comprise an 800L Netco pumpwell, with pressurised dosing to a surface sprinkler system.

The operation will produce a very low volume of wastewater which carries a low bacterial loading (brewing requires pre-disinfection of the water used in fermentation and largely aseptic conditions; distillation itself results in a heat treated, sterile residue); public health risk arising from irrigation of the wastewater is minimal. Primary treatment is limited to the provision of coarse screening prior to discharge to the pumpwell in a detritus pit with aluminium or stainless-steel removable strainer basket, to remove malt husks etc.

The irrigation system is to be managed to avoid application during significant rainfall events.

**Site Plan:** Approximate site area – 1.9Ha.

### Soil Category:

(as per in AS/NZS 1547-2012)

Modified Emerson Test Required? **Y**

A Horizon 1,...2,...3,...**4**,...5,...6

B Horizon 1,...2,...3,...4,...5,...**6**

### Soil Profile:

A Christie Post Driver Soil Sampling Kit, comprising CHPD78 Christie Post Driver with Soil Sampling Tube (50mm OD x 1.6m) and a Seca Mighty Probe (1200mm) were used to obtain undisturbed soil cores or soil depth information at 3 different locations across the proposed land application area; this being considered sufficient

to provide a representative picture of soil conditions; similar soil profiles are seen throughout the land application area.

The soil profile on this site is duplex and comprises a silty clay loam A Horizon with a medium/heavy clay B Horizon overlying a sandy clay loam C-horizon.

1. A Horizon: 0-300mm; silty clay loam, with fine roots, blackish red 5R 2/2, dry, moderately structured, slightly plastic, 40mm ribbon; Category 4.
2. B Horizon: 300-1000mm; medium stony clay, dark brown 10YR 3/3, moist, poorly structured; Category 6
3. CR Horizon 1000mm+ gravelly clay; Category 6

(From observation of test pitting and exposures on-site)

Soil dispersion was not assessed, however the site is affected by a Potential Dispersive Soils overlay under the overlay under the Sorell Interim Planning Scheme 2015; pre-treatment of the irrigation area with gypsum and application by irrigation at low DIR will minimise risk of dispersion.

#### **Measured or Estimated Soil Permeability**

Estimated from textural classification.

A Horizon 0.5m – 1.5m/day

B Horizon <0.06m/day

#### **Effluent Application Rates**

*(This is a recommendation to the designer advising how many litres of effluent should be applied to the soil for every square metre of absorption trench or other land application system.)*

##### **A-Horizon**

Mound type system only: 16mm/day.

##### **B-Horizon**

Irrigation treated effluent – 2mm/day

In-ground absorption beds or trenches – not recommended.

#### **Topography**

Slopes: 9° to the west.

Drainage lines / water courses: Unnamed creek discharging to Iron Creek Bay is approximately 50m to the W of the proposed land application area. This creek only runs during periods of heavy rain or protracted wet weather.

Vegetation: The site has been substantially cleared and now comprises mainly pasture grasses in the immediate vicinity and downslope of the proposed land application area.

**Site History (land use)**

Subdivided and developed for medium density residential use; there are no previous known land uses or other activities which would compromise the suitability of the site for use for onsite wastewater management.

**Site Exposure and Climate.**

Aspect: The site lies near coast, with westerly aspect.

Pre-dominant wind direction: North-westerly to south-westerly, site is also exposed to summer sea breezes.

Climate: Annual rainfall averages 499mm/year (Hobart Airport), with maximum daily average temperature of 22°C and minimum of 12°C, giving an annual evapotranspiration (ET) of approximately 700mm. Annual average ET on this site is predicted to exceed average annual rainfall by 200mm. Dry conditions predominate during the summer months, when conditions are strongly evaporative.

**Environmental Issues** - Location of sensitive vegetation, high water table, swamps, waterways etc.

The nearby unnamed creek is the nearest watercourse; it is considered that the land application area separation of approximately 75m, combined with very low average DIR provides adequate protection.

**Site Stability**

The proposed land application area is not affected by a Landslide Hazard overlay under the Sorell Interim Planning Scheme 2015.

**Drainage/Groundwater**

Site sloping and is well drained. It is important that upslope drainage be installed to intercept runoff from incident rainfall which could interfere with successful operation of the irrigation system; irrigation events should also be managed to avoid periods of heavy rainfall.

There are no known water bores within 500m of the site.

**Land Application Area**

Land application area to be sited on the lower terrace, 20m-40m downslope of the outbuilding which will house the distillery operation.

**Water Supply**

Rainwater tank supply

**Existing onsite wastewater management system.**

This comprises a septic tank with in-ground absorption beds located approximately 25m north and upslope of the proposed distillery land application area; the household on-site wastewater management system is not affected by installation and operation of proposed new distillery land application area.

**Predicted wastewater loadings and characteristics.**

The distillery operation is predicted (by the proponent) to produce approximately 300L of wastewater per batch of final distilled product; it is proposed to produce one batch each month, with no future plans for expansion of the operation at this site.

The wastewater contains three major components:

- Fermented malt solution (wash) from rinsing of the fermenter, comprising remnant yeast cells, and ethanol at 4-5% (basically an unclarified, primary fermented unhopped beer), plus larger solids such as husks derived from malt grains
- Remaining wash post-distillation, a constant boiling mixture with approximately 1% remnant ethanol, incapable of further distillation. The remnant wash has a relatively low pH and will require pH buffering/neutralisation with Sodium bicarbonate (ie. Bicarbonate of Soda), or similar to raise the pH to 7.5-8.2, prior to discharge.
- Wash down wastewater from floors, sink etc.

Whilst the wastewater may have a significant level of BOD and Suspended Solids, experience shows that provided it is applied sparingly as an irrigant with reasonable application intervals, it is readily assimilated into the soil profile, with low risk of environmental or public health impact.

The production process relies on aseptic conditions for fermentation, during which CO<sub>2</sub>, low pH environment and alcohol generated by yeast metabolism inhibits the growth of pathogenic organisms; the distillation process is also hostile to any bacterial survival or multiplication. The effluent produced is considered to be inherently safe from a public health perspective, but it may result in adverse environmental impacts if discharged to water courses or if held sufficiently long for bacterial decomposition of remnant organic matter and alcohol to occur, typically resulting in the formation of various organic acids (ethanoic acid) and generation of sour odours.

Minimising storage times in the pumpwell will reduce the opportunity for bacterial multiplication and formation of nuisance odours.

**Land application area sizing**

It is proposed to apply effluent at an instantaneous DIR of 3mm, however given that this will be a monthly occurrence, this equates to an average daily DIR of only 0.1mm/day.

$$\text{Land application area} = \frac{\text{effluent volume}}{\text{DIR}}$$

$$= \frac{350\text{L/event}}{3\text{mm/event}}$$

$$= 116\text{m}^2$$

### On-site wastewater management system

On-site wastewater management system will comprise the following:

- Floor and sink etc wastes discharging to a straining pit with removable strainer basket
- Floor and sink wastes to discharge to an 800L capacity Netco pumpwell, fitted with a 750W Zenox ZHS075 pump, with high-level warning float switch hard-wired to a warning panel located in a prominent location within the distillery shed.
- Discharge from pumpwell directed via a buried 25mm diam purple LDPE pipe to a 0.5m high galvanised steel riser, fitted with a single Senninger mini-wobbler with 6m minimum throw radius (#10 /3.97mm turquoise nozzle), irrigating 684L/hr @ 15m head.
- Excavated cut-off drain, 300mm deep x 600mm wide, with excavation spoil mounded on downslope side, 5m+ horizontally above wetted area of sprinkler.

### Hydraulic design

Length irrigation pipe (m)	wobbler spacing	wobbler flow rate (l/hr)	Number of wobblers	Total wobbler flow rate L/hr	Total wobbler flow rate (L/min)	Head loss (m)
31	31	684	1	684	11.4	
Length supply pipe	Material supply pipe	ID pipe	Friction loss (m) at flow rate L/min			
30	LDPE	25	0.9			0.9
Friction loss from other pipe fittings						
25%			0.23			0.23
Type of filter	Make	Model	Friction loss (m) at flow rate L/min			
disc	Netafim	1" (25mm)				0
Type of indexing valve	Model		Friction loss (m) at flow rate L/min			
K Rain	RCW4402					0



					<b>Total Friction head (m)</b>	<b>1.13</b>
Differential elevation in (m)	(pump to irrigation area)					
<b>2</b>					<b>Elevation head (m)</b>	<b>2</b>
Operating head of wobbler (m)					<b>Operating head (m)</b>	
15					15	<b>15</b>
<b>Total Dynamic Head (TDH) in m</b>						<b>18.13</b>
<b>Required pump capacity (minimum)</b>				<b>@ 11.4 L/min 18.13 TDH</b>		

#### Pump selection

Pump	Minimum required operating head at 11.4L/min	Operating head at 11.4L/min (from published pump curve data)	Pump suitable for flow/head requirement?
Zenox ZHS040	18.13m	24m	Yes

#### Code E23/Guideline compliance

This proposal is exempt from E23 Onsite Wastewater Management Code by virtue of Clause E23.2.1(b). ie "...other than wastewater from industrial or manufacturing processes..." and E23.4.1, ie ... sites greater than 5000m<sup>2</sup>..."

The proposal is therefore assessed against the Directors Guidelines for on-site wastewater management systems 2017.

