



EL25 Recycling System & 2T P/Axle Washbay



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Emergency Contact Details

Office hours:

8am to 4pm (EST) Monday – Friday
Phone: +61 7 5535 9000

After hours:

Chemical Related: Refer to MSDS
Other Phone: +61 426 260 445



Consumables Price List

Date updated: April 2020

<u>Item Code</u>	<u>Description</u>	<u>Qty</u>	<u>Price Each</u>
Consumables			
CON100	Ph Control Acid 20 Litre	Each	\$ 85.00
CON110	Ph Control Base 20 Litre	Each	\$ 90.00
CON150	Chlorine 20 Litre	Each	\$ 34.00
CON170	Coagulant 20 Litre	Each	\$ 95.00
CON175	Flocculant 20 Litre	Each	\$ 69.00
CON210	Enviro Blue Truck Wash Concentrate 20 Litre	Each	\$ 92.00
CON250	Enviro Green General Degreaser Concentrate 20 Litre	Each	\$ 79.00
Filtration Consumables			
CON010	CMS Filter Paper Roll 455mm	Each	\$ 99.00
CON010	CMS Filter Paper Roll 455mm (5+ qty)	Each	\$ 70.00
CON009	CMS Filter Paper Roll 195mm	Each	\$ 65.00
CON009	CMS Filter Paper Roll 195mm (5+ qty)	Each	\$ 50.00
CON322	Media - Turbidex 25kg	Each	\$ 80.00
CON323	Media - Gravel 20kg (5# 8/16)	Each	\$ 29.00
CON324	Media - Sand 20kg (8# 3/12)	Each	\$ 29.00
CON320	Media 18"Deep Bed Kit - (5x Turbidex, 2x Grave, 2x Sand)	Each	\$ 600.00
Water Testing			
CON053	Test Kits: 3 x Sample bottles & labels	Each	\$ 33.00
CON072	pH Water Test Strips (Pack of 25)	Each	\$ 33.00
Spare Parts			
CON011	CMS Chain Lubricant	Each	\$ 30.00
ELE025	Float Vertical Master Switch	Each	\$ 229.00
CON031	Diaphragm D25 8"	Each	\$ 123.00
CON032	Diaphragm D32 9"	Each	\$ 182.00
CON033	Diaphragm D38 10 3/4"	Each	\$ 194.00
CON034	Diaphragm D50 12"	Each	\$ 221.00
CON035	Diaphragm D76 13 1/2"	Each	\$ 282.00
CON012	ASM Pump Oil	500ml	\$ 38.00
WAT519	Dosing Suction Sub	Each	\$ 66.00
WAT517	Dosing Injector Valve	Each	\$ 66.00
WAT515	Dosing Suction Tube	Metres	\$ 3.20
WAT516	Dosing Discharge Tube	Metres	\$ 3.20
WAT535	Squeeze Tube AP1/3 (Pack of 3)	Each	\$ 185.00

All Pricing is Excluding GST and Delivery.

Please call Enviroconcepts International Pty Ltd for delivery costs to your site.

Phone 07 5535 9000 to place your order.



Recycling System



Operating Manual EL 25 Recycling System



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1 INTRODUCTION

Thank you for purchasing your Enviroconcepts water filtration system. This manual has been prepared to help you to understand, setup, operate and troubleshoot your system. This machine was designed so that minimal maintenance would be needed in order to keep it operating efficiently.

Before operating the user should be thoroughly familiar with equipment operation, limitations and hazards. Thoroughly read, understand and observe all safety and operating instructions. Please note – System components may vary with your particular system please disregard / ignore system component instructions that are not relevant to your system. If you are unsure, please contact Enviroconcepts.

1.1 Initial Handling and Inspection

By following the instructions, you will have opened the equipment and found it to be in good condition or damaged.

If the equipment was delivered to you by a common carrier and damage is found, even hidden damage, IMMEDIATELY file a claim with your carrier. Their representatives must inspect and verify the damage. It is your responsibility, not Enviroconcepts, or your distributors to file the freight damage claim.

Check the enclosed packing list to verify that all items have been received. Contact your distributor or Enviroconcepts if assistance is needed with common carriers, identification of parts or installation process.

1.2 Important Notice

The following information is necessary for installation, parts, service and warranty consideration.

Please complete the following for your records:

