

**Regional Viticultural Equipment
Wash Down Facility**

DESIGN SPECIFICATION

INTRODUCTION

This specification covers the concept and relevant technical data relating to a “*Vehicle and Equipment Wash Down Facility*”. Such a facility would be suitable for:

- Locating in South Australia’s viticultural regions for use by vineyards, contractors and transport operators;
or
- a very large vineyard where the requirement to clean vehicle and equipment machinery is continuous and includes equipment on semi-trailers.

It is a generic model and can be modified to suit individual situations at the discretion of the Board or appropriate Council.

A SLAB PLAN SHOULD BE ATTACHED TO THIS DOCUMENT.

CONCEPT

The basic system consists of:

- **Wash Water** is supplied from a **Storage Tank** and pumped at high volume and pressure to either one or two **Hose Points**. These points are located either side of the wash down area. Storage capacity allows for 3 consecutive wash downs. An operator manually cleans the vehicle or piece of equipment and is responsible for plant security and correct operation while doing so.
- The **Wash Down Area** is an uncovered, self-draining, reinforced **Concrete Slab** graded to one end. It has vehicular access from one end only.
- This wash water is collected via a **Covered Sump** at the lower end and channelled into an **Underground Settling Pit**. Waste organic matter is manually removed from the sump area and deposited into an adjacent **Bin**.
- The **Collected Water** drains out of the Pit through the overflow pipe to a **Designated Disposal Area**.
- The storage tank makes up lost water through a direct **Mains Water Connection**.
- Equipment and controls are secure in an **Enclosed Area**.
- **Card Access** is possible for security and monitoring purposes.

A number of other additions allow flexibility for specific individual site requirements and give potential for significantly reduced running costs. These are:

- ❖ **Heating** – either instantaneous or re-circulation.
- ❖ **Recycling** - if wash down water is recovered.
- ❖ **Filtration** – if recycling is selected.
- ❖ **Automatic sediment disposal** - if filtration is chosen.

Technical Specifications

Task: Supply 6,000 litres per hour(100l/Min) of hot(50°C), or cold(Ambient), water at 500kPa to 2 hose points. Collect the wastewater, sediment and plant matter and dispose of them. Allow return pump, filtration and heating options so recycling of wastewater and hot wash down can be considered.

Heating – Raise water from ambient to 50°C and allow supply at rate of 6,000 litres per hour continuous flow for approximately 30 minutes per wash down (3,000 litres). This duty may be repeated 3 times consecutively. Time from ambient to 50°C must be minimal.

Return Pump – To match supply of 6,000 LPH with operation controlled by Settling Pit level.

Filtration – Remove all sediment and other matter and allow effective Supply Pump operation.

System

Slab

25 m x 8 m wash down slab using N40 grade concrete to A.S. 3600 – 1994.

12.5m x 5m Tank/Shed slab using N25 grade concrete to A.S. 3600 - 1994.

Refer to drawings and design notes by Structural Engineer concerning sandy or clay sites and for full detail. This consultant can arrange soil testing and make recommendations if required.

David Combe & Associates* 08332 1344, (08) 8332 1044(fax)
P.O. Box 402 e-mail: combe@camtech.net.au
Unley S.A. 5061

Local concrete contractors may be used for the slab installation but specifications must be adhered to.

Sump Cover

This may be locally manufactured and need not be heavy duty as vehicles cannot travel over it. It must safely bear the standing weight of any operator and should be galvanised for durability. Mesh size should screen out most pieces of plant matter but allow unrestricted flow of water.

This cover acts as a barrier to any small child gaining access to the drainage sump.

Structures

8m x 5m x 3m *Equipment Shed*. Galvanised C channel construction - [150LC 15 columns and rafters, 75LC 10 purlins and wall girts] with Hi-Tensile .40 wall & .47 roof cladding in either zincalume or colorbond. Optional positioned sliding door(s) and roof ventilator. 2 clear roof sheets for maximum natural lighting. Full specifications on order placement. Available from:

Basic Steel Supplies* (08) 8297 9577
40 Raglan Avenue
Edwardstown S.A. 5039 {quote DC 2311}
Gawler: (08) 8523 2666, Pooraka: (08) 8260 2777, Lonsdale: (08) 8384 8777

or

Alpha Industries* (08) 8349 6707, Fax (08) 83498637
12 Stock Road
Cavan S.A. 5094 Website: www.alphaind.citysearch.com.au

Storage Tank

9,000 litre - polyethylene construction, solid lid design, 50mm brass outlet. This *Tank* is a coloured, 'poly rib' vessel, has a 25 year guarantee and is available from:

*Bushman Tanks ** (08) 8359 5455
15 C.B. Fisher Drive Greg Sharp
Cavan Estate
Cavan S.A. 5094

Supply Pump

Grundfos CR8-80PT *Pressure Pump System* (3 Phase). Pressure Switch, Tank and Flow Switch included. M/A4FP Control Panel with Flow Switch protection. 3kW IP56.