<b>Compliance Table Directors Guidelines for OSWM</b>		
Acceptable Solutions	Performance Criteria	Compliance achieved by
<b>5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.</b>		
A1 A new dwelling must be provided with a land application area that complies with Table 3.	P1 A new dwelling must be provided with a land application area that meets all of the following:  a) The land application area is sized in accordance with the requirements of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed	n/a

	that demonstrates that the risk is acceptable.	
<b>5.2 To ensure sustainable onsite wastewater management for commercial and non-residential buildings (Class 3-9).</b>		
<p>A1 An onsite wastewater management system including the land application area for non-residential buildings must satisfy all of the following:</p> <p>(a) be sized based on the hydraulic and organic loadings contained in Table 4 and design loading or irrigation rates contained in AS/NZS 1547;</p> <p>(b) be located in accordance with clause 7.1</p>	<p>P1 An onsite wastewater management system including the land application area for non-residential building must satisfy all of the following:</p> <p>a) A site and soil evaluation and design report prepared by a suitably person determined by the Director demonstrating that the land application area is of sufficient size to treat and manage the wastewater generated from the proposed building within the property boundaries.</p> <p>b) The SSE report and system design demonstrates the design is consistent with AS/NZS 1547 and uses appropriate hydraulic and organic loading rates for the proposed activity.</p> <p>c) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p> <p>d) The land application area is to be located in accordance with the acceptable solution or performance criteria specified in clause 7.1.</p>	<p>A1</p> <p>(a) Table 4 does not consider distillery wastewater flows.</p> <p>(b) DIR meets AS/NZS1547 criteria.</p>
<b>6 Area required for on-site wastewater management – building extensions, alterations or outbuildings (Building Class 1-10)</b>		
<p>A2 An outbuilding, addition or alteration to an existing building, or change of use of that building, must not encroach onto or be within 2m (if upslope) or 6m (if downslope) of an existing land application area (including land reserved for a future land application area) or a wastewater treatment unit and comply with at least one of the following:</p> <p>a) not increase the number of bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite; and</p> <p>b) not increase the number of</p>	<p>P2 An outbuilding addition or alteration to an existing building or change of use of that building, must be provided with a land application area (including land reserved for a future land application area) that meets all of the following:</p> <p>a) The land application area is of sufficient size to comply with the either Appendix L, M or N and setback distances are consistent with Appendix R of AS/NZS 1547; and</p> <p>b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p>	<p>P2(a) Land application area meets Appendix M.</p> <p>P2(b) Risk assessment demonstrates that risk is acceptable.</p>

bedrooms (or rooms reasonably capable of being used as a bedroom) or otherwise increase the potential volume of wastewater generated onsite to greater than that allowed for in the design of the existing OWMS.		
<b>7. Standards for Wastewater Land Application Areas</b>		
<p>A1 Horizontal separation distance from a building to a land application area must comply with one of the following:</p> <ul style="list-style-type: none"> <li>a) be no less than 6m;</li> <li>b) be no less than: <ul style="list-style-type: none"> <li>(i) 3m from an upslope boundary or level building;</li> <li>(ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building;</li> <li>(iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.</li> </ul> </li> </ul>	<p>P1 The land application area is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.</p>	<p>A1 Land application area is 20m downslope from nearest building.</p>
<p>A2 Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b)</p> <ul style="list-style-type: none"> <li>(a) be no less than 100m; or</li> <li>(b) be no less than the following: <ul style="list-style-type: none"> <li>(i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or</li> <li>(ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.</li> </ul> </li> </ul>	<p>P2 Horizontal separation distance from downslope surface water to a land application area must comply with all of the following:</p> <ul style="list-style-type: none"> <li>a) Setbacks must be consistent with AS/NZS 1547 Appendix R;</li> <li>b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</li> </ul>	<p>P2(a) 75m to downslope surface water.</p> <p>Setbacks consistent with Appendix R.</p> <p>P2(b) Risk assessment demonstrates that risk is acceptable.</p>
<p>A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following:</p> <ul style="list-style-type: none"> <li>(a) be no less than 40m from a property boundary; or</li> <li>(b) be no less than: <ul style="list-style-type: none"> <li>(i) 1.5m from an upslope or level property boundary; and</li> <li>(ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or</li> <li>(iii) If secondary treated effluent</li> </ul> </li> </ul>	<p>P3 Horizontal separation distance from a property boundary to a land application area must comply with all of the following:</p> <ul style="list-style-type: none"> <li>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</li> <li>(b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</li> </ul>	<p>A3(a) Land application area is 90m+ from nearest downslope boundary.</p> <p>A3(b) Land application area is 30m+ from nearest cross-slope boundary.</p>

and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.		
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following:  (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable.	A4 No known water bores within 500m of land application area.
A5 Vertical separation distance between groundwater and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	A5 No evidence of groundwater to refusal at 1000mm.
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent	P6 Vertical separation must be consistent with AS/NZS1547 Appendix R.	A6 As average DIR is consistent with Cat 6 soil profile, limiting layer is not considered to be present.
A7 Nil	P7 A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties  Note: Part 6 of the Building Act 2016 specifies	P7 No wastewater treatment is proposed.

### **Consistency with Appendix R, AS/NZS1547.2012 – recommended setback distances for land application systems.**

Appendix R of AS/NZS1547.2012 (“the Standard”), provides, via Table R1, a range of acceptable setback distances from potentially sensitive site features, including surface water, property boundaries and impermeable soil or rock formations.



The applicable ranges of setback distances are varied according to site constraint factors in Table R2 and referenced in R1, as relevant against each site feature.

Table R2 provides a constraint scale (from lower to higher), for each constraint item.

The constraint factors etc relevant to this proposal, together with commentary are provided below:

- **Surface water:** Table R1 setback range from surface water is 15-100m with site constraint factors A, B, D, E, F, G & J identified.

- **A – microbial effluent quality;** range (low to high constraint) 10cfu - 10<sup>6</sup> cfu/100mL.

*Effluent is effectively disinfected as a result of the fermentation and distillation processes. It contains no wastewater of household origin..*

*Microbiological effluent quality is therefore considered to fall into the low constraint range.*

- **B – Surface water;** range (low to high constraint):

Category 1-3 soils ---> Category 4-6 soils

*Soil is Category 6 – higher constraint*

No surface water downgradient within 100m ---> water less than 50m down gradient

*Receiving water is 75m downslope – lower constraint.*

Low rainfall area ---> high rainfall area

*Code E23 defines high rainfall as exceeding 1200mm/annum; mean annual rainfall (Hobart Airport) is approximately 500mm/annum. Low constraint.*

High resource/environmental resource value water is considered to be a higher constraint.

*The water is considered to be of low resource/environmental value. Low constraint*

The watercourse flows intermittently – low constraint

- **D – Slope:**

0-10% subsurface application ----> >30% subsurface application

*Slope to creekline averages 16% - moderate constraint.*

○ **E – Position in landscape:**

Downgradient of surface water ---> Upgradient of surface water

*Land application area is upgradient of surface water – higher constraint.*

○ **F – Drainage:**

Category 1 & 2 soils ---> Category 6 soils

Gently sloping area --->

---> sites with visible seepage

---> moisture tolerant vegetation

---> low lying area

*Category 6 soil – high constraint*

*Land application area slopes at 9° - moderate constraint*

*No visible seepage – lower constraint*

*No moisture tolerant vegetation – lower constraint*

*Elevated area – low constraint*

○ **G – Flood potential**

Above 1 in 20 year contour ---> Below 1 in 20 year contour

*Site is above 1 in 20 year flood contour – low constraint*

○ **J – Application method**

Drip or subsurface ---> surface application

*Effluent to be applied by surface irrigation – high constraint.*

As low/moderate constraints significantly outweigh high level constraints, this proposal is considered to be consistent with Appendix R of the Standard.

The risk assessment process below as per Clause 5.5.3.2 of AS/NZS1547.2012 is limited to consideration of Guidelines clause 5.1 P1.

## RISK ASSESSMENT

Each identified environmental aspect is subject to a qualitative risk analysis based on likelihood and consequences of environmental impact. The risk analysis matrix is as follows:

LIKELIHOOD	CONSEQUENCES				
	Catastrophic 1	Major 2	Moderate 3	Minor 4	Insignificant 5
A (almost certain)	Extreme	Extreme	Extreme	High	Medium
B (likely)	Extreme	Extreme	High	Medium	Medium
C (possible)	Extreme	High	Medium	Medium	Low
D (unlikely)	Extreme	Medium	Medium	Low	Low
E (rare)	High	Medium	Low	Low	Low

### Criteria for the five categories of likelihood:

**Almost certain:** An environmental health impact is expected to occur in most circumstances.

**Likely:** An environmental health impact will probably occur in most circumstances

**Possible:** An environmental health impact could occur.

**Unlikely:** An environmental health impact could occur but is not expected.

**Rare:** An environmental health impact would occur only in exceptional circumstances.

### Criteria for determining consequence to environmental health from an on-site wastewater management issue:

**Catastrophic:** Widespread, irreparable environmental damage; loss of human life or long term human health effects; serious litigation; over \$1 million to manage consequences.

**Major:** Widespread, medium to long term impact; moderate human health impacts requiring medical treatment; major breach of legal requirements (prosecution); \$50,000 to \$1 million to manage consequences.

**Moderate:** Localised medium to long term impact; minor and reversible human health impacts treatable with first aid; moderate breach of legal requirements with fine (EIN/prosecution); \$5,000 to \$50,000 to manage consequences.

**Minor:** Localised short to medium term impact; no injury to people; minor breach of legal requirements ( eg legal notice, EIN); \$1000 to \$5,000 to manage consequences.

**Insignificant:** Limited impact to a local area but no long-term effects; concern or complaints from neighbours; no injury to people; minor technical nonconformity but no legal nonconformity; less than \$1000 cost to manage consequences.

Conducting a risk analysis results in the allocating of a risk level of *extreme*, *high*, *moderate* or *low* for each environmental aspect. Environmental health aspects with an *extreme* or *high* risk are considered to be *significant*, that is, they have or can have a significant environmental impact.

Issue	Potential impacts	Comment	Likelihood	Consequence	Risk rating (RR)	Risk reduction measure (RRM) / factors	RR after RRM
Proximity to creekline	Contamination of surface water		C	3	M	Low average DIR  Does not contain household wastewater  Low rainfall area  Intermittent flow in watercourse – wet weather flow only.  Low-moderate env value of receiving water	L

**Date of Site Visit:** 12/12/2020.

**Weather Conditions:**

Warm and sunny with approximately 28mm of rain falling at Hobart Airport since 01/11/2020..

**Further Information.**

For further detailed assessment and design information, together with operation and maintenance advice, please refer to the Appendices.

**Statement.**

I certify that this Site and Soil Evaluation and Design for an on-site wastewater management system for the proposed change of use at 16 Schofield Drive, Schofield has been undertaken in accordance with the relevant provisions of AS/NZS 1547:2012. Onsite Domestic Wastewater Management.

The design of this on-site wastewater system is suitable for the activity referred to in this report.

This report is copyrighted to me as the author. I authorise Steven Irwin, Sorell Council and their respective agents and/or employees to make copies or extracts of this report for the purposes of Planning and/or Building Applications etc for the above-mentioned project on this site by or on behalf of Steven Irwin. It is not to be published or reproduced for the benefit of third parties without my explicit permission as author.

**Please Note:**

**It is generally understood that the successful operation of an on-site wastewater disposal system is dependent upon a number of complex, interacting factors and that the operating life of in-ground absorption systems**



**in particular may be limited. This system may require future maintenance or modification to ensure its continued satisfactory operation. The client is advised that such works are the responsibility of the property owner.**

## CONDITIONS OF INVESTIGATION

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The results & interpretation of conditions presented in this report are current at the time of the investigation only. The investigation has been conducted in accordance with the specific client's requirements &/or with their servants or agent's instructions.

This report contains observations & interpretations based often on limited subsurface evaluation. Where interpretative information or evaluation has been reported, this information has been identified accordingly & is presented based on professional judgement. OAT does not accept responsibility for variations between interpreted conditions & those that may be subsequently revealed by whatever means.

Due to the possibility of variation in subsurface conditions & materials, the characteristics of materials can vary between sample & observation sites. OAT takes no responsibility for changed or unexpected variations in ground conditions that may affect any aspect of the project. The classifications in this report are based on samples taken from specific sites. The information is not transferable to different sites, no matter how close (ie if the development site is moved from the original assessment site an additional assessment will be required).