Serial Number _____

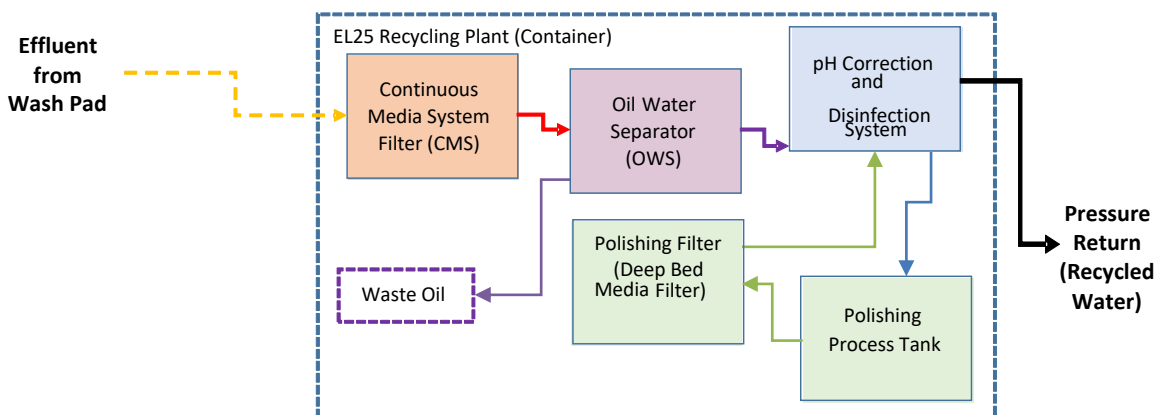
Model Number: _____

Purchase Date: _____

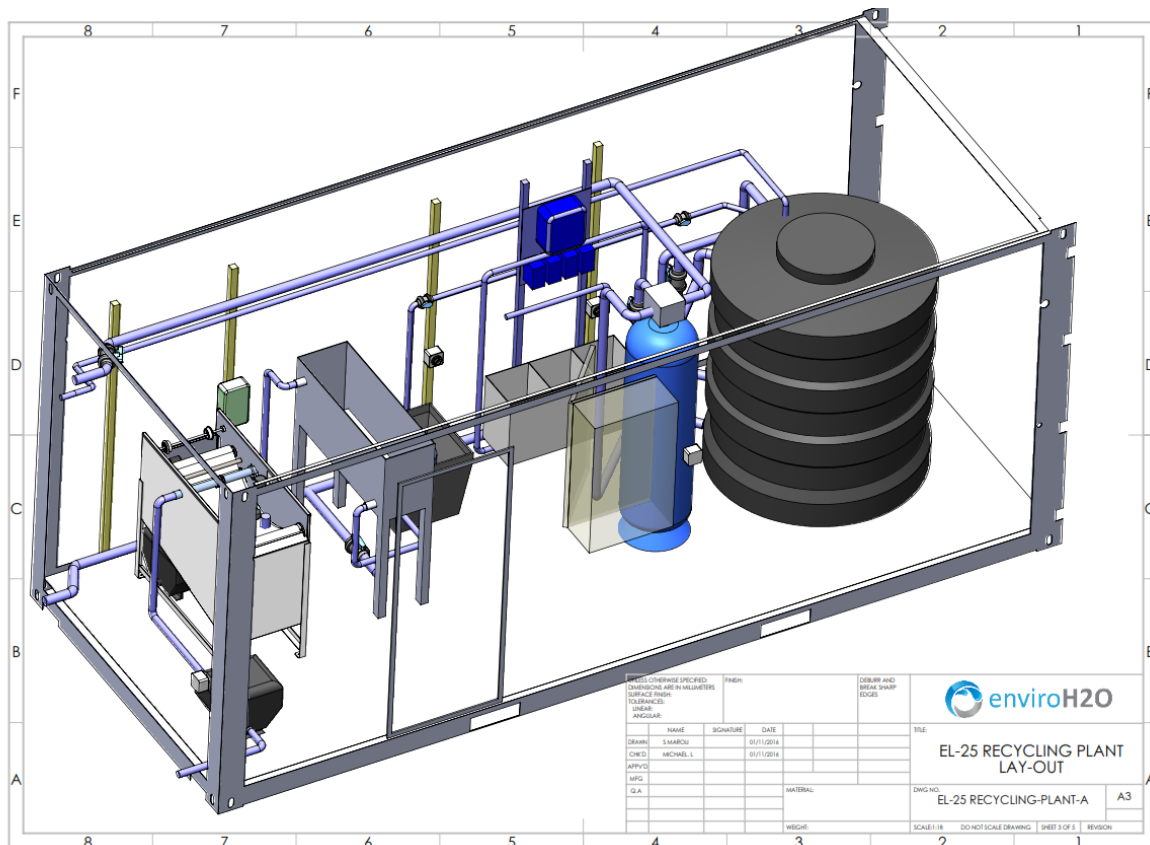
Site Address: _____

2 Process Description

Figure 2-1 EL25 Simplified Block Diagram



Note: Picture is for representation purposes only. Dependent on Model.

Figure 0-1 EL25 Layout


Wash bay effluent is pumped, via the Gutter pump, to the Continuous Media System Filter (CMS). The CMS removes suspended solids and particles greater than 20 µm (microns) in size from the effluent stream. The effluent is spread across the filter paper of the CMS by means of a spreader bar which sits above the filter paper which acts like a strainer to remove contaminants the effluent then drops to the base of the unit ready to be transferred via the CMS pump to the oil water separator (OWS). Depending on model requirements you may have a vertical gravity Separator (VGS) or a Interceptor Oil Water Separator (OWS).

The OWS are enhanced gravity separators using coalescing plates to effectively separate the fats, oils and greases from the effluent stream. The waste oil is collected into a waste oil container. The oil-free effluent overflows to a sump pit where is transferred via submersible pump through the dosing loop into the polishing process tank.