*Harland Pump Sales & Service** (08) 82624911, 4355(fax)
8 Manthorpe Street Chris Watters
Dry Creek S.A. 5094

Hose points

Two x 16 metre x 32mm *Hoses c/w Brass Nozzles* - galvanised body. [Can be purchased with above pump].

Return Pump

Ebara Submersible Semi Vortex *Pump*, Type 50 DVSA, Single or 3 Phase. 8 or 12 metre head (Selection depends on filtration choices) Level Switch Control required.

*Harland Pump Sales & Service** (08) 82624911, 8262 4355(fax)
8 Manthorpe Street Chris Watters
Dry Creek S.A. 5094.

Settling Pit

PCP No 4 Trade Waste Arrester, 2,400 litre. 3000 x 1450 x 1650 Reinforced Concrete. (Modified if 'Recycling' option chosen in specification).

*PCP Pty. Ltd** (08) 8268 1622, 1644 (fax)
PO Box 320 Tom Schultz
Kilkenny S.A. 5009

Filtration

- Option 1: Ametek 20" Bag Filter Assembly.
Polypropylene Body (Suitable up to 5,000 LPH)
- Option 1a: Guardian II Bag Filter Assembly.
Stainless Steel Body (Suitable up to 30,000 LPH)

*USF Filtration Limited** (08) 8359 6722, (08) 8359 6733(fax)
500 Churchill Road Matthew Lee
Kilburn S.A. 5084

- Option 2: Ulbrec A100 Series Inline Strainer (107), Cast Body, Removable Strainer Basket.

*Ulbrich Products Pty. Ltd.** 03 9497 3077
66 Lower Heidelberg Road Martin Ward
Ivanhoe Vic. 3079

Sediment Collection/Disposal System

- Filtration Option 3: Lakos Liquid/Solids Separation System. No screens or filters, painted Carbon Steel Body. Includes 2 Separators, 2 Purge Controllers(Electrical) and Pit Eductors.

Watertec Australia (08) 8322 2442, 2443(fax)
PO Box 142 Peter Dominey
O'Halloran Hill S.A. 5158

Note: This system operates by pumping dirty water from the pit and passing it through two separator chambers where centrifugal force separates solids from liquids. A portion of the separated fluid is returned to the pit through a series of eductors that agitate the pit water, keeping solids in suspension so settling out does not occur. The separated solids discharge through a port to an area alongside where they can be collected and dumped. Electrically operated valves control this purging. There is no labour required to change filters, clean filter bags or screens - or time and labour needed to regularly clean out the pit. If a contractor failed to check or clean out the filters then a pressure build up and loss of flow would probably occur – this system avoids that potential.

Monitoring/Security

Security access and monitoring system. Driver 'badges' access card at Wash Down Facility and starts a preset time period. System shuts down on completion of time period. Administration log onto system as required, down load information and bill accordingly.

Reliable Fire Services* (08) 8223 4252, 5091(fax)
Level 1 Chris Fidock
176 Gilles Street
Adelaide SA 5000

Heating

- Option 1: Edwards HEV 330/1000 - Indirect Heat Exchange, Forced Draught, Gas Fired Warm Water System.
Electronic Controller, 1,000 litre Expansion Tank included.

Edwards Energy Systems Pty. Ltd* (08) 8340 8133, 8155(fax)
91a Drayton Street Kym McFarlane
Bowden S.A. 5007

- Option 2: DXI-IP/Forbes Hot Water Boiler.
Skid Mounted – LPG Gas Train, Circulating Pump, Expansion Tank and Interconnecting Copper pipe work included.
- Option 2A: DXI-IP/Watertec Hot Water Boiler.
Skid Mounted – LPG Gas Train, Circulating Pump, Expansion tank and Interconnecting Pipe work included.

Watertec Australia Pty. Ltd* (08) 8322 2442, 2443(fax)
Po Box 142 Peter Dominey
O'Halloran Hill S.A. 5158

- Option 3: LAARS Model HH1200 Hot Water Boiler. 293kW, Single Pass, Atmospheric Burner. Skid Mounted - LPG Gas Train, Modulating Control, Electronic Control Panel, Circulating & Pressure Delivery Pumps. 200 L S.S. Re-circulating Vessel and interconnecting copper pipe work included.

Andrew Sammut Enterprises* (08) 8322 6431 (Office & fax)
40 Verdeilho Circuit 0418 844186 (mob)
Reynella S.A. 5161 Andrew Sammut