It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment & advice may be provided.

Investigations are conducted to standards outlined in relevant Australian Standards, codes and guidelines, including:

- AS1547-2012: Onsite Domestic Wastewater Management
- AS3959.2009: Construction of Buildings in Bushfire Prone Areas
- Director's Guidelines for on-site wastewater management systems. (CBOS)
- Director's Determination – Requirements for Building in Bushfire-Prone Areas. (CBOS)

All new developments should subject to strict site maintenance. Attention is drawn to the relevant appendices of this report.

Any assessment that has included an onsite wastewater system design will require a further site visit once the system has been installed if certification of an installation/works is required (to verify that the system has been installed as per OAT's design). An additional fee may apply for the site visit & issuing the certificate.

OAT is not responsible for the correct installation of wastewater systems. Any wastewater installation is the sole responsibility of the owner/agent and certified plumber. Any variation to the wastewater design must be approved by OAT, and an amended Special Plumbing Permit obtained, if required from the relevant council. The registered plumber must obtain a copy and carefully follow the details

in the council issued Plumbing Permit. Certification of completion of works will be based on surface visual inspection only, to verify the location of the system. All underground plumbing works are the responsibility of the certified plumber.

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#### SITE ASSESSOR AND SYSTEM DESIGNER

NAME: Richard Mason, Environmental Health Professional & Building Services Hydraulic Designer CC6157T.

NAME OF ORGANISATION: Onsite Assessments Tas

ADDRESS: 20 Adelong Street, Kingston, Tasmania, 7050

CONTACT DETAILS: 0418 589 309; [richardmason@iprimus.com.au](mailto:richardmason@iprimus.com.au)

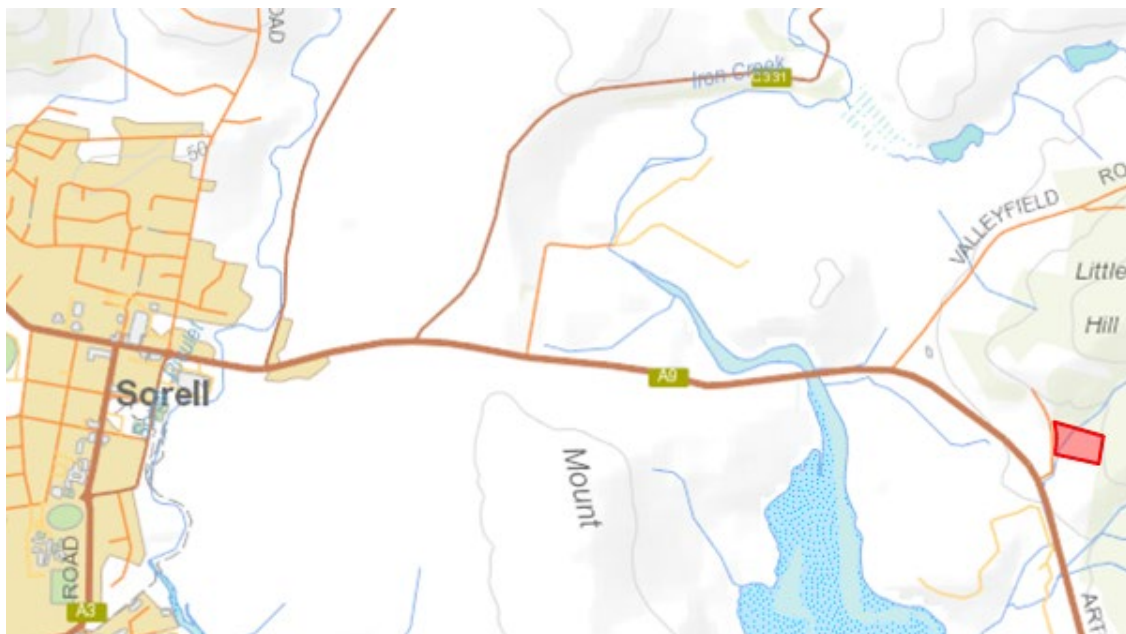
SIGNED: 

DATED: 14/02/2021

## **APPENDICES**

<b>1 - Site Location</b>	<b>18</b>
<b>2 – Site Photos</b>	<b>19</b>
<b>3 – Design plans</b>	<b>21</b>
<b>4 – Design specifications</b>	<b>28</b>
<b>5 – Advice to project manager and installer</b>	<b>31</b>
<b>6 – Loading Certificate and O &amp; M guidelines</b>	<b>32</b>
<b>7 – Form 35</b>	<b>34</b>

## Appendix 1 - Site Location





## Appendix 2 – Site Photos



**(above) Views of proposed land application area.**





**Soil profile exposure in shed cutting showing typical soil profile.**

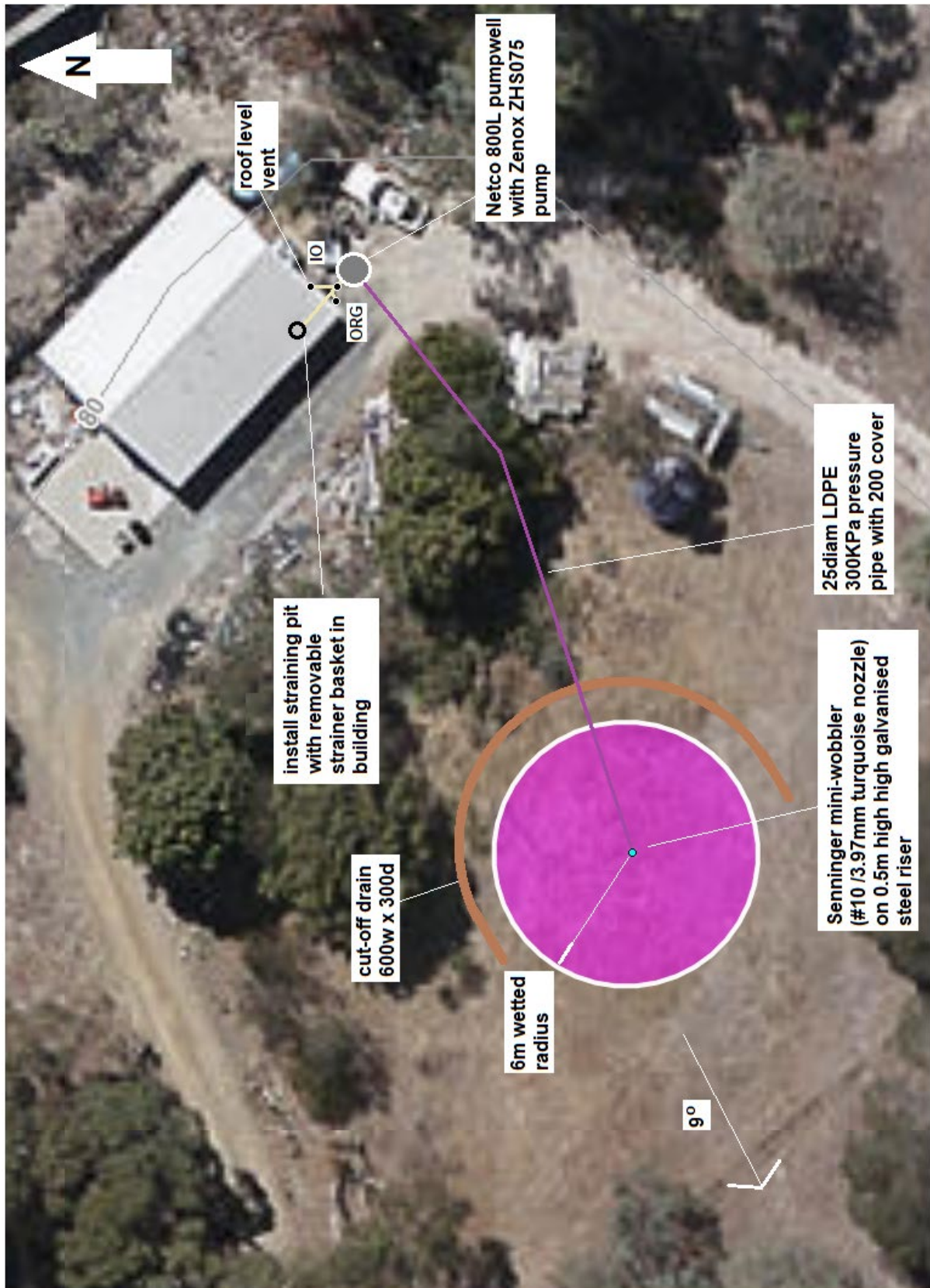


### Appendix 3 – Design plans



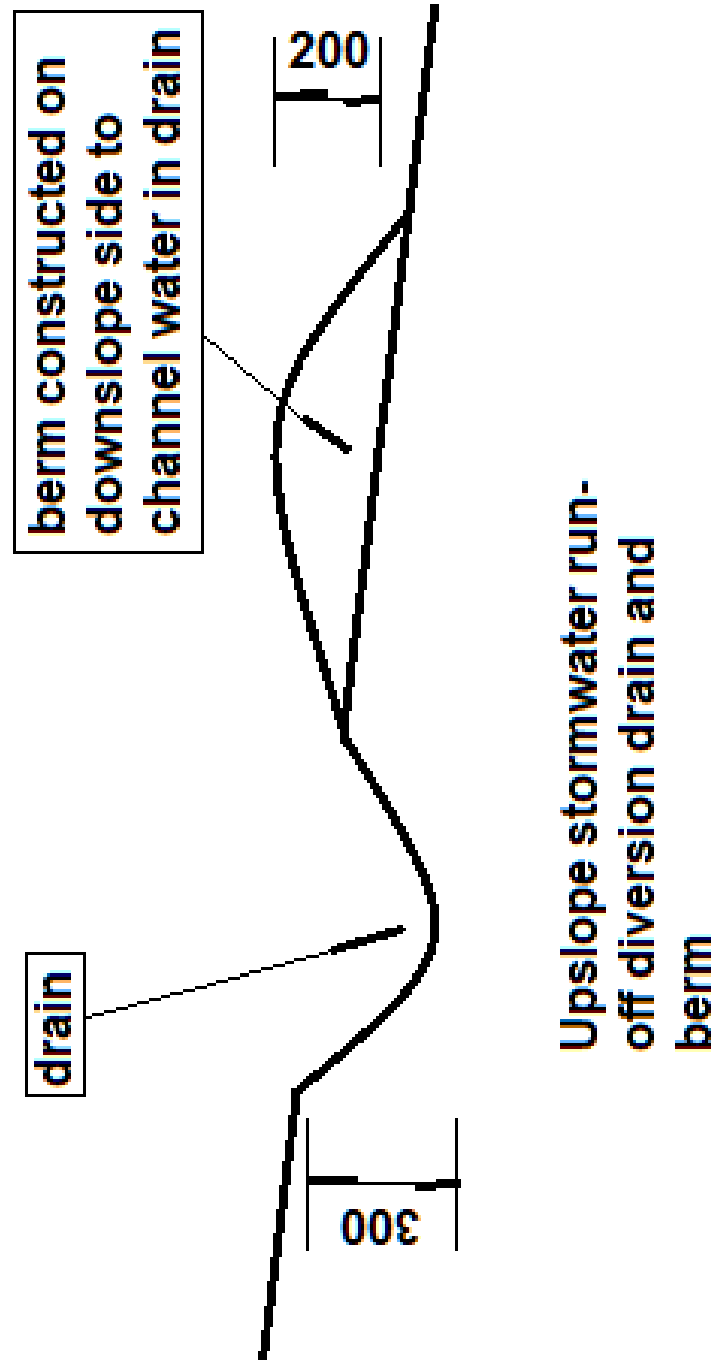
(above) Site plan



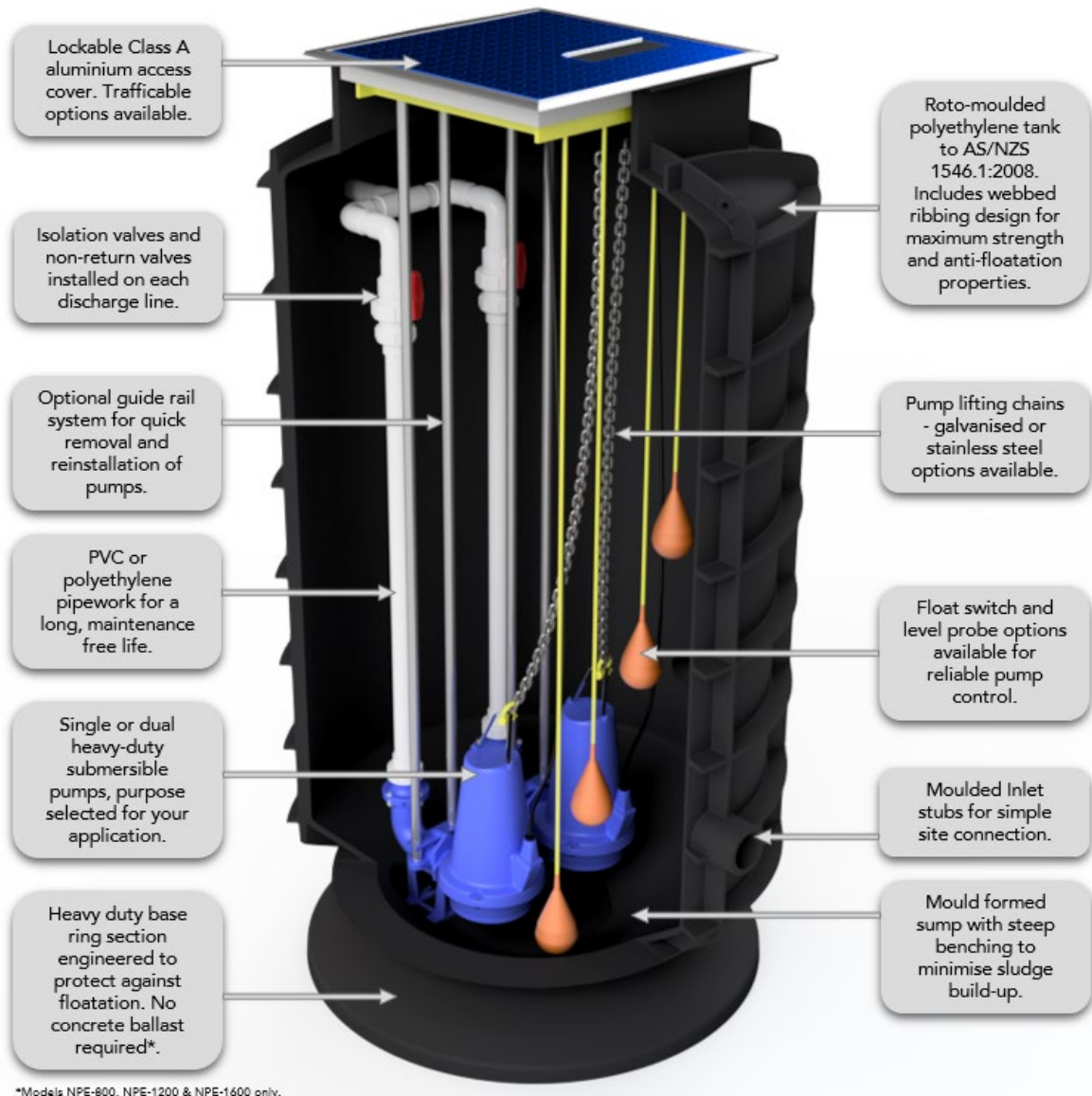


(above) Drainage plan

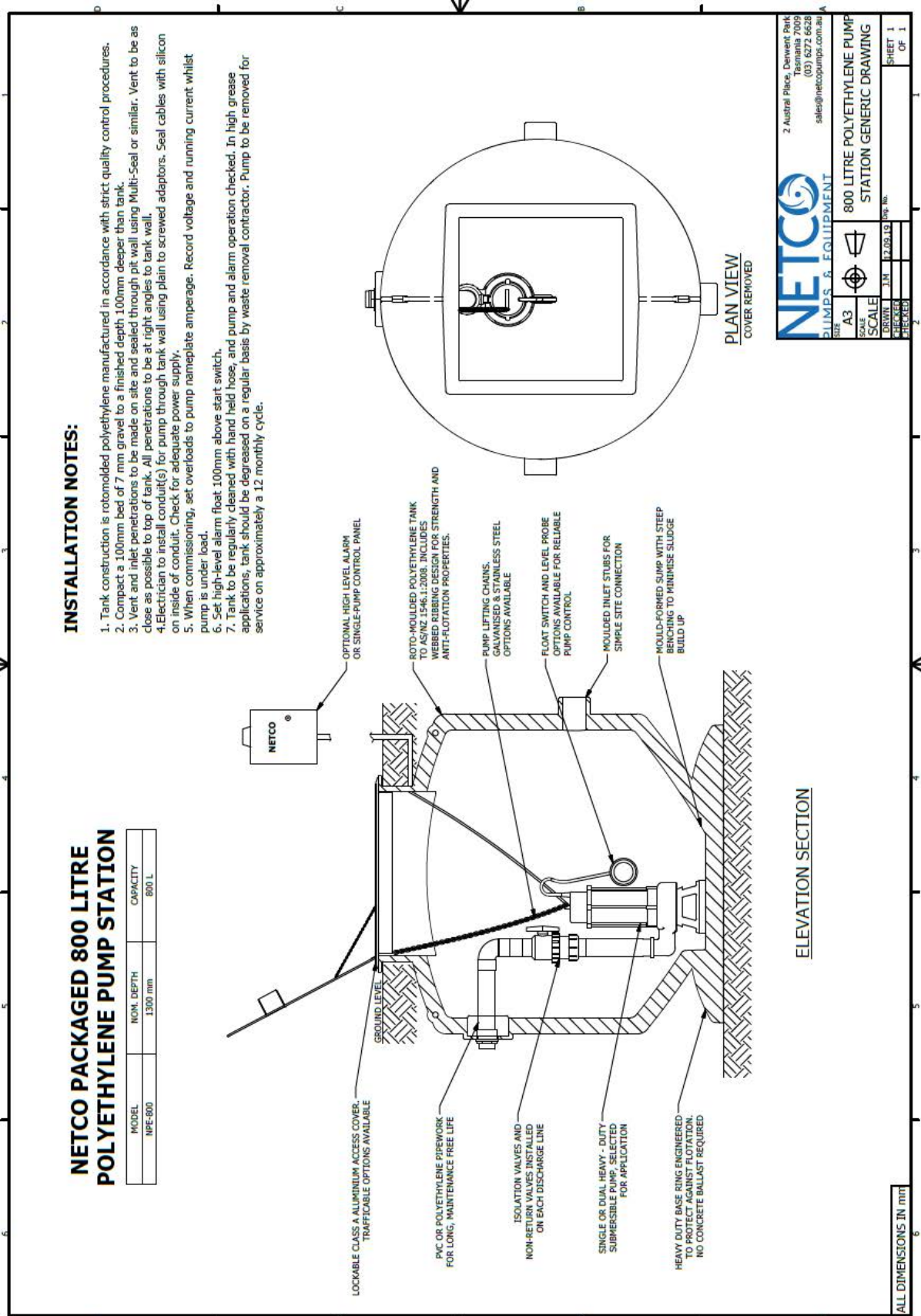




(above) Cut-off drain detail



(above) Netco pumpwell – detail 1.



(above) Netco pumpwell – detail 2

# ZHS Series



## Zenox High Head Submersible Drainage Pump



- High performance, two-stage strainer pump for high head applications
- Building site dewatering
- Feeding drippers from treatment chambers
- Stormwater drainage where greater head is required

### Two Models Available:

**ZHS-040-1A** 240 volt, 0.40 kW, Automatic

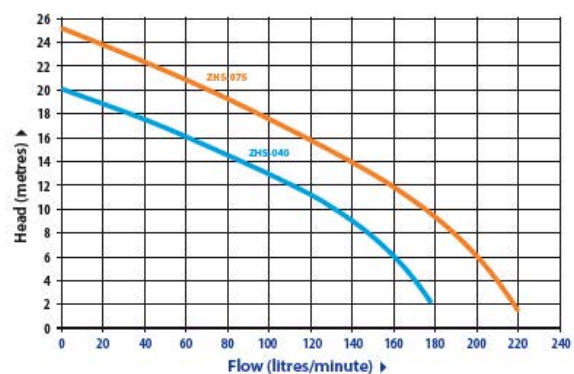
**ZHS-075-1A** 240 volt, 0.75 kW, Automatic

### FEATURES:

- Stainless steel/cast iron construction
- Double mechanical seal lubricated in oil chamber
- Will pass solids up to 8 mm
- Thermally protected motor

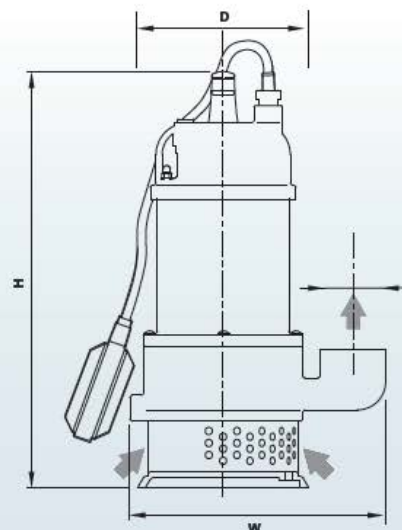
- 32/40 mm vertical discharge
- 10 metre cable H07 RN-F

### PUMP PERFORMANCE:



### SPECIFICATION:

Model Name	Maximum Flow rate	Maximum Head	Motor Size	Weight	Dimensions W x D x H
<b>ZHS-040</b>	180 L/min	20	0.40kW	16 kg	227 x 151 x 370
<b>ZHS-075</b>	220 L/min	25	0.75kW	17 kg	245 x 170 x 474



**Zenox Pumps**

Zenox Pumps reserves the right to change product specifications

(above) Pump detail – ZHS-075 to be fitted

## ZLA-240 Series



### Zenox ZLA-240-FM Flush Mounting Alarm



- Aesthetically pleasing flush mounting design
- Can be used on all tanks and sumps
- After 12 hour mute feature
- A low voltage supply to float switch
- Simple dip switch operation to select alarm for "High Level" or "Low Level"
- Quality construction - Made in Australia
- Supplied complete with 10 metre level-sensing float switch

#### SPECIFICATION:

- 240 volt power supply
- 240 VDC operating voltage
- 118 mm high x 71 mm wide
- Standard float cable length 10 metres, lengths up to 50 metres available on request



**High-level alarm panel detail.**

## Appendix 4 – Design specifications.

- All wastewater generated in the distillery, with the exception of hand-basin and sink waste will be discharged to the pumpwell via a floor waste pit.
- The solids collection pit is to comprise a concrete pit, as per part Tas H202.4c of NCC Vol 3, with removable grated lid, with high level inlet discharging into a removable solids collection basket, fabricated from perforated aluminium with minimum solids retention diameter of 4mm fitted in turn with a polyester mesh liner providing for 1mm solids retention. (These are available, made to order, from Hudsons Civil Products, at 10 Gepp Parade, Derwent Park.)
- The floor-waste pit is to discharge by gravity to a Netco/Zenox 1200L capacity pumpwell, fitted with Zenox ZHS-075 pump. Pumpwell etc specifications are provided below.
- High level warning switch in pumpwell is to be connected to a Zenox ZLA 240 alarm panel, which is to be located in a prominent location within the distillery shed.
- Pipework from the pumpwell to the land application area is to comprise 25mm or 32mm lilac LDPE pipe with minimum top cover of 300mm, with “Recycled/Reclaimed Water” tape laid 100-200mm in trench above pipe
- Discharge from pumpwell directed via a buried 25mm or 32mm diam purple LDPE pipe to a 0.5m high galvanised steel riser, fitted with a single Senninger mini-wobbler with 6m minimum throw radius (#10 /3.97mm turquoise nozzle), irrigating 684L/hr @ 15m head.
- Cut-off drain comprising 300mm deep x 600mm wide trench to be excavated upslope of wetted area irrigation area; excavated spoil to be deposited on downslope edge of drain to form a bund to effectively intercept and channel upslope run-off around the irrigation area.

### **Pump etc specifications:**

- **Pumpwell:** Netco NPE-Series Single-Pump Polyethylene Packaged Sewage Pumping Station model NPE-800-S/S (800L) with Class A trafficable rated anti-skid lockable aluminium lid.
- **Pump:** Single-phase, automatic submersible Zenox High Head Submersible Drainage Pump model ZHS-075-1A 240 volt, 0.75kW, Automatic installed in free-standing configuration in the chamber.
- **Pipework:** 32mm PN12 lilac or cream PVC pipe with solvent-welded joints, terminating in a single 50mm BSP connection on the side of the chamber wall.



- **Valves:** Heavy-duty 50mm PVC Flo-Control combination ball/swing check valve c/w dismantling unions to be incorporated as part of the discharge pipework.
- **Alarm:** A Zenox ZLA-240-FM indoor-mounting visual and audible high-level alarm to be supplied c/w 10m level-sensing float switch. The float switch to be mounted in the pump chamber, secured to a fabricated stainless-steel mounting bracket with the alarm operational level factory pre-set.
- **Lifting chain:** Heavy-duty 8mm galvanised pump lifting chain to be fitted to pump, complete with Grade 316 Stainless steel lifting shackles. Chain to be fixed to a fabricated stainless-steel mounting bracket in the pump chamber.
- **Access cover:** Light-duty, lockable Class A aluminium access cover suitable for pedestrian traffic loading to be supplied and bolted to the top of the chamber to facilitate access to the pump station for maintenance purposes.
- **Circuit/pump protection:** It is strongly recommended that an Overload Protector can be mounted near the power source for the pump, should the pump block, the power will trip, therefore protecting the pump from burning out.

#### **Installation:**

- **Location:** Adjacent to distillery shed.
- **Pumpwell:** Base of excavation and lower sides and base of pumpwell to be set in concrete ballast in accordance with the installation manual recommendations.
- **Cover slab:** A concrete surround cover slab is to be poured around the access cover. This will seal and secure the unit and provide a neat, serviceable finished surface level.
- **Rising main:** 25mm or 32mm ID lilac LDPE pipe laid in trench with 200mm surface cover.

#### **Venting:**

- Pumpwell to be externally vented in accordance with NCC Pt 3, Tas F101.2 and Tas Figure F101.2 and Parts C1 and C2.

#### **Commissioning of pump system**

- Pumpwell to be filled with clean water to depth exceeding trigger level for pump float switch and high-level alarm float switch.
- Turn on power.



- Check that high-level alarm panel is functioning.
- Check that pump starts.
- Pressure check supply manifolds in the irrigation area to ensure that a pressure of 150KPa is achieved at the highest point in each area.
- Check operation of flush valve by opening when the irrigation area is pressurised.

**Maintenance of pump system.**

- Maintenance is to be undertaken at maximum of 12-monthly intervals.
- Check operation of pump and high-level float alarm.
- Clean pumpwell of any extraneous matter such as silt/sediment.

## **Appendix 5 – Advice to Project manager and installer**

Important notes for Project Manager.

It is vitally important to the future of the on-site wastewater management system to avoid damage to soil structure on the site, which would reduce soil permeability, leading to possible early failure of the effluent absorption area.

Actions that may damage soil structure include:

- Compaction, which reduces soil porosity;
- Smearing, where soil surfaces are smoothed, filling pores and cracks; and,

Project Manager Responsibilities.

The Project Manager must ensure that:

1. Before project construction work commences, the Effluent Absorption Area is properly identified on site and barricaded, fenced, roped or taped to prevent unauthorised access. This action should be documented both on the site plan and with the local Council.
2. Vehicles, earth-moving plant etc must not park or manoeuvre on the Effluent Absorption Area.
3. The Effluent Absorption Area is not used for the stockpiling of construction materials, excavated fill or other materials.
4. All water runoff resulting from the construction of driveways, cut & fill and other excavations is directed to discharge well away from and downslope of the Effluent Absorption Area.

## **Appendix 6 – Loading certificate and Operation & management guidelines.**

This loading certificate is provided in accordance with Clause 7.4.2(d) of AS/NZS 1547.2012.

### **Loading Certificate for on-site wastewater management system at 16 Schofield Drive, Schofield.**

#### **1. Loading Certificate for Distillery wastewater treatment and irrigation system.**

i. **System capacity** (medium-long term) –

350L of distillery waste wash-down water / month.

ii. **Design criteria summary:**

- Effluent quality – screened/filtered primary
- Soil category - 6
- Land application system - Surface spray irrigation (see Appendix M of AS/NZS1547.2012)

iii. **Reserve area.**

250m<sup>2</sup> of the land including the primary irrigation area should be reserved from further development (such as buildings, driveway, paths, paved areas, decks, importation of fill or excavations etc), for use as an alternate land application area in the event of an irrigation area failure due to soil property changes, which cannot rectified by simple replacement of irrigation infrastructure etc

iv. **Water efficient fittings etc**

Not applicable.

v. **Variation from design flows etc.**

If wastewater loadings significantly exceed those predicted, the irrigation area may become overloaded resulting in pooling and/or runoff of irrigant, impacts on vegetation etc. If this occurs, the irrigation area should be enlarged in accordance with the recommendations in Appendix 4.

vi. **Consequences of changing wastewater characteristics.**

The operators should avoid disposing of wastes which would be additional to those normally produced in the brewing/distillation process.

vii. **Consequences of overloading the system.**

Usage which produces wastewater in volumes which exceed those predicted in the above Site & Soil Evaluation report may result hydraulic overloading of the irrigation system, ponding of effluent, public and environmental health nuisances, pollution of surface waters etc and require enlargement of the irrigation area.

viii. **Consequences of underloading the system.**

Nil.

ix. **Consequences of lack of operation, maintenance and monitoring attention.**

The system requires little maintenance except for removal of the solids collection basket and disposal of the contents.

Consequences of failure to observe the regular maintenance requirements may include any of the following:

- Nuisance and unpleasant odours.
- Pollution of waterways, streams, beaches and shellfish beds.
- Contamination of bores, wells and groundwater.
- Excessive and unsightly weed growth.
- Alteration of local ecology

• **Operation & Maintenance Requirements**

- Clean out the solids retention basket in the solids collection pit after each production cycle.
- Make sure that you have the pumpwell cleaned out yearly or as as required. Failure to do this at the required frequency may result in carry-over of solids into the irrigation area, causing failure of the land application area, which may then require expensive reconstruction works.
- Dose the solids collection pit with at least 100g of Sodium bicarbonate to neutralise residual acidity and test contents of pumpwell for pH (swimming pool pH tester is suitable), to ensure pH of at least 7.5 prior to irrigation.
- Dose solids collection pit with 100g of gypsum prior to irrigation to counteract high Sodium Absorption Ratio buildup in topsoil of irrigation area.
- Discourage access by visitors or pets to the land application area.
- Livestock should not be allowed on or near the irrigation area; if such animals are kept, they should be excluded from the irrigation area for at least 48 hours after each irrigation event.
- Do not allow vehicles on or near the land application area.
- Keep the cut-off drain above the land application area open and clear of debris to prevent rainwater flowing into the effluent absorption area.

Problems may occur with systems which have not been properly maintained and where absorption areas have become blocked or clogged. The warning signs are obvious and include:

- Land application area is wet or soggy with wastewater ponding on the surface of the ground.
- Unpleasant odours in the vicinity of the pumpwell.
- See information below from CBOS with regard to purchase, installation & maintenance of aerobic wastewater treatment system.

## Appendix 7 – Form 35.

### CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94  
Section 106  
Section 129  
Section 155

Form **35**

To:  Owner name  
 Address  
  Suburb/postcode

#### Designer details:

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

#### Details of the proposed work:

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

Type of work: Building work ☐ Plumbing work ☒ (X all applicable)

#### Description of work:

On site wastewater management system –  
 Hydraulic design of irrigation area for application of distillery effluent.

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

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

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

<b>Design documents provided:</b>	
-----------------------------------	--

The following documents are provided with this Certificate –

*Document description:*

Drawing numbers: Appendix 3	Prepared by: Richard Mason	Date: 14/02/2021
Schedules:	Prepared by: Richard Mason	Date:
Specifications: Appendix 4	Prepared by: Richard Mason	Date: 14/02/2021
Computations: pages 5-7	Prepared by: Richard Mason	Date: 14/02/2021
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by:	Date:

<b>Standards, codes or guidelines relied on in design process:</b>	
--	--

AS/NZS1547.2012 On site domestic waste water management

Australian Plumbing Code

Director's Guidelines for On-site Wastewater Management Systems, Director of Building Control (Tasmania), 2017.

<b>Any other relevant documentation:</b>	
--	--

Site & soil evaluation and design report. Onsite wastewater management system for proposed distillery operation at 16 Schofield Drive, Sorell TAS 7172, dated 14/02/2021, by Richard Mason, Onsite Assessments Tas.

<b>Attribution as designer:</b>	
---------------------------------	--

I, Richard Mason am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	<div>Richard Mason</div>		<div>14/02/2021</div>
Licence No:	<div>CC6157T</div>		

<b>Assessment of Certifiable Works: (TasWater)</b>	
--	--

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

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

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

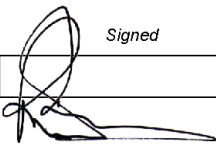
**I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:**

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

<b>Certification:</b>	
-----------------------	--

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

**Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: [www.taswater.com.au](http://www.taswater.com.au)**

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	<div style="border: 1px solid black; padding: 2px;">Richard Mason</div>	<div style="border: 1px solid black; padding: 2px;"></div>	<div style="border: 1px solid black; padding: 2px;">14/02/2021</div>



# CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94  
Section 106  
Section 129  
Section 155

To:  Owner name  
 Address  
  Suburb/postcode

Form **35**

## Designer details:

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

## Details of the proposed work:

Owner/Applicant  Designer's project reference No.   
 Address:  Lot No:   
   
 Type of work: Building work ☐ Plumbing work ☐ (X all applicable)

## Description of work:

On site wastewater management system –  
 Hydraulic design of irrigation area for application of distillery effluent.

(new building / alteration /  
 addition / repair / removal /  
 re-erection  
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 management system /  
 backflow prevention / other)

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

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

Other details:

**Design documents provided:**

The following documents are provided with this Certificate –

*Document description:*

Drawing numbers: Appendix 3	Prepared by: Richard Mason	Date: 14/02/2021
Schedules:	Prepared by: Richard Mason	Date:
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Test reports:	Prepared by:	Date:

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AS/NZS1547.2012 On site domestic waste water management

Australian Plumbing Code

Director's Guidelines for On-site Wastewater Management Systems, Director of Building Control (Tasmania), 2017.

**Any other relevant documentation:**

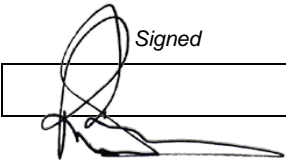
Site & soil evaluation and design report. Onsite wastewater management system for proposed distillery operation at 16 Schofield Drive, Sorell TAS 7172, dated 14/02/2021, by Richard Mason, Onsite Assessments Tas.

**Attribution as designer:**

I Richard Mason am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

Designer:	<div>Name: (print)</div> <div></div>	<div>Signed</div> <div></div>	<div>Date</div> <div>14/02/2021</div>
Licence No:	<div></div>		

## Assessment of Certifiable Works: (TasWater)

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

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

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

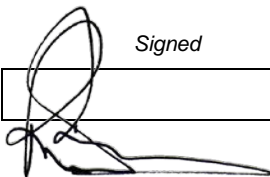
**I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:**

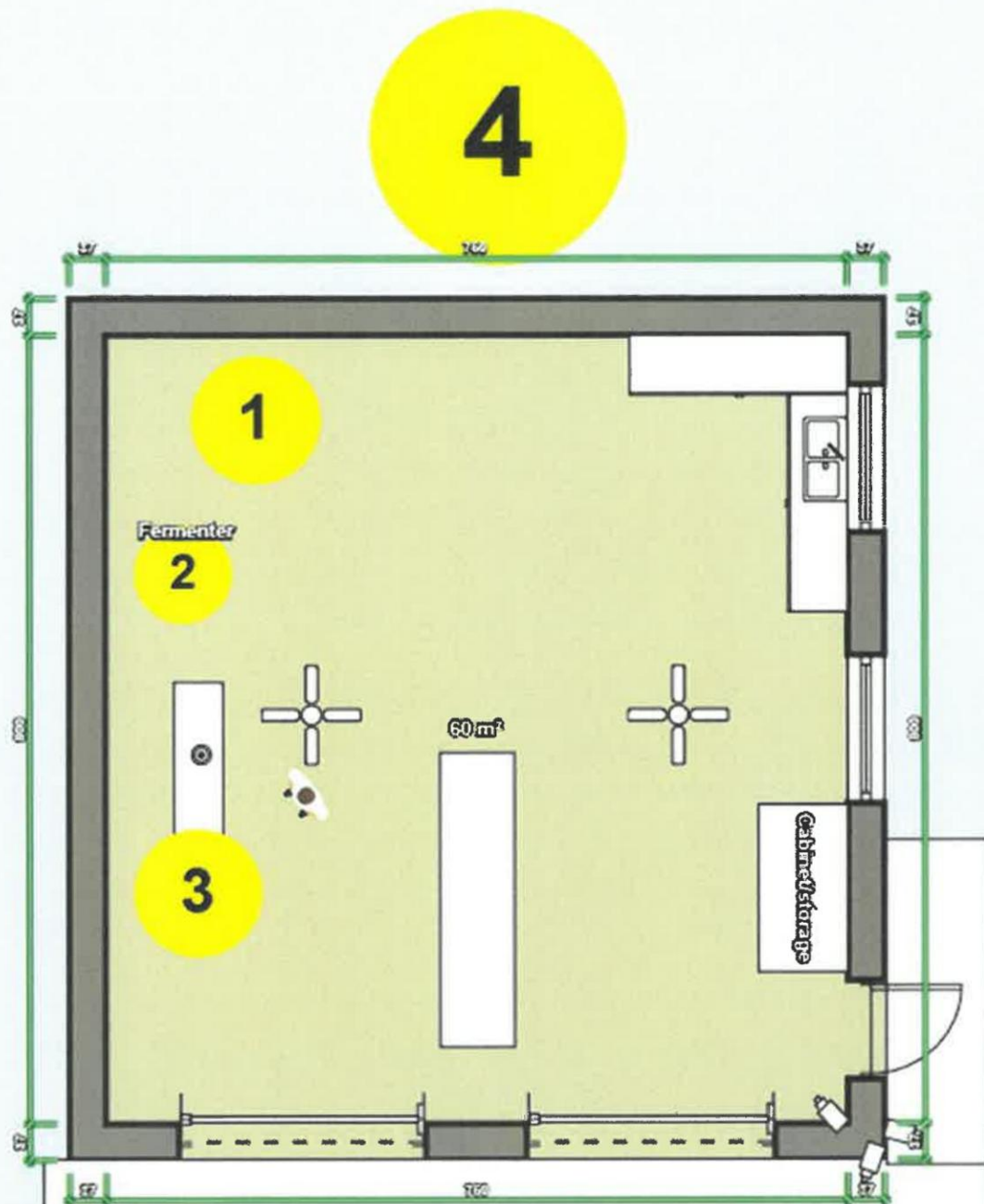
- ☐ The works will not increase the demand for water supplied by TasWater
- ☐ The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- ☐ The works will not require a new connection, or a modification to an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

### Certification:

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

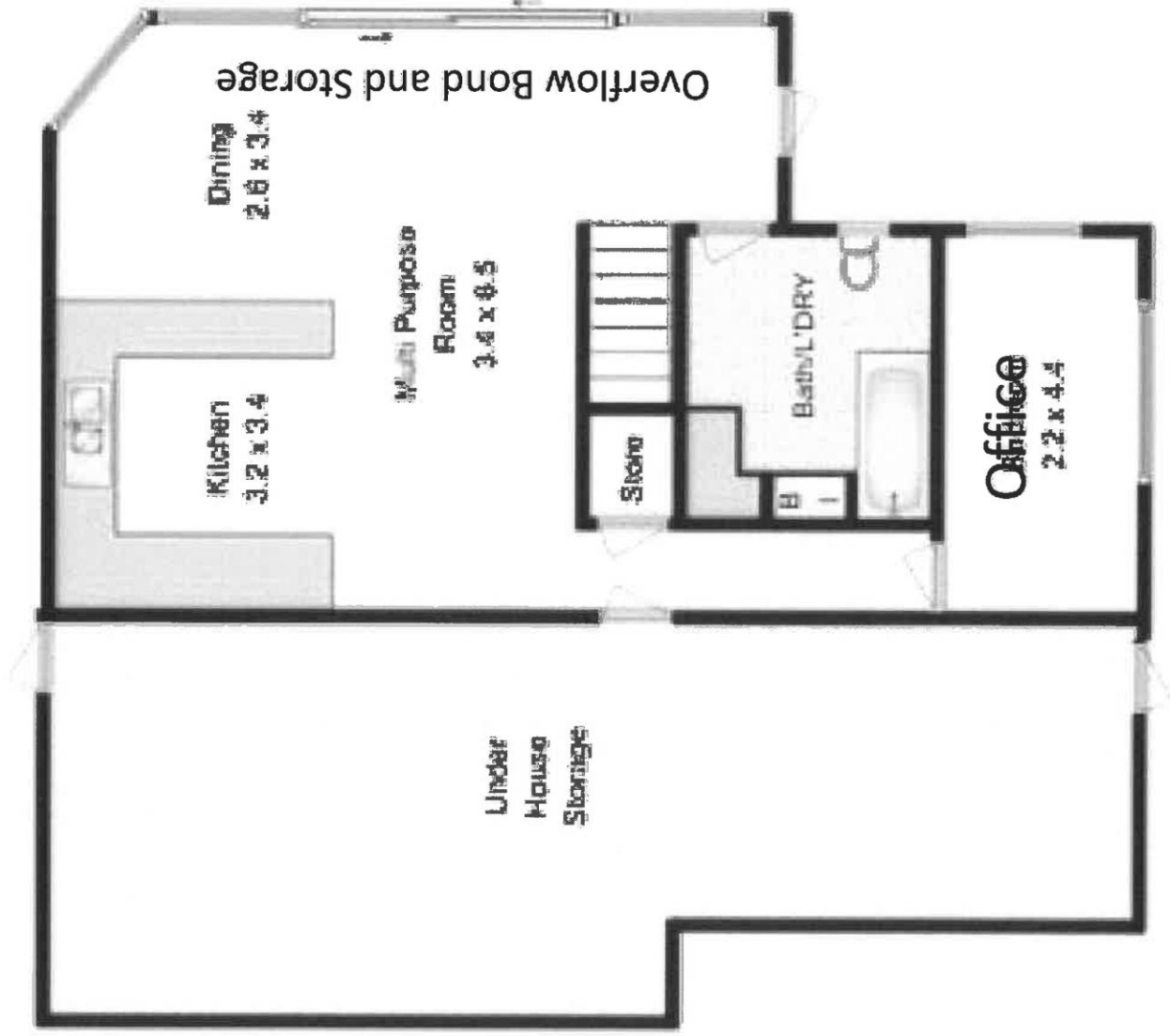
Note: the Guidelines for TasWater Certification of Certifiable Works Assessments are available at: [www.taswater.com.au](http://www.taswater.com.au)

	Name: (print)		Signed	Date
Designer:	<div style="border: 1px solid black; width: 250px; height: 20px;"></div>		<div style="border: 1px solid black; width: 180px; height: 20px;"></div>	<div style="border: 1px solid black; width: 100px; height: 20px; text-align: center;">14/02/2021</div>

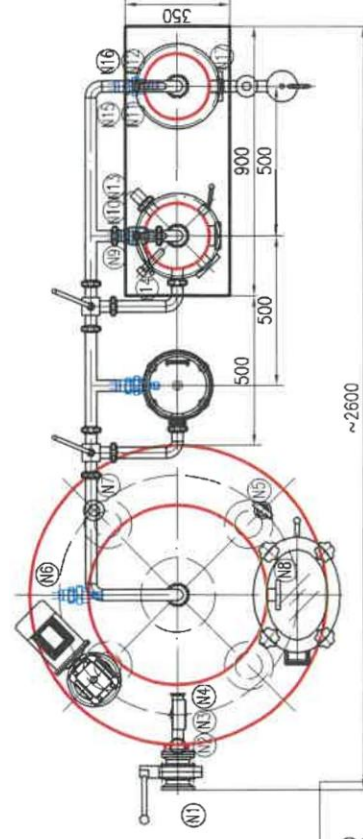
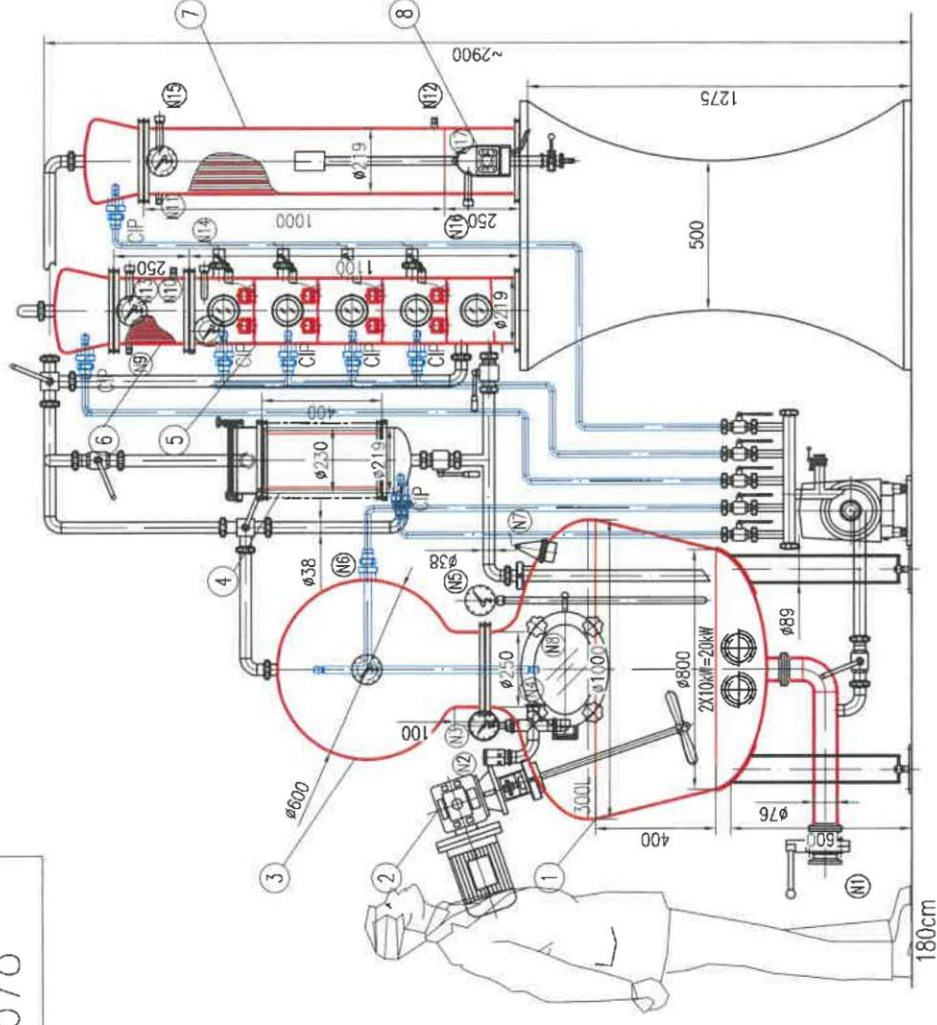


1. Mash tun
2. Fermenter
3. Still
4. Water tank

## Bottom level of house



Pc20A3678

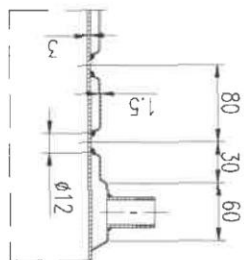
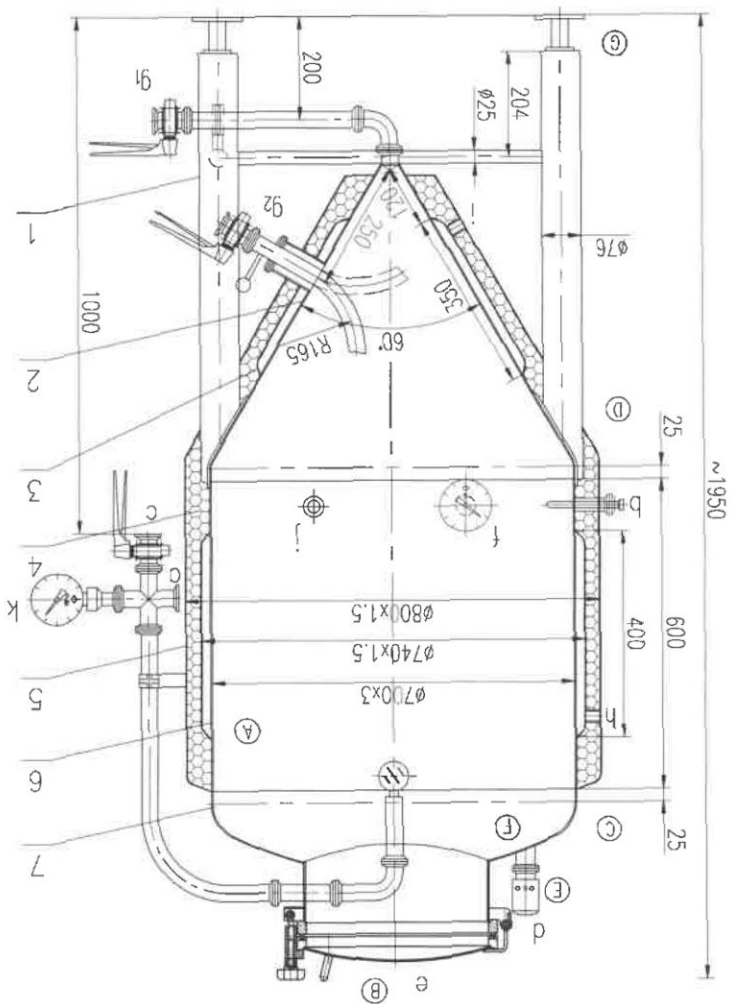
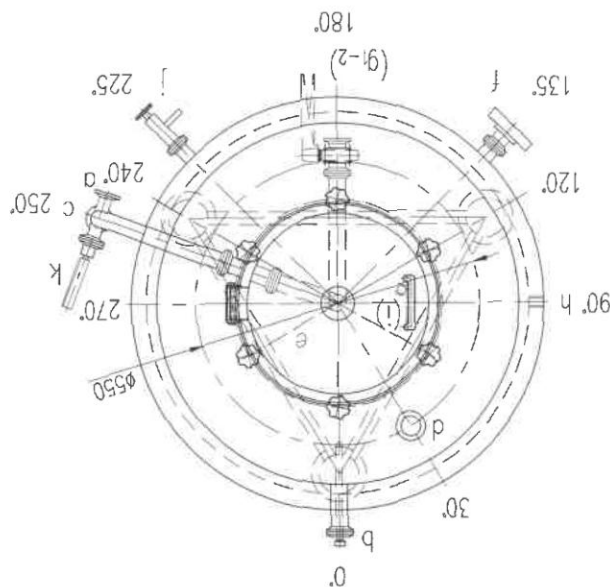


## Specification

Symbol	Spec	Connecting style	Usage
N1	3"	Tri-clamp	outlet
N2	1½"	Tri-clamp	pressure gauge
N3	1½"	Tri-clamp	pressure relief valve
N4	1½"	Tri-clamp	inlet/breath hole
N5	1½"	Tri-clamp	temperature gauge
N6	2"	Tri-clamp	cleaning hole
N7	DN50	DIN	sight light
N8	DN350	Quick-opened	man hole
N9	1"	Female screw(BSP)	cooling water outlet
N10	1"	Female screw(BSP)	cooling water inlet
N11	1"	Female screw(BSP)	cooling water outlet
N12	1"	Female screw(BSP)	cooling water inlet
N13	1"	Tri-clamp	thermowell hole
N14	1"	Tri-clamp	thermowell hole
N15	1"	Tri-clamp	thermowell hole
N16	1"	Tri-clamp	thermowell hole
N17	1¼"	Tri-clamp	outlet
8		parrot	SUS304
7		condenser	C12200
6		dephlegmator	C12200
5		distillation column	C12200
4		gin basket	Glass
3		helmet	C12200
2		motor	0.75kW 60rpm
1		pot	C12200/SUS304
N0.		Name	Material
		Quantity	Remark
<div> <div>DAEYOO TECH.CO.,LTD,WENZHOU</div> <div> <div>responsibility</div> <div>design</div> <div>drawing</div> <div>check</div> <div>ending</div> </div> <div> <div>sign</div> <div>Jerry Sun</div> <div>Smith</div> <div>lan</div> <div>C.S</div> </div> <div> <div>date</div> <div>DYE-300L-II-φ219</div> <div>copper still</div> <div>1:50</div> </div> </div>			
<div> <div>General chart</div> <div>DYE-S-2020-0082-01</div> </div>			material

202010261958





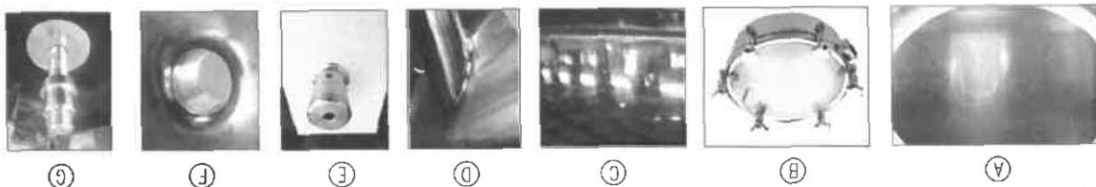
Specification

Symbol	Spec	Connecting style	Usage
c	Ø32(1.25")	Tri-clamp	air vent
b	Ø38(1.5)/NPT <sub>1/2</sub>	Tri-clamp/ Female screw	thermowell
c	Ø32(1.25")	Tri-clamp	cleaning hole
d	Ø38(1.5")	Tri-clamp	relief valve
e	Ø350	Quick-open	man hole
f	Ø32(1.25")	Tri-clamp	thermometer
g-h-2	Ø32(1.25")	Tri-clamp	outlet
h	Female screw		cooling medium outlet
i	Female screw		cooling medium inlet
j	Tri-clamp		sample hole
k	NPT <sub>1/2</sub>	Female screw	pressure hole

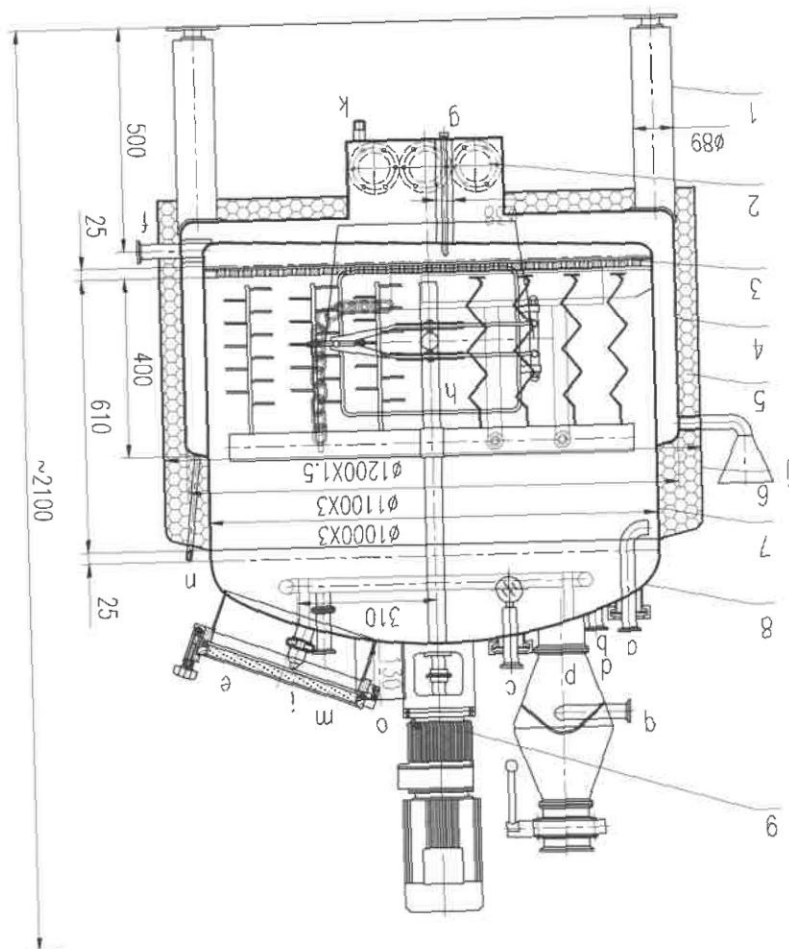
- 1.The inner surface polished to Ra ≤ 0.4um.
- 2.Outer surface adopts high accuracy sousbrillant.
- 3.Nozzle position by vertical view.

Technique parameter

inner tank	liquid	storage liquid
jacket	liquid	cooling medium
SUS304	operating pressure Mpa	0.15
0.3	heating area m <sup>2</sup>	1.2
300	working volume L	300
360	total volume L	360








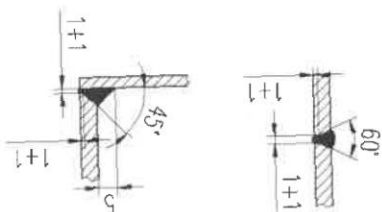
A. B Type Welded Joint

Technique parameter	
inner tank	jacket
storage liquid	oil
material	SUS304
working pressure MPa	ATM
heating area m <sup>2</sup>	2
working volume L	500
total volume L	600

A. B Type Welded Joint

Symbol	Spec	Connecting style	Usage
a	ø35(2.5")/ø38(1.5")	Tri-clamp	inlet
b	ø38(1.5")	Tri-clamp	spare hole
c	ø35(2.5")/ø38(1.5")	Tri-clamp	cleaning hole
d	ø38(1.5")	Tri-clamp	breath hole
e	DN350	Quick-open	moon hole
f	ø38(1.5")	Tri-clamp	outlet
g	M12x1.5	Female screw	thermowell
h	330X430	Quick-open	man hole
i	DN50	Male screw	sight light
j	ø38(1.5")	Female screw	oil inlet
k	ø38(1.5")	Male screw	oil outlet
m	ø38(1.5")	Tri-clamp	spent grain washing hole
n	ø38(1.5")	male screw	oil vent
o	ø102(4")		chimney
p	ø102(4")	Tri-clamp	hole
q	ø32(1.25")	Tri-clamp	inlet

9	Agitate	1	Assembly	EX/010000/010000
8	Dish head	1	SUS304	
7	Inner tank	1	SUS304	
6	Cladding	1	SUS304	
5	Insulation	1	PU	
4	Joacket	1	SUS304	
3	Filter plate	1	SUS304	
2	Electric heaters	3	Assembly	10kw/pcs
1	legs	3	SUS304	
NO.	Name	Quantity	Material	Remark
Deyouo Tech. Co.,Ltd. Wenzhou				
				
responsibility	sign	date	DYE-J-2020-1068-00	
design			500L	
drawing	dis		Mash tun/outer tun	
working			1:15	
check			quantity	NO
				A



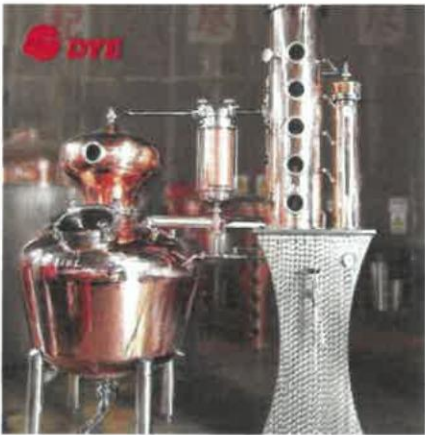
From	DAEYOO TECH. CO.,LTD.WENZHOU	Date	October 20,2020
To	"Steven " <steven.irwin@justice.tas.gov.au>	Country	AUSTRALIA
Departure port	Ningbo or Shanghai	Certificates	UL, CSA ,ISO 9001, CE,PED
Packing	LCL or FCL(details refer to the below)	HS Code	8419409090
Delivery terms	90working days after receiving deposit & confirming drawings	Payment terms	50% T/T in advance, 50% before shipment
Warranty	13months after you receive the equipment	Valid	1 week
Contact info	<b>Catherine/DAEYOO TECH. CO.,LTD.WENZHOU</b> <b>Address: No.4485, 3 Road, Binhai Industrial park ,Wenzhou city,China.</b> <b>Tel: +86-18105878903 Fax: +86-577-86801555</b> <b>E-mail: daey008@dayuwz.com Web: www.dayuwz.com or www.zjdayu.com</b>		

## Price List

Item name	Description	Unit	QTY	UNIT price/FOB (USD)	Total Price /FOB (USD)
500L Mash/lauter tun	Electric heating, with rake stirrer&scraper dish top and slant bottom, top&side manway(φ1000x610mm), thickness:δ3/δ3/δ1.5mm, with false bottom, Explosion agitator	set	1	US\$6,490.0	US\$6,490.0
300LFermenter	1. Material: Stainless Steel 304 2. Tank Shape:dished top and 60°cone bottom 3. Tank thickness:2.5mm/1.5mm/1.5mm 4. Cylindrical size: Diameter-- 700mm, height--600mm 6. Accessories: tri-clamp outlet,CIP spraying ball, top manway	set	1	US\$1,715.0	US\$1,715.0
600LFermenter	1. Material: Stainless Steel 304 2. Tank Shape:dished top and 60°cone bottom 3. Tank thickness:3mm/1.5mm/1.5mm 4. Cylindrical size: Diameter-- 900mm, height--750mm 6. Accessories: tri-clamp outlet,CIP spraying ball, top manway	set	1	US\$2,575.0	US\$2,575.0
300L Model II	consists of still pot(Copper made,Electric heated), copper helmet,Gin basket,copper column (4plates),and condenser column ,one water recycle tank	set	1	US\$24,830.0	US\$24,830.0

TTL US\$35,610.0

# Detail Specification

Item name	Specification	Reference Pic
300L Model II	<p>Function: Distilling to get pure alcohol</p> <p><a href="#">Still Pot</a></p> <p>Pot cylinder size:  <b>copper made:</b> <math>\Phi 1000 * \Phi 800 * 400\text{mm(H)}</math> ,            100% TIG welding with pure argon gas shield            Interior Finish: Overall polishing to <math>0.2\ \mu\text{m}</math>            Agitator: <b>anti-explosion</b> 0.75kw/60rpm            Tank leakage test by water&amp;pressured gas            Jacket leakage test by water and pressured gas            Sanitary full glass top mounted manway            CIP arm with <math>360^\circ</math> coverage CIP spraying ball            Pressure relive valve</p> <p><a href="#">Copper helmet</a></p> <p>Copper made, <math>\Phi 250\text{mm}</math> flange, concentric reducer</p> <p><a href="#">Gin Basket</a></p> <p>Glass made and internal with copper barrel,  <math>\Phi 159\text{mm} \times 400\text{mm(H)}</math>;            Internal with copper barrel</p> <p><a href="#">250mm dia copper Distilling Column with copper dephlegmator</a></p> <p>Copper made, 63, 4 plates, copper bubble caps/CIP ball/drain valve for each plate</p> <p><a href="#">Condenser column</a></p> <p>Copper made, tube and shell type, parrot spout</p> <p>With water cycle tank</p> <p><a href="#">With cleaning pipes and pumps to cleaning distiller</a></p>	

## PACKING WAY:

When Loaded in Whole Container, the tank will be covered by plastic film and cloth, Lay down & fixed on a Iron frame, finally the whole tank will be fixed in the container !