The clear effluent is then polished by pumping through polishing filter (deep media filter). The deep bed media filter uses zeolite based media which effectively removes suspended particles greater than 5 micron in size. The retention time of the polishing tank allows for 2 filtration passes ensuring high quality filtered water suitable for recycling and re-use.

The return path from the polishing filter creates a loop through the dosing manifold where is it constantly checked for pH and Chlorine levels and dosed to suit. This Line also have a flow restrictor which diverts the water and exits the unit so it can be used as the clean water outlet for the pressure washer or other wash equipment onsite.

Please note that the Figure 1 process flow diagram represents a standard EL25 recycling plant, and the system components can be changed and adopted according to actual site requirements and wastewater quality.

3 Operating Procedure (Manual Systems)

Operation of the manual system is designed to be simple and easy to use. The system has a three way switch with **FLT – Filter Mode**, **OFF – System Off** and **ECO -Economy Mode**.

3.1 Start-up Checklist

Inspect all external pipe and hose connections are connected:

- Effluent pipe from the wash pad into the Gutter Pump
- Drain line back to the pads and
- Fresh make-up water line.

Check all process valves are OPEN or CLOSE as per below list:

- Open the inlet valve to EL Recycling Plant;
- Open all inlet and outlet valves for the Continuous Media System (CMS) Filter, Oil Water Separator, Polishing Process Tank and Polishing Filter;
- Close the drain valves from the CMS, OWS and Polishing Process Tank; and
- Ensure piping is in the correct position on the Polishing Filter piping arrangement, see the Polishing filter Manual for details.
- Ensure CMS filter paper, OWS waste oil drum and the chemicals are in place.
- Ensure all the float switch of the Polishing Process Tank are inside the tank.
- Ensure power supply is properly connected.

3.2 Start-up Procedure

- Turn on System “Main Switch” located on the front of the electrical control panel, this will energise the system.
- Turn the Switch labelled “FILTER, ECONOMY, OFF” to “FILTER”.
- Press the “PLANT START” push button, the unit will start up.
- The system is now ready to use.

3.3 Shutdown

- At the end of each day the system should be turned to “**ECONOMY MODE**” this is done by selecting “**ECONOMY**” on the switch labelled “**FILTER, ECONOMY, OFF**”. The plant will shut down, press the “**PLANT START**” push button and the unit will start, the unit will now run for 15Mins and turn of for 45Mins every hour.

3.4 Individual Equipment Operation

For the operation, maintenance and troubleshooting of the individual equipment such as the CMS filter, OWS, Polishing Filter, Disinfection and pH Control System, and Pumps, **please refer to the individual operation manual for each equipment provided together with this operating manual.**

3.5 Polishing Filter (Deep Bed Media Filter)

The media filter on a manual system is designed to be manually backwashed by the user once a day, and at a maximum once a week. If this is not scheduled in to your daily check at the end of the day the warranty may be void. All backwash information is explained in the Polishing system manual.

4 Chemical Dosing Systems

Enviroconcepts systems typically use a Disinfection and pH controller to automatically manage the dosing of chlorine to achieve the required residual chlorine concentration and the dosing of the acid and base chemicals to adjust the pH to within the required range.

4.1 Chlorine Dosing and pH Controller

Disinfection via chlorine dosing and PH correction via acid-base dosing are controlled by an automatic metering and dosing system. The system is pre-programmed to dose the system at parameters initially set during commissioning. The required residual chlorine concentration is set at 2 mg/L or parts per million (ppm), the ORP is set to 400-650. The low pH set point is set at 7 and the high pH set point is set at 7.4.

The dosing rate is set at the factory and is further calibrated during the first few months of system use, once the dosing rate is correct, as per site requirements, operation is automatic. There should be no other operator intervention required other than to periodically check the level of the chlorine, acid and base chemical containers.

The Chlorine, Acid and Base probes are calibrated during your systems commissioning phase, calibration of the probes should be checked and adjusted monthly.

For detailed information on the dosing system parameters and adjustments refer the individual manuals supplied with your system.



IMPORTANT: Always follow the MSDS and use appropriate PPE when handling product chemicals.

4.2 Chlorine Monitoring Procedure

Operators of the plant can carry out chlorine tests on the polished recycled water to ensure that the chlorine level reading is between 0.5 -1.0 ppm for correct disinfection of the recycled water. If chlorine readings are below the above set limits the operator must ensure that the chlorine dosing system on the plant is operating correctly and injecting chlorine into the water line. Contact Enviroconcepts immediately if you have any issues.



IMPORTANT: Free residual chlorine test must be carried out every 2 days of operation of the recycled water treatment plant to ensure proper disinfection is being carried out. Chlorine test kits are available to purchase from Enviroconcepts.

5 Water Sampling Procedure

- Before removing the cap of the sample bottle and taking a sample from the tap, the tap must be wiped with alcohol wipes or flame heated with a butane burner to kill all bacteria inside the sample tap.
- Use surgical gloves when taking sample to ensure no human contamination of the sample.
- Fill the bottle to the top and place the lid on and ensure it is tight and then place the sample in a carrying container
- Have it couriered or book a pick up for lab testing immediately after sample is collected.

5.1 Frequency

Enviroconcepts recommend that at a minimum of every 4 weeks a recycled water sample be taken for a biological bacto test by a NATA registered laboratory close to the plant as this sample must be couriered to the laboratory within 24 hours. The sooner it arrives at the lab the better.

Water samples must be collected in a sterile bottle supplied by the testing lab to the operators of the plants and the water sample must be collected as per the above instructions.

When the sample is collected the operator must ask the NATA testing laboratory to test the recycled water sample for the following parameters to ensure that the plant is performing to the safety guidelines.

- Turbidity in the sample
- Chlorine reading
- Ph of the sample
- Total plate count ecoli & coliform bacteria counts



IMPORTANT: Please attach a copy of the water quality test results from the initial commissioning operation of the plant into the front of this manual. These results will be used as the bench mark for subsequent results. If any new information from these tests becomes available regarding the water quality or characteristics affecting its safety or the water quality changes significantly from the original water quality test please contact Enviroconcepts immediately. Initial water tests should be completed once the treatment plant has been commissioned and is operating under its expected daily and weekly usage volumes.



WARNING: It is the operator's responsibility to ensure the correct tests and requirements are being met to satisfy the State and Local regulations for recycled water.

Enviroconcepts recommend the sample be forwarded to an Australian Laboratory Services (ALS) NATA testing lab in a town or city closest to your plant. This company has labs Australia wide to carry out these water tests. ALS provides pre-treated and labelled sample containers, for all analytical work to be conducted at the laboratory. Most samples for analysis should be chilled whilst en-route to the laboratory. Please contact the laboratory for further information and to organise bottle delivery.

6 Non-Potable Water Safety

Recommended uses of recycled water

6.1 *Recommended uses of recycled water*



WARNING: The water produced by this system is non-potable and is not fit for drinking. It can be used for washing machinery, cars, trucks and other equipment provided the water treatment system is maintained and correct monitoring procedures are adhered too. Always follow the correct water monitoring procedure and guidelines to insure the safety of all operators and workers.

6.2 *System shutdown more than 48 hours*



WARNING: If the system is to be shut down for longer than 24-48 hours a contingency plan must be put in place to ensure water does not become contaminated. The system can be drained and water disposed of in accordance with regulations. If the system cannot be drained then it will need to be turned on and allowed to run for at least 4 hours within the 48hour period to maintain water quality.

6.3 *Requirements for water treatment plants*



IMPORTANT: As the operator of the equipment it is your responsibility to ensure correct water testing and frequency is being undertaken to meet your State and Locality guidelines for recycled water.



IMPORTANT: Each recycled water treatment plant has a tap sample cock installed. All water test samples must be taken from this sample point to meet WHS guidelines, ensure system components are running properly and maintain a safe working environment for the operators of the wash bay and other general public.

7 Installation

7.1 Plumbing Installation

- Connect the pipe work between supply sources being the wash pad gutter box / wash bay sump pit or in ground pit to the gutter pump.
- Connect the backwash return line to the wash pad gutter - typically the opposite end to the float switch and pump pick up, wash bay sump pit or in ground pit from the filtration unit.
- Connect the potable fresh water supply to the water make up point – see details below.
- Connect a hose from the recycled water ball valve tap to the user device (pressure washer, water pump or holding tank)

NOTE: System plumbing changes may occur, refer to your system layout diagram for details.

The fresh water make up should be connected to a water supply protected by an approved backflow preventer valve. The water supply will require adequate pressure to operate the system effectively.



IMPORTANT: If adequate pressure is not available a suitable pump and pressure switch system needs to be installed by the operator to ensure a pressurised water feed is available.



WARNING: This system is designed to be commissioned with potable water and with a fresh water makeup inlet supply of potable water. The use of a water supply other than potable water may have an adverse effect on your equipment and void the Enviroconcepts Warranty.

7.2 Deep Bed Media Filter (Polishing Filter)

Incoming water from the piping system is automatically directed to the filter bed. As the water is pumped through the filter media, dirt, debris and contaminants are trapped by the filter bed and filtered out. The filtered water is returned from the bottom of the filter tank and back through the piping system. The media supplied with the system is determined by the effluent stream that is processed by the system.



IMPORTANT: The filters do not travel well with media installed. The media is shipped separately and must be installed on site.

If your system is supplied with special, application specific media(s), please contact Enviroconcepts for any questions about media installation.

NOTE: If you are unsure of media levels please call Enviroconcepts for media volumes and capacities. Please note the model number of your media filters before you call.

For more information on your specific media filter please refer to the alternative filter section of this manual.

7.3 Removing or Replacing Media

Media can be removed using a wet vacuum, slurpy (venturi system) or Vacuum truck. To remove valve head undo barrel unions and unscrew valve head to access filter media.



IMPORTANT: Prior to emptying media remove filter drain plug located on the lower side of the filter. Replace drain plug once filter has been emptied.



IMPORTANT: Be careful when removing media that you do not damage the filter laterals, if these are damaged please contact Enviroconcepts to organize replacements.

8 General Safety

The Polishing systems are designed to provide continuous water filtration, removing contaminants prior to discharge to sewer, holding tank or for reuse. Many safety features have been integrated into the design to help protect the operator from hazards, however, there are potential risks involved with their use. Please read the safety instructions carefully.

 **WARNING:** The “clean” water produced by this system is not for human consumption and may subject the user to skin and/or eye irritation depending upon contaminants left in the solution. Always wear appropriate protective equipment when using this system.

 **WARNING:** During installation or service always turn the system off and disconnect from power to assure that the unit is not inadvertently started. Never work on any electrical components while power is on. Always use electrical lockout procedures when working on this equipment. Always use a licensed contractor or individual to undertake electrical works on systems.

 **WARNING:** Survey the area where the equipment is operating for possible hazards and correct as required.

 **WARNING:** Systems contain a large volume of fluid. Do not operate the system if any water leakage is observed, guards or components have been removed or defeated, or if any mechanical defect is suspected. Verify that all fluid connections, tank lids, O-rings, fittings and/or media filter lids are secure and tight before operating. Ensure you have installed suitable and approved bunding to contain the system.

 **WARNING:** Periodically check all gauge readings, be aware of each gauge’s monitoring function, as well as its normal and warning levels.

 **WARNING:** Never stand in water when cleaning, contacting or working with electrically powered equipment.

 **WARNING:** Verify the correctness of all electrical connections, especially check for proper electrical ground before servicing or operating this equipment.

 **WARNING:** Please do not attempt to service your ECCU as hazardous voltages are contained within.

8.1 Mechanical Safety

 **WARNING:** All guards, shields and covers must be in place to prevent accidental contact with hazardous parts.

 **WARNING:** Turn the machine off before attempting to make any adjustments, unless directed otherwise.

 **WARNING:** Inspect machine periodically for damaged or worn components and repair or replace to avoid potential hazards.

 **WARNING:** The media filter operates under pressure and if assembled improperly or operated with air in the water circulation system could result in the top closure separating possibly causing property damage or personal injury.

 **WARNING:** Observe and do not remove any warning and safety labels on the system.

8.2 Chemical Safety

The Polishing Systems are designed to condition waste water generated by various washing operations. The wash water will normally contain cleaning chemicals, solids and hydrocarbons. Other chemicals may also enter the system.

Please note the following chemical safety precautions.



IMPORTANT: Your warranty may be void if chemicals not approved by Enviroconcepts are used in your filtration system. Certain chemicals may have adverse effects on your filtration equipment, please contact Enviroconcepts before allowing chemicals to run through this system. This system is not designed to be used with solvents, flammable or non-flammable.



WARNING: Be careful not to inhale or ingest effluent liquids or vapour. Many commonly used chemicals react violently when exposed to water, creating explosive or noxious vapour hazards.



WARNING: Be aware of any chemicals used in the cleaning process that may be introduced into the systems, their proper application, first aid procedures and recommended disposal procedures. Make sure that Material Safety Data Sheets (MSDS) are readily available on all products associated with the process. MSDS sheets are readily available from Enviroconcepts on all of our supplied chemicals.



WARNING: This system is designed to be used with wash water effluent. Certain hazardous chemicals, solvents, and cleaning compounds may adversely affect this system and the equipment warranty. Contact Enviroconcepts regarding material compatibility questions before allowing questionable materials to run through the system.

9 Storage or Shipment Checklist

The system must be thoroughly drained and the media removed before storage or shipment:

- Open all tank and filter drain valves. Open the air relief valves on the top of the media filter to allow air to flow into the filter.
- Use a wet-vacuum to remove the media from the media filters, being careful not to damage the laterals.
- Clean the interior of all tanks, pumps, and filter housings with a pressure cleaner if possible.
- Close all drain valves and replace all caps and covers.
- Disconnect all utility connections.



Operating Manual 2-Tonne Wash Pad



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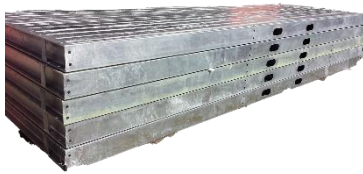
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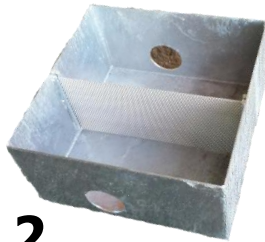
1. PARTS LIST

The following is a list of all the parts supplied by Enviroconcepts for the installation of your 2 Tonne Washbay:

1. 2 Tonne Washpads (+ walls and ramps if required)
2. Gutter Box
3. Vertical Master Float Switch
4. 80mm Tank-Trough
5. 80mm Poly Elbow
6. 80mm Hex Nipple
7. 12mm X 30mm Purlin Bolts
8. 12mm X 35mm Structural Bolts
9. Sausage Gun
10. Silicone/ Sikaflex
11. Rags
12. Thread Tape
13. Series 500 Tek Screws
14. 6mm Bolts, Nuts and Washers
15. Gutter Cover Handle/ D Bolts



1



2



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2. INSTALLATION INSTRUCTIONS

Instructions for installation off your wash bay as below, please note that if you have purchased the install kit then Enviroconcepts will supply all bolts, structural Sikaflex and clear silicone sealant for installation, however if this kit is not purchased then materials will need to be sourced by yourselves.

2.1 *Installation of Wash Pads and Ramps*

1. Ensure site is properly levelled and has a fall to gutter box location.
2. Set up string line or measure and spray line to keep the pads straight. Where possible, use whatever is available within the environment of the installation that has a straight line as a reference.
3. Lay pads keeping in mind if walls are being used there will be two brackets bolted to the long side of one of the pads for the uprights of the rear wall. This pad must be installed first. Refer to drawing for orientation. When the first pad is installed check that the fall of both the pads and the gutters are correct by pouring a few litres of water onto the pad.
4. Make sure no stones or ground surface is caught between pads when locating. Bring pads close together but leave enough room to move in between while Sikaflex is applied. Apply Sikaflex sealant around drain holes for the gutters, bolt holes and along the inside surface 50 mm from top of pad. Do this for both of the adjoining pads. Around 1 tube of Sikaflex per pad. Ensure surfaces are clean, oil free and dry before applying.
5. Join pads together with the 12mm structural bolts while aligning bolt holes. A podgy spanner or pinch bar may be necessary to achieve correct alignment. If walls are being used install the wall uprights by aligning them with the holes in the pads and using the same structural bolts. Use an 18mm ratchet spanner and ring spanner to tighten the bolts. Make sure the uprights are level before tightening. Refer to drawing for selection of wall uprights and orientation. There should only be a small gap between pads if ground is levelled and pads lifted into place properly.
6. After a few pads are joined double check that the alignment with the environment is still on track.
7. Run a line of Sikaflex down the top of the gap between pads to seal. Remove any excess Sikaflex around the drain holes in the gutters and add more where necessary. Be sure there is no chance of leaking.
8. Attach gutter box with Sikaflex and 2x Series 500 Tek screws, making sure the orientation of the holes is correct so that the gutter box doesn't extend past the pads.
9. Join the 80mm hex nipple to the tank-through, and then the poly elbow to the hex nipple using thread tape to seal the connections. The elbow should have one end cut down, this is the end that is NOT connected to the nipple.
10. Install the tank-through assembly in the gutter box. There are two washers on the tank-through, ensure the soft one has the ribs facing on the inside, against the steel of the gutter box. It is important that the hard washers is on the outside, as this is the side that you will be tightening.
11. Get a measurement of the width of the wheels of the largest vehicle to be using the wash bay. Use this measurement as a guide for the placement of the ramps. Use a forklift if necessary for getting ramps in to place.
12. Install the Gutter Cover handles using the handles/nuts supplied, there are holes punched out of the gutter covers midway.

2.2 *Installation of Walls*

1. If walls are being used, refer to drawing for pieces to be assembled and location. Using the 12mm purlin bolts, loosely attach the A1 uprights to the rest of the uprights with a bolt at the top only for now.
2. Locate correct wall panels for bottom first, then top. Run a line of translucent silicone along the edge of the pads under the position where the bottom wall panel is to be installed. Keep all bolts loose for now.
3. Once the bottom row of walls are in place, install bolts along the bottom section of the wall uprights where the A1 brackets need to attach to the other uprights. The bolt that was loosely attached at the top of the uprights will have to be removed in order to get the top row of wall panels in place.
4. Once all the panels are in place all of the bolts can be tightened. Use an 18mm socket on an impact driver for maximum efficiency.
5. Use silicone sealant on all joins along top of pads around bottom of wall, all pad joining bolts and nuts in gutter system and hole cut outs.
6. Allow 24 hours for Sikaflex to cure, before driving or placing a vehicle onto the pads

2.3 *Installation of Gutter Box Float Switches*

1. After the gutter box has been installed on the pad, fix the float switch to inside of the box with two 6mm bolts. Make sure the float is located on the suction side (post screen) in the box. It should be installed at a height where the rod of the float is not quite touching the base of the box, if needed this rod can be cut down to suit the depth of the gutter box.
2. There should be two rubber grommet rings on the rod to turn the switch on and off. One will be located above the float and the other below it. These are easily adjusted by sliding on the rod.
3. The bottom rubber stop is set as low as possible, so that the pump can suck as much water as it possibly can from the gutter box before turning itself off.
4. The pipe to the pump should be coming through a tank-through fitting in the gutter box with an elbow dropping inside gutter box, the float should be set so the top rubber is at approximately the same level as the top of the elbow.
5. The float switch cable can be run through 20 mm conduit or bigger. It is 240V. This is terminated in a box located next to a control pump on a stand via terminals marked inside.

3. *DAILY / WEEKLY MAINTENANCE*

1. Clean down the wash pad and walls.
2. Inspect and clean all collection areas from solids- particularly the gutter and around the float switch in the gutter box.
3. The gutters and particularly the gutter box need to be thoroughly cleaned out at the end of each day, open the gutter lids at the side of the wash pad and scrape the debris into a suitable container and dispose of as per site procedures.
4. Check the pump for operation and flow.
5. Visually inspect all equipment for damage or leaks.
6. Check pump gearbox oil level.

If you have any issues with your wash pad please contact Enviroconcepts on 07 5535 9000 or service@enviroconcept.com.au.au along with photos of the issues so that we can provide you with a solution as quickly as possible.



Gutter Box Plumbing and Float Placement

Quick Reference Guide

Continuous Media System (CMS)

DAILY CHECKS

- 1) Check supply of media roll and replace media paper when necessary.
- 2) Check for any visible tears in the filter media paper. If any tears are found, advance the filter media paper past the tears by lifting the float ball on the float valve located above the filter media paper.
- 3) Empty filter media paper catch container as necessary.
- 4) Clean scraper blade that is attached to the filter paper media catch container.
- 5) Visually inspect equipment for any leaks.

WEEKLY CHECKS

- 1) Flush or vacuum solids from container. Open ball valve drain valve on rear of CMS for 1 minute, to allow accumulated solids to flow into the drain line.
- 2) Check floats and pumps for proper operations.

TO BOOK A SERVICE OF YOUR EQUIPMENT CALL ENVIROCONCEPTS PH 07 5535 9000

Quick Reference Guide

Oil Water Separator (OWS)

DAILY CHECKS

- 1) Check Oil waste drum level – empty/replace as required
- 2) Check for water leaks
- 3) Check drain ball valves are closed
- 4) Check oil skimmer belt is operational
- 5) Check oil skimmer belt is not blocked

WEEKLY CHECKS

- 1) Open ball valve/s at base of OWS for 60 seconds to purge solids.
- 2) Check ASM pump oil level
Note - Below points not applicable to the VGS separators
- 3) Remove cover and visually inspect Oil is collecting on top of the water.
- 4) Visually check solids accumulation within the coalescing plates.
- 5) Visually check the Oil layer on top of the water is 5mm-10mm.

TO BOOK A SERVICE OF YOUR EQUIPMENT CALL ENVIROCONCEPTS PH 07 5535 9000

Quick Reference Guide

ULTIMA pH Adjustment and Chlorine Dosing

DAILY CHECKS

- ✓ Check chemical levels and replace as required.
- ✓ Visually check dosing lines for any cracks, splits or blockages.
- ✓ Check ULTIMA screen for any alarms. Take action as required.
- ✓ Look for re-circulation water flow through the clear pipe.
- ✓ Check pH reading (This should be between 7.0 and 7.4 unless you have a DAF system).
- ✓ Check Chlorine reading (This should be between 500mV and 800mV).

Basic System set-up

The ULTIMA controller has a touch screen and navigation is done by touching the screen with your finger. DO NOT OPERATE CONTROLLER WITH DIRTY WET FINGERS OR USE METAL OR SHARP OBJECTS.

The ULTIMA controller comes pre-set with decisions already made appropriate to your water treatment requirements. If you wish to change any of these setting please contact Enviro Concepts before commencing to do so.

The six main parameters information displayed are Name, Current Value and set point. If the relay is on, the power icon turns blue in the top left hand corner of each component box. If the component is in Lock Out, a Red Padlock sign will appear in the left top corner. If the component is in alarm, the top part of the component box will flash red.



Figure 1. Main screen

The main components that need to be monitored are

- ✓ PH (set point dosing ACID)
- ✓ PH B (set point dosing BASE)



- ✓ ORP (oxidation Reduction Potential between 500-800 mV)
- ✓ FAC (Free Available Chlorine)

Set Time and date

The current time, day and week are important for managing the ULTIMA program functions. To adjust date and time setting

1. Click on the System button
2. Select advanced setting
3. Scroll down until you see date and time and touch screen
4. Adjust date and time setting the push set

FOR FURTHER DETAILS ON PROGRAMMING AND OPERATIONS INSTRUCTIONS PLEASE REFER BACK TO YOUR USER MANUAL.

Routine Testing

The use of an Aquarius control system will automatically vary the dosages and maintain good conductivity, pH, ORP and disinfection control, even where there are wide fluctuations in system load or demand. The principles of “Best Practice” and “Duty of Care” that are the responsibility of the system owner dictate that all systems should be routinely serviced and tested chemically and the results logged.

Regular Inspections and Maintenance

For optimum results and continued accuracy, the complete operation of the controller system should be verified at least on a monthly service basis. All sensors should be inspected, cleaned and calibrated as necessary every month.

Maintenance schedule	1 month	3 months	6 months	12 months
Clean and Calibrate FCT Probe	√			
Verify Flow ON/OFF	√			
Clean FAC Probe	√			
Clean pH/ORP Probe	√			
Verify / Calibrate ORP	√			
Test Outputs	√			
Test Pumps/Solenoid Operation	√			
Calibrate pH Probe	√			
Check/Clean Injectors	√			
Inspect Suction/Discharge Tubing	√			
Check/Clean Solenoids		√		
Peri. Pump - AP Service Kit			√	
Peri. Pump - AP Overhaul Kit				√

Multi Media Polishing Filters Maintenance Check

- Check that the polisher unit is securely fastened down and free from damage.
- Check the pipe work to/from the polishing tank is secure and free from damage and leaks.
- Check the pipe work to/from the pump is secure and free from damage and leaks.
- Operate the valves and inspect for damage and leaks.
- Check the time on polisher head is current for zone.
- Check the settings in the polisher program to ensure they are still correct.
- Initiate manual backwash on each filter individually and monitor pressure, media fouling and leaks. The backwash sight tube should run clear after 10 minutes.
- Check the operation of polishing pump and check for leaks at pump and pipework at head unit.
- Pressure setpoints are marked on the pressure gauges.
- Check the vacuum release valves on the inlet lines to the polisher are functioning correctly.
- Check the polishing pump pressure switch operated correctly and is free from damage.
- Check that the blue light indicator on the control panel illuminates when the associated filter is in backwash.



Quick Reference – Water Sample Collection Procedure

A water sample needs to be collected as per your schedule and sent to Enviroconcepts immediately after collection.

Samples must be taken and sent by EXPRESS on Monday each week to enable processing within 48hrs of leaving site, or the sample will be invalid.

Samples to Collect

1. Sample Tap 1 – Valve_____

Procedure to Collect Samples

- Ensure sample taps are clean PRIOR to sampling.
- Rinse sample bottles with the test water prior to the sample being taken.
- Fill sample bottles to the top to minimise contact with air.
- Be sure NO human contact is made with sample water.
- Ensure lid is fastened tightly.
- Sample bottles should be cleaned, externally, dried and sealed well prior to sending.

Complete sample kits of 3 bottles can be returned to us via one of two available methods;

- Via Courier, to our physical address;
 - o 25 Hutchinson St, Burleigh Heads, QLD 4220Return address labels are provided with the sample kits for ease of return
- Via Australia Post Express Post to our PO Box;
 - o PO Box 6664, Gold Coast MC, QLD, 9726

If utilising Post as the method of return, please phone us on 07 5535 9000 to let us know.



Wash Pad Daily Checklist

Wash Pad

- Inspect and clean solids from Gutter
- Inspect and clean gutter box screen and check float switch is clean and free of debris
- Clean down the wash pad and walls
- Clean all collection areas – particularly the gutter and around the float switch in the gutter box.
- Check the pump for correct operation.
- Check operation of float in gutterbox.

General

- Look for any leaks or damaged pipes.
- Listen for any unusual noises in particular - pump motors, bearings, air bleeds etc.

Daily/ Weekly Maintenance – Wash pads

1. Clean down the wash pad and walls at the end of every day
2. Clean wash pad gutters with a shovel or similar every morning before commencing washing.
- Waste should be disposed of in an approved bin, please arrange this with your waste management company.
3. Clean around the gutter box float switch every morning.
4. Clean screen in gutter box every morning.
5. Check the gutter box pump for operation and flow by lifting gutter box float switch.
6. Visually inspect all equipment for damage or leaks.
7. Check operation of float in gutterbox.

Daily/ Weekly Maintenance – Tanks

1. Check tanks for any leaks or damage
2. Check all tank fittings are secure and no damage or leaks visible.

Quick Reference – Maintenance Schedule

Daily: Before turning to FILTER MODE

- Check all chemical containers have sufficient chemicals.
- Check water make up supply is connected
- Check CMS paper bucket and clear if necessary
- Check any sludge tanks and drums and empty as required
- Check the water levels in each tank are adequate
- Confirm all floats are free from debris
- Visually inspect all equipment for damage and correct operation
- Visually check hoses, connections and fittings for water leaks.

Daily: After turning to FILTER MODE

- Check all pumps for normal operation and flow
- If unsure, trip each float to cause flow and confirm
- Ensure pH and chlorine readings are within defined range
- Visually check hoses, connections and fittings for water leaks and blockages.

Daily: Washpads

- Clean down the washpad and walls at the end of each day,
- Clean and empty all collection areas -particularly the gutter and around the float switch in the sump box.

Please note that many pumps are not self-priming. It is paramount that after any shutdown or emptying of the system capacity, that all pumps be isolated and independently switched back on as flow is verified.

Weekly: Preferably carried out after extended time since use (i.e., Monday morning not Friday afternoon for instance).

- Be sure to carry out checks above.
- Ensure unit is in ECONOMY MODE
- PURGE solids from each filtration stage by draining individually. Manually open each drain line one at a time.
- Check to confirm flow to end of gutter, which will raise gutter height and trigger the gutter pump.
- Water will be reprocessed, and solids left in the gutter
- Generally, OWS & CMS units can be emptied fully
- Tanks should be drained by no more than a quarter of their capacity.

At night, an automatic backwash of filters will occur. It is MANDATORY that the drain line flow from these filters is left open. Any closing of these valves will cause a massive back pressure and likely damage the system.

QUARTERLY:

- Turn the power off to system completely.
- Perform those tasks listed above
- Remove and clean OWS coalescing plates as per manual
- Fill OWS with clean water until water starts to flow over the outlet weir.
- Check medial levels in polisher – if low, refer to manual.
- If possible, check sludge levels in tank.
- If required, arrange for sucker truck to remove sludge – do not empty entire tank as this will cause the system to need to chlorinate and re-dose the entire quantity of water for no reason.

- For any emptying of water from tanks, be sure the water make up system is working (once turned back on if electric).
- Make certain all valves are positioned for proper flow.
- