

Fox Environmental Pty Ltd

Product Appraisal Report TWA 1101



WATER SERVICES ASSOCIATION
OF AUSTRALIA

Separator Systems for Light Liquids

Model Numbers

FX1000SS

FX1000SSD

FX1500SS

FX1500SSD

FX3000SS

FX3000SSD

FX6000SSD

Published - November 11

Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak body of the Australian urban water industry. Its 30 members and 28 associate members provide water and wastewater services to approximately 16 million Australians and to many of our largest industrial and commercial enterprises.

Urban water service providers have a critical role in ensuring that Australians have access to adequate and high quality water services. As Australia's population continues to grow, with most of this growth occurring in cities, that role becomes increasingly important.

WSAA's vision is for Australian urban water utilities to be valued as leaders in the innovative, sustainable and cost effective delivery of water services. WSAA strives to achieve this vision by promoting knowledge sharing, networking and cooperation amongst members. WSAA identifies emerging issues and develops industry-wide responses. WSAA is the national voice of the urban water industry, speaking to government, the broader water sector and the Australian community.

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1. Executive Summary

Fox Environmental is an Australian-owned company based in Warana Queensland with distributors in Queensland, New South Wales, Victoria and Tasmania.

This Appraisal Report has been compared against the requirements of the WSAA Specification WSA PS – 810 Separator Systems for Light Liquids (See appendix A).

Examination of all of the submitted documented material provides an expectation that the products described here in sourced and distributed by Fox Environmental Pty Ltd are 'fit for purpose' in the applications described in this report subject to future works items.

It is recommended that WSAA Members and Associates, subject to any specific requirements of the Member or Associate, accept or authorise the Fox Environmental product range as detailed in this report for use in sewer networks provided design, installation, acceptance testing and commissioning are in accordance with relevant WSAA Codes, WSAA Member Integrated Codes, and the manufacturer's requirements.

2. Company Overview

Fox Environmental is an Australian-owned company based in Warana Queensland with distributors in Queensland, New South Wales, Victoria and Tasmania.

3. Scope of this Appraisal

The scope of this appraisal covers separator Systems for Light Liquids manufactured from stainless steel in Model Numbers FX1000SS, FX1000SSD, FX1500SS, FX1500SSD, FX3000SS, FX3000SSD, FX6000SSD. The capacity of the separators vary from 1000Lt/Hr to 6000Lt/Hr and are manufactured from 304 Stainless Steel and can be fitted with either diaphragm or helical rotor pumps.

MODEL	FX1000SS	FX1000SSD	FX1500SS	FX1500SSD	FX3000SS	FX3000SSD	FX6000SSD
Material of construction							
Color Silver Above Ground							
Tank and Lid	304 Stainless Steel 1.6 mm.	304 Stainless Steel 1.6 mm.	304 Stainless Steel 1.6 mm.	304 Stainless Steel 1.6 mm.	304 Stainless Steel 1.6 mm.	304 Stainless Steel 1.6 mm.	304 Stainless Steel 2.00 mm.
Stand	25 mm. SHS Stainless Steel	25 mm. SHS Stainless Steel	25 mm. SHS Stainless Steel	25 mm. SHS Stainless Steel	25 mm. SHS Stainless Steel	25 mm. SHS Stainless Steel	40 mm. SHS Stainless Steel
Coalescing Medium	Vertical Tube 42 mm 294X630 X350mm	Vertical Tube 42 mm 294X630X 350mm	Vertical Tube 42 mm 378X630X 350mm	Vertical Tube 42 mm 378X630X 350mm	Vertical Tubes 42 mm 2 X 294X630X 350mm	Vertical Tubes 42 mm 2 X 294x630x 350mm	Vertical Tubes 42 mm. 3X 550X550X 500mm
Weight including Fluid	165 kg.	165kg.	220kg.	220kg.	430kg.	430kg.	1170kg.

Dry Weight	44 kg.	44kg.	56kg.	56kg.	80kg.	80kg.	245kg.
Maximum Flow Rate	1000 L/h	1000 L/h	1500 L/h	1500 L/h	3000 L/h	3000 L/h	6000 L/h
Actual Flow Rate	720 L/h	800 L/h	720 L/h	1170 L/h	160 L/h	2580 L/h	4200 L/h
Pump Type	Mono CP 11	FXP1000	Mono CP 11	FXP 1500	Mono CP 25	ASM DS 32	ASM DS 38
External Dimensions							
Height	1195 mm.	1195 mm.	1195 mm.	1195 mm.	1195 mm.	1195 mm.	1580 mm.
Length	1250 mm.	1250 mm.	1250 mm.	1250 mm.	1935 mm.	1935 mm.	2330 mm.
Width	370 mm.	370 mm.	455 mm.	455 mm.	455 mm.	455 mm.	660 mm.
Inlet Diameter	40 mm.	40 mm.	40 mm	40 mm.	40 mm.	40 mm.	80 mm.
Outlet Diameter	50 mm.	50 mm.	50 mm.	50 mm.	50 mm.	50 mm.	100 mm.
Final Filter Bag	1x 100 Micron	1x 100 Micron	2x 100 Micron	2x 100 Micron	2x 100 Micron	2x 100 Micron	4x 100 Micron

4. Appraisal Criteria

This Appraisal Report has been compared against the requirements of the WSAA Specification WSA PS – 810 Separator Systems for Light Liquids (See appendix A).

5. Quality Assurance Requirements

The WSAA product appraisal network accepts system (ISO 9001) and product certification by a Certification Body at the manufacturing site of strategic products to appropriate Australian or internationally recognised standards. The Certification Body shall have relevant accreditation by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) or by an equivalent international accreditation system recognised by JAS-ANZ.

The manufacturer Fox Environmental is not ISO9001:2000 certified at this time.

6. Compliance to the Appraisal Criteria

6.1. Materials of Construction

6.1.1. Separation Tank and Stand

The Separation tank is manufactured from 304 Stainless Steel and is supported by a specifically engineered and constructed 304 Stainless Steel frame. Material are supplied by Fagersta Steel Pty Ltd which is ISO9001:2008 compliant.

6.1.2. Vertical-Tube Coalescing Pack

The Vertical-Tube Coalescing Pack is constructed from Oleophilic Polypropylene, which provides increased efficiency and performance via its enhanced flow, phase separation characteristics and longevity.

6.2. [Access Covers and Lids](#)

The lids that are used for the Fox Environmental product range are manufactured from 304 stainless steel 1.2mm thick on all products with the exception of the FX6000SSD product where the lid is 1.6mm thick.

6.3. [Internal Surface Coating](#)

The internal surface coating of the product range is not specially coated.

7. Performance Requirements

7.1. [Process Description](#)

The Fox Series FX separators are enhanced gravity separators and incorporate a Bio-Tube® filtration media pack to promote coalescing of oil droplets and enhance floatation separation from the water in accordance with Stokes Laws. The design of the tube pack offers a large surface area for the interruption of flow through the unit with the spiral construction of the tube promoting an upward flow of oil particles.

The units will be supplied with a low voltage pump motor control station. There are several options available:

Model X1 – Allows Auto/Manual Pump Control

Model X1IS - Intrinsically Safe Control Station

Model X2 - Provides for a High Level Alarm in the Holding Tank.

Model X2IS - Intrinsically Safe Control Station

Model X3 – Provides a Non-Resetable Run Meter (required by some councils)

Model X3IS - Intrinsically Safe Control Station

All units are manufactured from 304 Stainless Steel as standard and are fully seal welded.

A removable lid ensures that rain or hose water cannot enter the tank in normal circumstances.

The lid is vented and has provision for locking. An option is available for the unit to be manufactured from grade 316 Stainless Steel when they are to be used for extremely aggressive waste or salt water applications.

The basic design philosophy for each model is typical however the physical size, retention time and tube pack mass for each model increases with the treatment rate of the unit.

The Models are designated as follows:

Model FX1000SS 0.28 l/sec (1000 l/hr)

Model FX1500SS 0.42 l/sec (1500 l/hr)

Model FX3000SS 0.85 l/sec (3000 l/hr)

Model FX6000SS 1.7 l/sec (6000 l/hr)

Model FX10000SS..... 2.8 l/sec (10000 l/hr)

Model FX15000SS..... 4.2 l/sec (15000 l/hr)

Each Model will be supplied with a Fox Diaphragm Pump, ASM Diaphragm Pump, or a Mono Helical Rotor Pump (where allowable by Local Authorities). Dual diaphragm pumps may also be supplied where suitable.

7.2. [Effluent quality](#)

Fox Environmental has conducted sampling and testing on 2 samples analyzing for oil & grease, Total Petroleum Hydrocarbons, BTEX, pH and Suspended solids. These test reports have been made available and is included in Appendix B. The report shows a significant reduction in levels of all parameters tested on these samples, however there is no supporting narrative for the testing. A full trial is subject to a future works item (Part 16).

8. Applicability

The Fox Series FX Separator is ideally suited to applications that have the potential to generate waste water containing free floating hydrocarbons in suspension. Typical applications for the separator include but are not limited to the following:

- Vehicle Washdown Areas
- De-greasing Bays
- Mechanical Workshops
- Oil Storage Areas
- Vehicle Hardstand Areas

Correct sizing of the Separator, Pump and Holding Tank and the use of “Quick Break” detergents will provide a system that will treat oily water to a standard that is suitable for discharge into Local Government Tradewaste Disposal Systems.

9. Specifications and Drawings

The product specifications and drawings are included in Appendix C.

10. Warranty

All products that are supplied by Fox Environmental Systems Pty Ltd (Fox) are warranted to the original owner (not necessarily the purchaser) of the equipment in accordance with the following Limited Warranty. The warranty is only valid when the system is operated and maintained in accordance with the manufacturer’s instructions. If service of the system is not carried out on a regular basis the warranty of your system will be affected.

The warranty offered is for the repair or replacement of any part or component manufactured by Fox or their subcontractors that fails due to defects in materials or workmanship for a period of 12 months. To obtain service under this warranty the owner should contact Fox Environmental Systems and advise the nature of their concern, the model and serial number of the unit and the date of

purchase. If required the component must be returned at the senders' expense. A replacement item, which at the discretion of Fox, may be the original component following repair, a reconditioned or new item, will be returned at our expense. Should it be determined that the part is not covered by warranty the owner will be responsible for the payment of any costs involved in the supply of replacement parts, including shipping and handling.

All components supplied under this warranty will be covered by a further warranty equal to the remainder of the original limited warranty or 90 days, whichever is the longer. All components replaced under warranty become the property of Fox Environmental Systems Pty Ltd and may be used for whatever purpose they deem suitable.

The warranty will be void if the equipment is not installed as per manufacturer's instructions. Warranty will also be void if water pressure exceeds 1400 kPa. The warranty is only valid when the system is operated and maintained in accordance with the manufacturer's instructions, and service of the system is carried out on a regular basis. The Commissioning-in report must be completed, signed & returned to Fox Environmental Systems

Note: The use of pipes smaller than the port size of the pumps will void the suppliers' warranty.

This warranty does not cover consumables or any damage arising from improper selection of materials, faulty installation or misuse.

What are Consumables?

1. The final filter bags.

To obtain service under this warranty the owner should contact Fox Environmental Systems Pty Ltd on (07) 5437 8455 or Fax (07) 5437 8488 and advise the nature of their concern, the model and serial number of the unit and date of purchase. If required, the component must be returned to Fox at the senders' expense. A replacement item which at the discretion of Fox may be the original component following repair, a reconditioned or new item will be returned at our expense. Should it be determined that the part is not covered by warranty the owner will be responsible for the payment of any costs involved for the supply of replacement parts, shipping and handling costs.

All components replaced under warranty become the property of Fox Environmental Systems Pty Ltd and may be used for whatever purpose they deem suitable. All components supplied under this warranty will be covered by a further warranty equal to the remainder of the original limited warranty or 90 days, whichever is the longer. Should it be found that the equipment is not being maintained in accordance with the maintenance recommendations provided by Fox Environmental Systems Pty Ltd then the warranty may become void.

11. Installation Requirements

11.1. [Installation Instructions](#)

It is important to ascertain the requirements of the Local Authority responsible for the installation of pre-treatment systems to ensure that the proposed installation will fulfill their individual requirements.

At this stage it is assumed that the Holding Tank has been installed and a bunded concrete pad has been provided for the Separator Installation. Provision should be made for this area to drain back to the Holding Tank.

Please refer to the drawings relevant to the Fox Oil/Water Separator and pump being used.

- ☐ Model FX 1000 SS A4-INST-1020
- ☐ Model FX 1500 SS A4-INST-1021
- ☐ Model FX 3000 SS A4-INST-1022
- ☐ Model FX 6000 SS A4-INST-1023
- ☐ Model FX 10000 SS A4-INST-1025
- ☐ Model FX 15000 SS A4-INST-1026

Refer to the relevant drawings for the Control Box connection details.

- ☐ Model X1 A4-INST-X1
- ☐ Model X2 A4-INST-X2
- ☐ Model X3 A4-INST-X3
- ☐ Model X1IS A4-INST-X1IS
- ☐ Model X2IS A4-INST-X2IS

Following is a step by step procedure for the installation of the Separator, Pump and Control Box. Careful attention should be paid to the items marked ' as they will affect either the operation of the unit or the safety of personnel.

1. Install the pump suction line in the holding tank with a barrel union to enable dismantling via the manhole for service. Install a foot valve if a Mono pump is being used. No foot valve is required for the diaphragm pumps as they are self priming.
2. Remove the Separator lid; this is done by releasing the over-centre lock, lifting and sliding the cover away from the locking end. When the lip of the cover clears the lip of the tank the lid can be removed. Supplied loose inside the unit are the legs for the stand, waste oil extension pipe, gate valve(s) for the separator tank and the Holding Tank float switch(es).
3. Lift the tank out of the stand. Fit the legs onto the stand, finger tightening the locking bolts.
4. Place the stand in position. To ensure correct operation of the Separator, the unit must be installed in a level plane in all directions. 'Using a builder's level, adjust the legs so that the stand is level in both planes then tighten the locking screws.
5. Using Dynabolts, Chemical Anchors or other suitable corrosive-resistant fixings, anchor the stand utilising the pre-drilled 10 mm dia. holes in the feet. Re-check the levels and adjust if necessary.
6. Fit the tank into the stand.
7. Fit the gate valve to the tank drain using Teflon tape or suitable thread sealant. Make sure that the valve is closed.
8. Install the waste oil extension pipe to the skimmer outlet. The pipe should not be glued to the adaptor to facilitate removal of the waste oil collection vessel.

9. Place the pump in position and fix to the concrete pad using corrosive-resistant fixings. 'Electrical regulations require that the pump motor is to have a 500mm clearance from the separator unit and holding tanks.
10. Install interconnecting pipework between the pump and the separator inlet. Barrel unions should be installed on either side of the pump to facilitate easy removal for servicing. Install sample points as required by the Local Authority.
11. Connect the outlet pipe of the separator to the trade-waste (sewer) system. Install sample points as required by the Local Authority. 'Connections to sewer system must be made by a licensed plumbing contractor and with the approval of Local Authorities.
12. Supply and install a waste oil collection vessel. The waste oil collection vessel must be clear and have provision for a screw cap to be fitted.
13. Mount the Control Box adjacent to the pump and near a 240V 10Amp GPO. 'Any electrical work required must be carried out by a licensed electrician.
14. Install Activation Float Switch in the Holding Tank. Attach to the suction line using heavy duty cable ties and ensure that sufficient lead is left to enable removal of the suction line for servicing. Position to ensure clearance from bottom of tank as per installation drawing. Draw cable through 32mm conduit to Control Box location. The float operates on low voltage and is connected to the terminal strip in the Control Box via the gland in the bottom of the unit. Refer to the Control Box installation drawing for connection details. For Model X2 & X3 Control Boxes, repeat procedure for High Level Float Switch.
15. Plug the Control Box into the GPO and the pump power lead into the Control Box outlet.
16. Fill the Separator to the level of the discharge weir. Ensure that the level in the Holding Tank is well above the pump pick up point before testing. If a Mono pump is being installed it must be primed with water.
17. Select the manual run position on the Control Box and turn the power on at the GPO. The pump will start and transfer water into the Separator. Ensure that the Oil Skimmer is above the water level. The top section of the skimmer pipe slides out from the main pipe. 'When the water flow through the Separator has stabilised the Oil Skimmer should be adjusted to 3 mm above the water level with the pump running.
18. The Separator is now ready for work. Turn the Control Box Selector Switch to the Auto position.



11.2. [Training](#)

It is a requirement that the oil separators be installed by a licensed plumber after providing design etc. to the relevant local authority.

Most plumbers are generally competent to carry out such installations keeping the relevant plumbing standards etc in mind but Fox Environmental supply with each unit, full installation and maintenance manual complete with drawings.

Fox staff or distribution staff are available to offer advice or training as required.

Final inspections are carried out by Fox staff or approved Distributor Representatives after each installation when operation and a visual performance levels are checked.

At this stage responsible on-site people are trained in the operation and maintenance of the unit.

In the event that outside contractors are used for the maintenance of the unit, Fox staff ensures that these contractors are trained and competent in the operation and maintenance programme.

Training is not required by a Registered Training Organisation although they may do some form of training regarding Oil Separators as part of certain Nationally Accredited Courses e.g. Motor Mechanic.

Fox Environmental and or its distribution network work together with RTO's (including TAFE Colleges) on a regular basis.

As members of the AHSCA, SIA, AWA and the Master Plumbers Association, Fox Environmental attend regular meetings of these organizations and provide training as required.

Fox staff and Distributors also have regular contact with Council Trade Waste Officers and Plumbing Inspectors and run seminars from time to time.

12. Operation and Maintenance

Proper maintenance of the Oil/water Separator and associated equipment will ensure that the unit continues to perform the function for which it has been installed. The Separator will provide effluent of a quality acceptable for release to sewer at the approved Flow rate. Increasing the flow rate beyond this will affect the efficiency of the system. 'Quick Break' detergents must be used for the System to operate efficiently. Solvent based detergents may affect the warranty.

Documentation of all pre-treatment facility operations, including products and residues removed should be kept in accordance with Australian Standards.

Maintenance of the unit should be undertaken at the following regular intervals:-

- ☐ Weekly
- ☐ Quarterly

Note: These are the recommended maintenance intervals for typical site requirements. The period should be reduced in accordance with the volumes and pollutant loadings of the effluent being treated.

12.1. Recommended Weekly Maintenance.

1. Remove the Separator lid; this is done by releasing the over-centre lock, lifting and sliding the cover away from the locking end. When the lip of the cover clears the lip of the tank the lid can be removed.
2. Inspect the Separator and ensure that there is no floating debris that can create a blockage.
3. Check the level in the waste oil collection vessel. If full, remove the extension pipe from the adaptor and place a screw cap on the oil container. Arrange for proper disposal of the waste.
4. Inspect and clean all collection points and silt baskets as required.

5. Turn the Separator Controller selector switch to manual and ensure that the pump starts, that the effluent flow through the unit is steady and that the Oil Skimmer pipe is approximately 3 mm above water level.
6. Check the flow through the final filter bags.
7. Return the selector switch to Auto.
8. Inspect the unit and all pipe connections for leaks or physical damage that could affect the operation.
9. Replace the Separator lid and lock if required.

12.2. [Quarterly Service.](#)

Fox Environmental Systems recommend that the quarterly service to the unit is performed by a qualified service technician. All Fox recommended Service agents are able to provide a Fox Service Authorisation Number.

1. Perform steps 1-4 & 8 above.
2. Isolate the Separator Controller at the GPO and remove the plug.
3. Adjust the Oil Skimmer to a point just below the water level to remove any build up of oil on the water surface.
4. Drain the sludge from the hopper via the gate valve into a suitable container and dispose of in a proper method.
5. Drain any remaining effluent from the Tank back to the Holding Tank.
6. Remove the Tube Pack from the unit and clean thoroughly. Ensure that any run-off is returned to the Holding Tank.
7. Thoroughly clean the Separator internally.
8. Refit the tube pack. Ensure that the sludge hopper is fully covered to stop bypass occurring.
9. Inspect the final filter bags and replace as necessary.
10. Lift the Oil Skimmer pipe to a point above the water level and fill the unit with clean water.
11. Check the level of sludge in the Holding Tank. If necessary arrange for the tank to be pumped out and the contents disposed of.

12. Check operation of the pump float switch. Be sure that the float is free to move with the water level and that the contacts change over when the float is lifted.

Note: The Holding Tank of a trade-waste system is a confined space and must not be entered without proper precautions being observed. In a properly installed system all regular maintenance activities should be able to be carried out through the access hole in the tank.

1. Prime the Pump (if required) and check that the water level in the Holding Tank is sufficient to run the unit.

2. Plug the Separator Controller into the GPO and turn on. If the pump does not start automatically, lift the float in the Holding Tank (use a wire hook or similar) and the pump should run. Let the float down; the pump will shut off automatically when the low level is reached.

3. When the effluent flow through the unit becomes steady adjust the Oil Skimmer to 3 mm above the water level.

4. Replace the Separator Lid and lock if required.

12.3. [Trouble Shooting and Fault Finding](#)

Note: Electrical fault finding must be done by a licensed electrical contractor.

Symptom Cause Remedy

No flow to Separator.

- Mono pump not primed
- Pump diaphragm damaged.
- Pump check valve faulty.
- Suction pipe below sludge level.
- Suction pipe blocked.
- Foot valve blocked.
- Prime pump
- Service pump.
- Service check valves.
- Pump holding tank out.
- Remove obstructions.
- Service foot valve.

Pump not running. • Low level in Holding Tank

- Float switch jammed.
- Controller switched Off.
- Motor overload tripped.
- Pump runs with rising float. Lift float.
- Ensure switch is free to lift with water level.
- Check power is on, & selector switch is on Auto or Manual. Return to Auto for running.
- Reset overload.

System will not switch on.

- Float switch jammed.
- No power to Controller.
- No power to pump.
- Pump running but not pumping.
- Ensure float switch is free to lift with water level.
- Check power is on, & selector switch is on Auto or Manual
- Check electrical connections and ensure power is available at pump.
- Refer “No flow to Separator” above.

System will not switch off.

- Float switch jammed.
- Pump not pumping.
- Ensure switch is free to fall with water level.
- Refer “No flow to Separator” above.

Water in Waste oil vessel.

- Oil skimmer set too low. • Adjust skimmer with pump running to 3mm above water level.

Oil in discharge stream.

- Oil skimmer set too high.
- Incorrect detergent or degreaser used.
- Excessive heavy oil loads introduced into waste stream.
- Adjust skimmer with pump running to 3mm above water level.
- Use only quick break detergents.
- Pure oil should not be run through the unit.

Pump Motor overload trips continuously.

- Motor starts/stops too frequently
- Power supply voltage too low or too high.
- Holding Tank too small.
- Floats set incorrectly.
- Check voltage.

13. Identification

Fox Environmental product range is identified using an identification plate which is attached to the separator at the inlet end below the top rim. An example of an identification plate follows below.

	<h2>Fox Oil/Water Separator</h2>								
	Model No: Serial No: Volume: Authorisation No: Weight of Lid: Pump Model No: Rating: Pump Serial No:	<table border="1"> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> <tr><td> </td></tr> </table>							
Unit 2, 8 Dual Avenue, Warana, Qld, Australia, 4575. Phone: (07) 5437 8455 Fax: (07) 5437 8488 www.foxenviro.com.au									

14. Outcomes of WSAA Network Review

- 14.1. ISO 9001 quality standard is now revised to the year 2008, not 2000. Are Fox Environmental intending to update the certification to ISO9001:2008?

Products sourced from supplier with 150.9001.2008 certification. Updated certificate has been requested.

- 14.2. (page 7, **7.2 Effluent Quality**):

- 14.2.1. Agree that “there is no supporting narrative for the testing”. On Fri 29/05/2009 3:15 PM the proponent (David Dickson, Fox Environmental) was e-mailed a suggested draft process validation methodology, quality sampling techniques, data control, etc. for their consideration.

Compliance testing will be completed as a future works item

- 14.2.2. Not sure why pH would go from 4.5 influent to 7.8 in effluent (for Separator 1500 sample)?

Compliance testing will be completed as a future works item

- 14.2.3. One data sample for either pre-treatment device is not sufficient enough to draw sound scientific conclusions on the quality performance of either device. As a suggested minimum, at least three separate trial days (for the models FX1000SS and FX6000SSD devices (which bracket the device product range)) should be run. As already provided, INLET and OUTLET samples are to be taken under normal operating conditions.

Compliance testing will be completed as a future works item

- 14.2.4. The temperature of the *oil / water medium* should also be noted as this shall have a direct impact on the physical chemistry of the oil/water interaction, and hence quality of performance of the pre-treatment devices.

Noted.

- 14.3. (page 10, **11.1 Installation Instructions**, 16.) – Suggest that “**Fill the Separator to the level...**” be amended to “**Fill the Separator with clean water to the level...**” to avoid *potential* blinding of the filter bags (where installed). Solution filters generally require pre-wetting prior to effective use.

Manufacture of the filter bags suggests clean or dirty water is ok.

- 14.4. More data needed on product performance.

Compliance testing will be completed as a future works item

- 14.5. Drawing does not contain sufficient details (i.e., levels, pipe size, vent arrangements, etc..)

Drawings changed to reflect water level, separator inlet & outlet sizes reflect pipe sizing and are referred to in the separator specification. Vents are noted in the Separator specification.

- 14.6. Confirmation of the product meeting ANZ standards required

See page 27 for referral to AS/NZ 4494.1998

- 14.7. Insufficient detail on the compliance plates (generic title, date of manufacture, etc) and no mention about compliance plate for covers. Must conform with the WSAA Specification.

WSAA does not request date of manufacture on the compliance plate. Compliance plate has been updated.

- 14.8. Limited Warranty (12 months). Warranty must extend to 5 years

Separator tank, lid, VTC tube filter & stand are covered by a 5 year manufactures warranty, all related products including pumps, controllers and float switches are covered by a 12 month warranty.

14.9. Reference to use of detergents and no MSD - detergents are not accepted

Noted

14.10. Drawing & Specs details are not uniform throughout

Specification drawings have been updated

14.11. A minimum of two authorised service technicians/agents is desired to give customers choice and to bolster continuity of service. What are the servicing arrangements offered by the supplier?

Fox offers a service Division to its clients. It also offers to train plumbers, agents and Technicians in servicing of its equipment.

14.12. Another concern is the maintenance regime. Weekly and Quarterly maintenance is required. The maintenance procedures are very detailed and would be a high impost on any business to adhere too. Our concern is from experience these types of apparatus' tend to get left unattended for months if not years on end rendering them virtually ineffective.

The “maintenance regime” has been written in accordance with current trade waste policies & guidelines set out by councils in QLD & NSW.

14.13. If these models become obsolete will parts still be available in the long term?

Yes parts will be available to support any superseded models

14.14. What is the life expectancy of the apparatus?

The separator tank & stand is made of 304 stainless steel, we don't expect them to perish.

15. WSAA Member and Field Reports

At the time of publication a WSAA member field report was not available and this item has been referred as a future works and referenced in part 16 Future Works.

16. Future Works

16.1. It is a requirement that within 2 years of the publication of this report that a report be provided for inclusion in this appraisal detailing the outcomes of effluent quality testing in accordance with WSA PS 810 (attached as an appendix)

16.2. It is a requirement that within 12 months of the publication of this report that a WSAA member field report is provided for inclusion in this report .

17. Discussion

Examination of all of the submitted documented material provides an expectation that the products described here in sourced and distributed by Fox Environmental Pty Ltd are 'fit for purpose' in the applications described in this report subject to future works items.

18. Report Recommendation

It is recommended that WSAA Members and Associates, subject to any specific requirements of the Member or Associate, accept or authorise the Fox Environmental product range as detailed in this report for use in sewer networks provided design, installation, acceptance testing and commissioning and maintenance are in accordance with relevant WSAA Codes, WSAA Member Integrated Codes, and the manufacturer's requirements.

19. Disclaimer

This Appraisal Report is issued by the Water Services Association of Australia Ltd. on the understanding that :

- a) This appraisal applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this appraisal.
- b) To maintain the recommendations of this appraisal any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the appraisal report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.
- c) WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.
- d) The following information explains a number of very important limits on your ability to rely on the information in this Product Appraisal Report. Please read it carefully and take it into account when considering the contents of this Product Appraisal Report
- e) Any inquiries regarding this report should be directed to the Appraisal Project Manager, Grant Leslie, Phone: 02 9290 3655 - E-mail grant.leslie@wsaa.asn.au

19.1. Issue of Report

This Product Appraisal Report (Report) has been published and/or prepared by the Water Services Association of Australia, Inc and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher[s] and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

19.2. Limits on Reliance on Information and Recommendations

19.2.1. Disclaimer of liability

Neither the Publisher[s] nor any person involved in the preparation of the Report accept[s] any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do any thing) relating in any way to the Report or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Report or any errors or omissions.

19.2.2. Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith. However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher[s].

This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it (Product). The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

19.3. [No updating](#)

Neither the Publisher[s] nor any person involved in the preparation of this Report [has][have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher[s] or the Product or any other matter.

19.4. [No warranty](#)

The Publisher[s] do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

WATER SERVICES ASSOCIATION of Australia

PRODUCT SPECIFICATION

WSA PS 810

Separator Systems for Light Liquids

810.1 SCOPE

This specification covers Separator Systems for Light Liquids.

810.2 DESIGN REQUIREMENTS

- a) The system must comply with AS3500:2003 National Plumbing and Drainage Code where appropriate
- b) The system must comply with AS/NZ 4494:1998 Discharge of commercial and industrial liquid waste to sewer – General performance requirements.
- c) As a minimum the separator system must consist of a vented pit that has a minimum working volume of 500L and a separation device (such as a Coalescing Plate Interceptor (CPI), Hydro cyclone Separation System (HSS) or Vertical Gravity Separator (VGS)), a waste collection tank and a non emulsifying pump.
- d) Separator systems are required to have adequate cross flow ventilation to prevent the growth of mould and fungus and to prevent the build up of gases.
- e) A stilling zone before or after the inlet, or some other means of preventing turbulence in the tank containing the media
- f) flow must be prevented from channelling around, over or under the contact media (plate pack, tube pack etc)
- g) the hopper sludge valve and a handle of the separator system to be made of metal
- h) Concrete separator systems must comply with AS3735:2001 Concrete structures for retaining liquids. Written conformation from a suitably qualified engineer must accompany the application.
- i) Separator systems designs of other materials of manufacture must be certified in writing by a suitably qualified structural engineer.
- j) Lids and covers must comply with AS 3996:2006 Access covers and grates, Class A Covers
- k) Detailed drawings must be supplied with the application
- l) Interior surfaces of concrete and concrete fibre grease separator systems are to be coated so that the separator system is protected from corrosion/erosion by the waste contents and mechanical damage during cleaning. The coating must have a minimum 5 year warranty.

810.3 PERFORMANCE REQUIREMENTS

- a) Treated waste water from the separator system must meet the following discharge standards
 - a. Total Grease 50 mg/L
 - b. Petroleum Hydrocarbons (flammable) 10 mg/L (includes BTEX)
 - c. Benzene 0.1mg/L
 - d. Suspended Solids 200 mg/L
 - e. Flammability <5% LEL (hexane) at 25°C
 - f. pH 7 – 10

File Name: WSA_PS_810_08

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Issue 01 --- May 2008

- b) Testing of the separator system must be verified by a WSAA member and conducted by an independent third party as follows;
 - a. the applicant is to submit details of the proposed sites and sampling program to the appropriate WSAA member prior to the commencement of the test
 - b. testing must be conducted at a minimum of three sites
 - c. seven separate full production days are to be spread over a six-week period and tested
 - d. composite sampling must be conducted at two points, the separator inlet and separator outlet.
 - e. Samples are to be analysed for total grease, petroleum hydrocarbons (including BTEX) suspended solids and pH using analytical methods as specified by the WSAA member supervising the test.

810.4 SUPPORTING INFORMATION

Your application should address the following in accordance with the appraisal application guideline.

- a) Specification Drawings including all of the following
 - a.1. Detailed scale drawings of every component in the product in sufficient detail to permit accurate determination of all relevant volumes, internal/external diameters and air spaces. This is also to include a size and type of pipe connection.
 - a.2. All dimensions are to be in millimetres.
- b) Provide full details of the separator venting arrangements.
- c) Full details of the excavation and backfill and requirements.

Full specifications of access covers and lids must be provided. The minimum requirement is as follows:

 - a. Material of construction
 - b. Dimension
 - c. Weight. Each access cover must have the weight of the cover displayed. The information must be permanently attached such that each number is no smaller than 100mm in height
 - d. Compliance with the requirements of AS 3996:2006 Access covers and grates, Class A (provide evidence)
 - e. In-ground access covers are to include installation instructions in the manual supplied to the installer/purchaser.
 - f. Access covers shall not allow the ingress of storm water or the escape of gases. On the air or is in this exuberant as
 - g. Chequer plate lids are only to be used when the arrestor is installed in non trafficable areas.
- d) Full details of the grease arrestor cleaning procedure, such that all liquid can be pumped out and the solids scraped to remove accumulated material.
- e) Provide an example of the compliance plate that will be fitted to each unit.

The compliance plate must be robust and durable and fitted to each unit produced. It must be placed in a location where it will remain visible after installation, and legible for the life of the unit.

The compliance plate must be fitted to the grease arrestor before leaving the factory. The compliance plate must contain the following information:

- a. Brand
- b. contact phone number of manufacturer
- c. generic title
- d. model number
- e. volume in litres
- f. serial number
- g. WSAA, product appraisal number.

Documentary evidence of all aspects of this technical specification will be required to be provided for consideration by the WSAA product appraisal committee. The product appraisal committee is made up of technical experts drawn from WSAA members.



P/O Box 3160 Yeronga 4104
40 Reginald St
Rocklea, Qld 4106

Attention: Erica Harris

Client Order No.:

Ph: 07 3286 5557

Client: Environmental Separator Maintenance
PO Box 3002

Batch Reference No.: J-1010-286

Fax:

Job Description: Influent & Effluent Analysis for Separator
1500

VICTORIA POINT WEST, QLD 4165

Chemical Analytical Results

Page 1 of 1

Sample Reference		J-1010-286-01	J-1010-286-02
Sample Point		Separator 1500 Effluent	Separator 1500 Influent
Date Collected		13/10/2010	13/10/2010
Date Received		13/10/2010	13/10/2010
Date Testing Completed		20/10/2010	20/10/2010
GC030	Benzene - Water	6.5 µg/L	4900 µg/L
	Ethyl Benzene	12 µg/L	120000 µg/L
	O - Xylene	27 µg/L	59000 µg/L
	P, M - Xylene	55 µg/L	140000 µg/L
	Toluene - Water	230 µg/L	200000 µg/L
	TPH water C6-C9	430 µg/L	2400000 µg/L
GC040	TPH water C10-C14	640 µg/L	130000000 µg/L
	TPH water C15-C28	870 µg/L	190000000 µg/L
	TPH water C29-C36	< 50 µg/L	1800000 µg/L
WC405.31	Total Oil & Grease	26 mg/L	6000 mg/L
WP090.	pH Value @ 25°C	7.8	4.5
WP100.X	Suspended Solids	< 1.0 mg/L	13000 mg/L

Notes:

Samples are disposed of 14 days after completion of testing.
Results reported on an 'as received' basis

Note: All tests covered by NATA accreditation except where marked *

Authorised for release:

FRANKIE LOOK

Date: 21/10/2010



NATA Corporate Accreditation Number: 1500
Chemical Laboratory Corporate Site Number: 1493
Microbiological Laboratory Corporate Site Number: 1706
NATA ENDORSED TEST REPORT

This document is issued in accordance with
NATA's accreditation requirements. Accredited for
compliance with ISO/IEC 17025.

...Helping you make good clean water.

Attention: Erica Harris

Client Order No.:

Ph: 07 3286 5557

Client: Environmental Separator Maintenance
PO Box 3002

Batch Reference No.: J-1010-287

Fax:

Job Description: Influent & Effluent Analysis for Separator
3000

VICTORIA POINT WEST, QLD 4165

Chemical Analytical Results

Page 1 of 1

Sample Reference		J-1010-287-01	J-1010-287-02
Sample Point		Separator 3000 Effluent	Separator 3000 Influent
Date Collected		13/10/2010	13/10/2010
Date Received		13/10/2010	13/10/2010
Date Testing Completed		20/10/2010	20/10/2010
GC030	Benzene - Water	< 1 µg/L	< 1 µg/L
	Ethyl Benzene	< 1 µg/L	1.3 µg/L
	O - Xylene	1.1 µg/L	6.2 µg/L
	P, M - Xylene	< 2.0 µg/L	10 µg/L
	Toluene - Water	4.1 µg/L	8.8 µg/L
	TPH water C6-C9	44 µg/L	310 µg/L
GC040	TPH water C10-C14	< 50 µg/L	800 µg/L
	TPH water C15-C28	< 100 µg/L	1500 µg/L
	TPH water C29-C36	< 50 µg/L	570 µg/L
WC405.31	Total Oil & Grease	< 10 mg/L	29 mg/L
WP090.	pH Value @ 25°C	6.8	7.0
WP100.X	Suspended Solids	110 mg/L	900 mg/L

Notes:

Samples are disposed of 14 days after completion of testing.
Results reported on an 'as received' basis

Note: All tests covered by NATA accreditation except where marked *

Authorised for release:



FRANKIE LOOK

Date: 21/10/2010

...Helping you make good clean water.



NATA Corporate Accreditation Number: 1500
Chemical Laboratory Corporate Site Number: 1493
Microbiological Laboratory Corporate Site Number: 1706

NATA ENDORSED TEST REPORT

This document is issued in accordance with
NATA's accreditation requirements. Accredited for
compliance with ISO/IEC 17025.

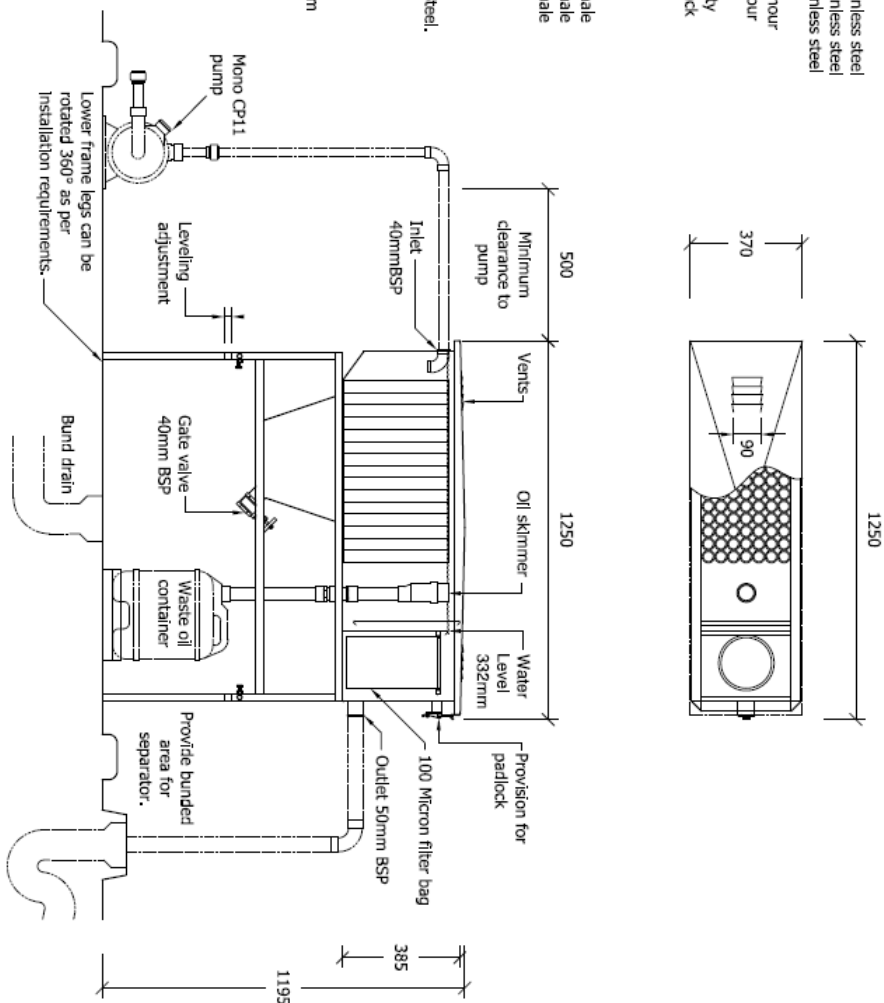
Specification FX1000SS Oil/ Water Separator

SPECIFICATIONS

Material - Tank	1.6mm 304 stainless steel
Lid	1.2mm 304 stainless steel
Stand	25mm SHS stainless steel
Maximum flow rate	1000 litres per hour
Actual flow rate	720 litres per hour
Pump type	Mono CP11
Separation process	Enhanced gravity
Coalescing medium	Vertical tube pack
Weight (empty)	44 kg
Weight (full)	165kg
Volume	120 litres net
Polishing filter	100 micron bag
Inlet	40mm BSP Female
Outlet	50mm BSP Female
Gate Valve	40mm BSP Female

Note:
For marine applications Separator can be supplied in 316 or 445m Grade Stainless Steel.

VTC Filter pack Specification	
Tube	42 mm Dia.
Block Size	294x630x350mm
Volume	0.06 m ³
Surface Area	16 m ²



This is a schematic representation only. Site size and gradient to engineers details as arranged by customer. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relative authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relative Local Authorities before installation.

This Drawing and design is the property of Fox Environmental Systems Pty Ltd. It must not be used for any other purpose than that for which it was issued.

Project
Fox FX1000SS Specification

Drawing Title
FX1000SS Oil/ Water Separator

Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1020

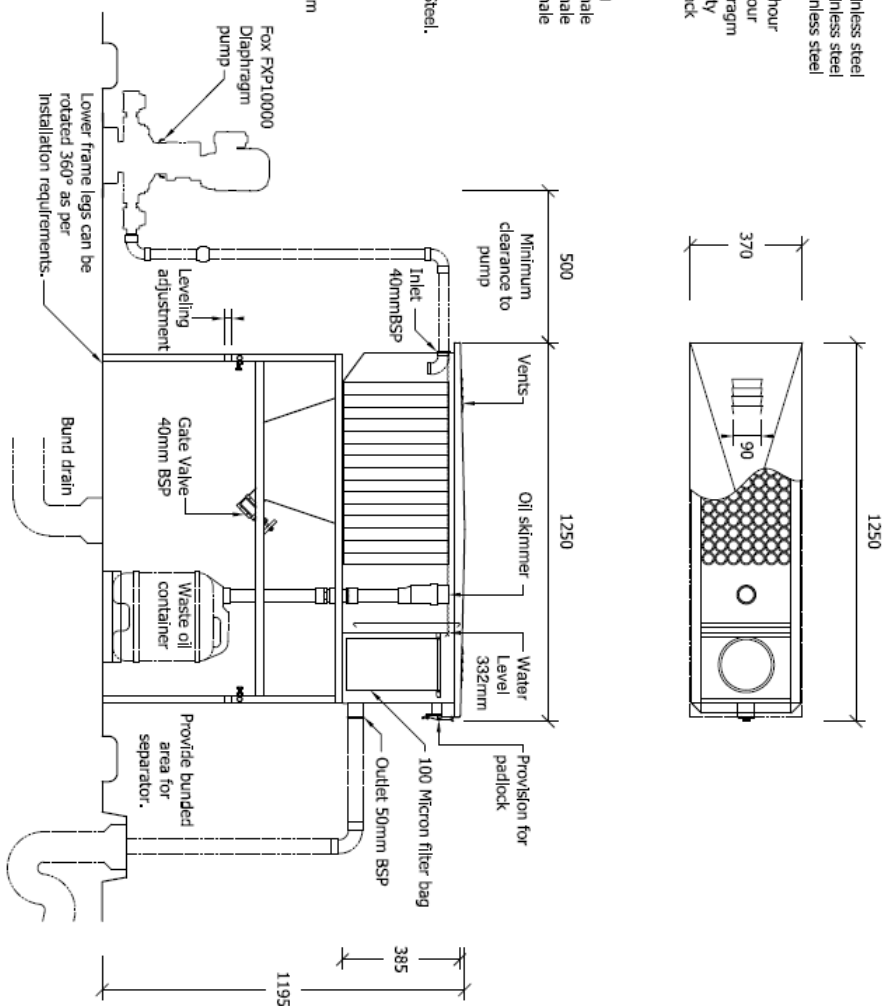
Specification FX1000SS-D Oil/Water Separator

SPECIFICATIONS

Material - Tank	1.6mm 304 stainless steel
Ltd	1.2mm 304 stainless steel
Stand	25mm SHS stainless steel
Maximum flow rate	1000 litres per hour
Actual flow rate	800 litres per hour
Pump type	FXP1000 Diaphragm
Separation process	Enhanced gravity
Coalescing medium	Vertical tube pack
Weight (empty)	44 kg
Weight (full)	165kg
Volume	120 litres net
Polishing filter	100 micron bag
Inlet	40mm BSP Female
Outlet	50mm BSP Female
Gate Valve	40mm BSP Female

Note:
For marine applications Separator can be supplied in 316 or 445m Grade Stainless Steel.

VTC Filter pack Specification	
Tube	42 mm Dia.
Block Size	294x630x350mm
Volume	0.06 m³
Surface Area	16 m²



This is a schematic representation only. Site size and gradient to engineers details as arranged by customer. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relative authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relative Local Authorities before installation.

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Project	Fox FX1000SS-D Specification
Drawing Title	FX1000SS-D Oil/Water Separator
Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1020

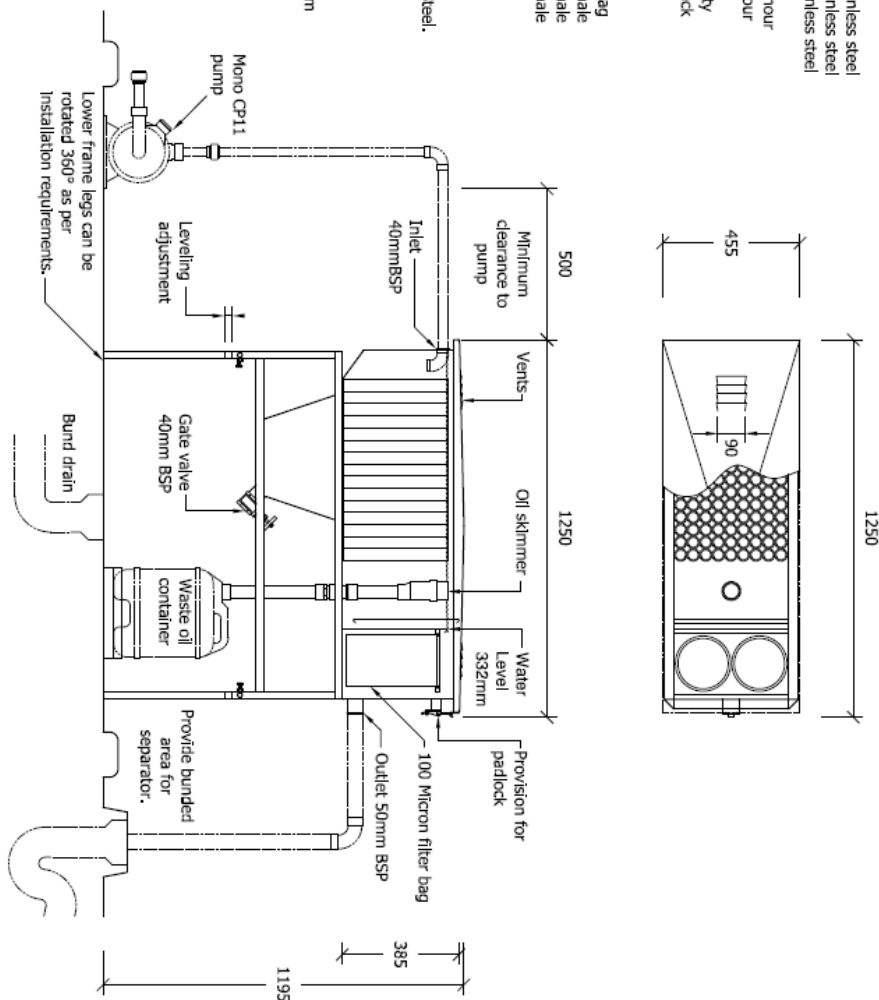
Specification FX1500SS Oil/ Water Separator


SPECIFICATIONS

Material - Tank	1.6mm 304 stainless steel
Lid	1.2mm 304 stainless steel
Stand	25mm SH-S stainless steel
Maximum flow rate	1500 litres per hour
Actual flow rate	720 litres per hour
Pump type	Mono CP11
Separation process	Enhanced gravity
Coalescing medium	Vertical tube pack
Weight (empty)	56 kg
Weight (full)	220 kg
Volume	160 litres net
Polishing filter	2x100 micron bag
Inlet	40mm BSP Female
Outlet	50mm BSP Female
Gate Valve	40mm BSP Female

Note:
For marine applications Separator can be supplied in 316 or 445m Grade Stainless Steel.

VTC Filter pack Specification	
Tube	42 mm Dia.
Block Size	378x630x350mm
Volume	0.08 m ³
Surface Area	21 m ²



 <p>This is a schematic representation only. Site size and gradient to engineers details as arranged by customers. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relative authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relative Local Authorities before installation.</p> <p>This Drawing and design is the Property of Fox Environmental Systems Pty Ltd. It must not be used for any other purpose than that for which it was issued.</p>	
Project	Fox FX1500SS Specification
Drawing Title	FX1500SS Oil/ Water Separator
Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1021

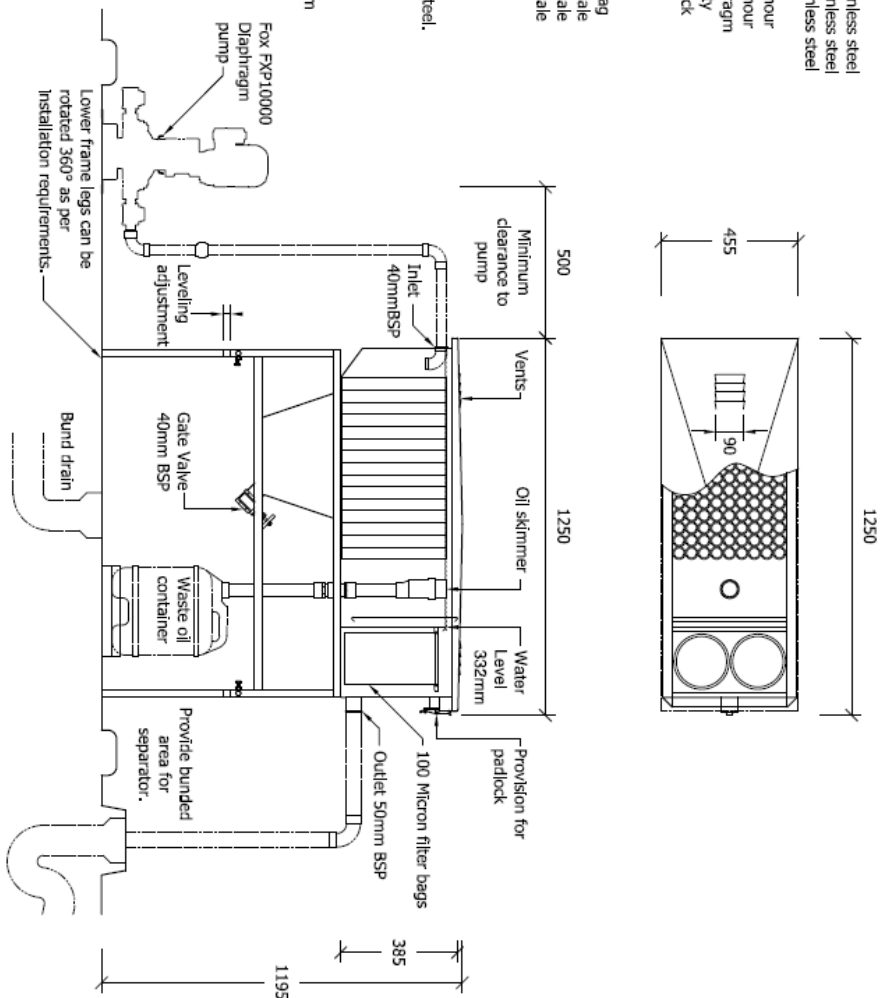
Specification FX1500SS-D Oil/Water Separator

SPECIFICATIONS

Material - Tank	1.6mm 304 stainless steel
Lid	1.2mm 304 stainless steel
Stand	25mm SHS stainless steel
Maximum flow rate	1500 litres per hour
Actual flow rate	1170 litres per hour
Pump type	FXP1500 Diaphragm
Separation process	Enhanced gravity
Coalescing medium	Vertical tube pack
Weight (empty)	56 kg
Weight (full)	220 kg
Volume	160 litres net
Polishing filter	2x100 micron bag
Inlet	40mm BSP Female
Outlet	50mm BSP Female
Gate Valve	40mm BSP Female

Note:
For marine applications Separator can be supplied in 316 or 445m Grade Stainless Steel.

VTC Filter pack Specification	
Tube	42 mm Dia.
Block Size	378x630x350mm
Volume	0.08 m ³
Surface Area	21 m ²



This is a schematic representation only. Site size and gradient to engineers details as arranged by customers. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relative authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relative Local Authorities before installation.

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Project
Fox FX1500SS-D Specification

Drawing Title
FX1500SS-D Oil/Water Separator

Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1021

Specification FX3000SS Oil/ Water Separator

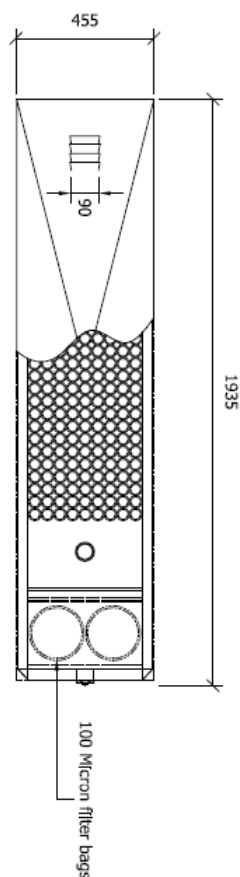
SPECIFICATIONS

Material - Tank
Lid
Stand

1.6mm 304 stainless steel
1.2mm 304 stainless steel
25mm SHS stainless steel

Maximum flow rate
Actual flow rate
Pump type
Separation process
Coalescing medium
Weight (empty)
Weight (full)
Volume
Polishing filter
Inlet
Outlet
Gate Valve

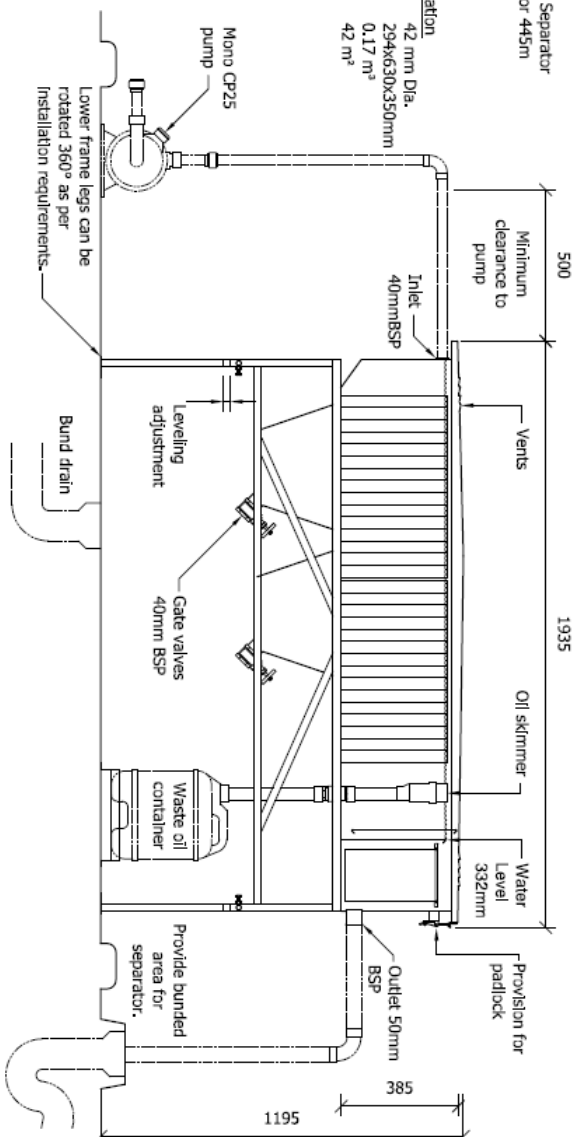
3000 litres per hour
1650 litres per hour
Mono CP25
Enhanced gravity
Vertical tube pack
80 kg
430 kg
350 litres net
2x100 micron bag
40mm BSP Female
50mm BSP Male
2x40mm BSP Male



Note:
For marine applications Separator
can be supplied in 316 or 445m
Grade Stainless Steel.

VTC Filter pack Specification
Tube
Block Size x 2
Volume
Surface Area

42 mm Dia.
294x630x350mm
0.17 m³
42 m²



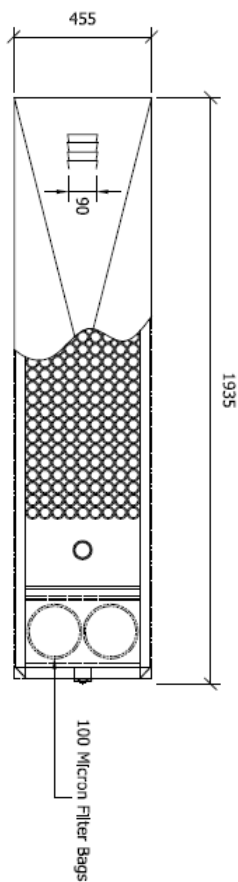
This is a schematic representation only. Site size and gradient to engineers details as arranged by customer. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relevant authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relevant Local Authorities before installation.
The Drawing and design is the property of Fox Environmental Systems Pty Ltd. It must not be used for any other purpose than that for which it was issued.

Project	
Fox FX3000SS Specifications	
Drawing Title	
FX3000SS Oil/ Water Separator	
Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1022

Specification FX3000SS-D Oil/ Water Separator

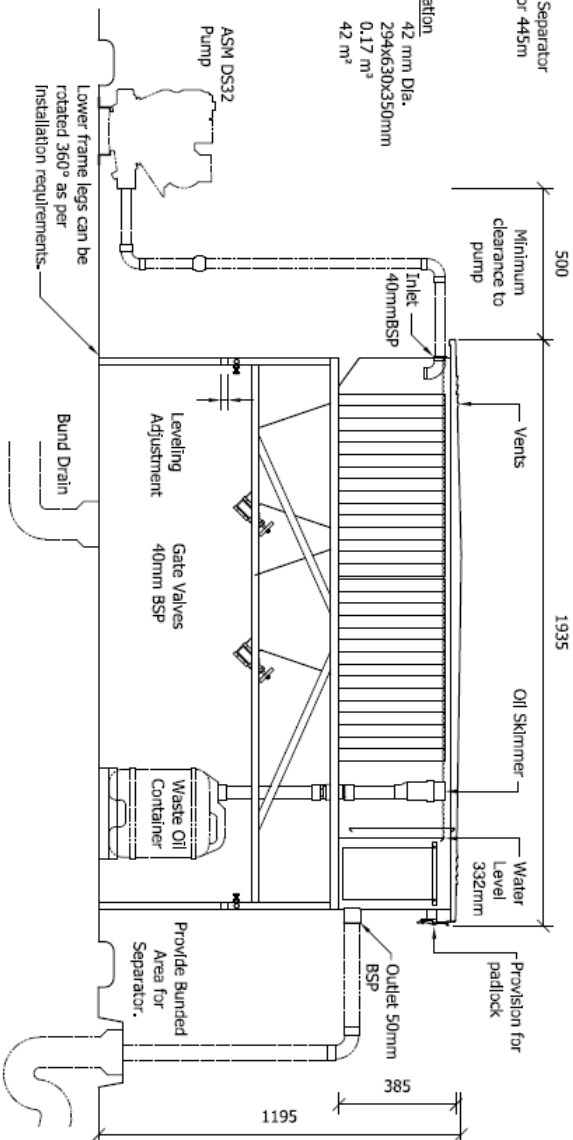
SPECIFICATIONS

Material - Tank	1.6mm 304 stainless steel
Lid	1.2mm 304 stainless steel
Stand	25mm SHS stainless steel
Maximum flow rate	3000 litres per hour
Actual flow rate	2580 litres per hour
Pump type	ASM DS32
Separation process	Enhanced gravity
Coalescing medium	Vertical tube pack
Weight (empty)	80 kg
Weight (full)	430 kg
Volume	350 litres net
Polishing filter	2x100 micron bag
Inlet	40mm BSP Female
Outlet	50mm BSP Female
Gate Valve	2x40mm BSP Male



Note:
For marine applications Separator
can be supplied in 316 or 445m
Grade Stainless Steel.

VTC Filter pack Specification	
Tube	42 mm Dia.
Block Size x 2	29x4630x350mm
Volume	0.17 m ³
Surface Area	42 m ²



This is a schematic representation only. Site size and gradient to engineers details as arranged by customer. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relative authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relative Local Authorities before installation.

This Drawing and design is the Property of Fox Environmental Systems Pty Ltd. It must not be used for any other purpose than that for which it was issued.

Project	
Fox FX3000SS-D Specification	
Drawing Title	
FX3000SS-D Oil/ Water Separator	
Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1022

Specification FX6000SS-D Oil/ Water Separator

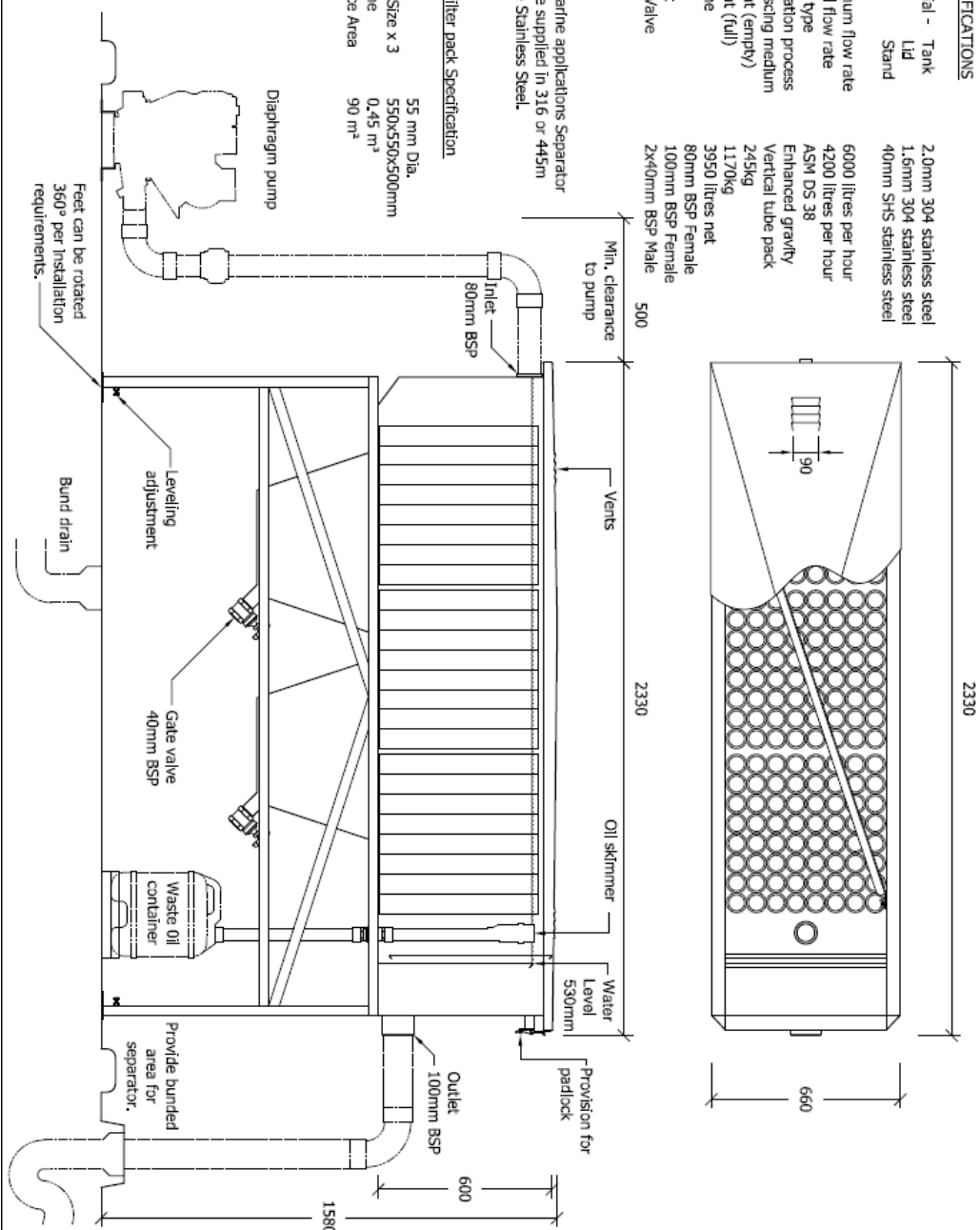
SPECIFICATIONS

Material - Tank	2.0mm 304 stainless steel
Lid	1.6mm 304 stainless steel
Stand	40mm SHS stainless steel
Maximum flow rate	6000 litres per hour
Actual flow rate	4200 litres per hour
Pump type	ASM DS 38
Separation process	Enhanced gravity
Coalescing medium	Vertical tube pack
Weight (empty)	245kg
Weight (full)	1170kg
Volume	3950 litres net
Inlet	80mm BSP Female
Outlet	100mm BSP Female
Gate Valve	2x40mm BSP Male

Note:
For marine applications Separator can be supplied in 316 or 445m Grade Stainless Steel.

VTC Filter pack Specification

Tube	55 mm Dia.
Block Size x 3	550x550x500mm
Volume	0.45 m ³
Surface Area	90 m ²



This is a schematic representation only. Site size and gradient to engineers details as arranged by customer. All plumbing and electrical connections to be installed by certified tradesmen in accordance with relative authorities requirements. Tradesmen to be engaged by the purchaser. System to be approved by relative Local Authorities before installation.

This Drawing and design is the property of Fox Environmental Systems Pty Ltd. It must not be used for any other purpose than that for which it was issued.

Project	Fox FX6000SS Specifications
Drawing Title	FX6000SS-D Oil/ Water Separator
Drawn by:	JFS
Date:	01/11/2010
Scale:	1:20
Drawing No:	A4-SPEC-1023

Appendix D Supplier Contacts

NATIONAL DISTRIBUTION NETWORK

All Tradelink, Reece, PHD, and Samios Plumbing Supply trade outlets
(Graham Abraham – Samios – 07-54934105)

North Queensland Environmental Services - Cairns (sales)
(Fred Briffa – 0422988648)

Vok Plumbing - Cairns (service)
(Van Kanakis – 0417784519)

Tony Ireland Russco – Townsville (sales and service)
(Ben Quinlan – 0419709131)

Complete Environmental Solutions – Mackay (sales and service)
(Shane Wilson – 040324003)

Plumfix – Rockhampton (sales and service)
(Glen Soboll – 0409285600)

Fox Environmental Systems – South Queensland (sales and service)
(Dave Dickson – 0317724144)

Environmental Separator Maintenance - Brisbane (service)
(Wayne Sixsmith – 0418734737)

Pro Clean Equipment – Brisbane (service)
(Stuart Bowes – 0429320020)

Plumbers NSW – Northern NSW (sales and service)
(Darren Evans – 0427485178)

Action Environmental - Sydney (sales and service)
(Dave Marshall – 0414751300)

Little Holland – Victoria (sales and service)
(Graeme Little – 041552219)

Northern Territory Acrylic and Plastics (sales and service)
(Anna Commons – 08 89844585)

Burdens Distributors – WA (sales and service)
(Charles Batey – 0404054006)

Genhaust Power and Water – SA (sales and service)
(Martin Oates – 08 82697000)

All Pump Supplies – SA (sales and service)
(Russell Grace – 08 82758000)

Pumptec – TAS – (sales and service)
(Grant Petterwood – 0427436400)

INTERNATIONAL DISTRIBUTORS

Environmental Equipment Engineering Inc. – Virginia USA
(Ted Mentz – 00111 804 7301280)

Swords and Associates – Hawaii – USA
(00111 8086765475)

Environmental Vessels and Tanks Ltd. – Canada
(Teresa Goldberg – 00111 2504682784)



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OF AUSTRALIA

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Law Courts Post Office
Melbourne VIC 8010

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Fax: (03) 9606 0376

Sydney Office

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SYDNEY NSW 2000

GPO Box 915
Sydney NSW 2001

Phone: (02) 92221 5966
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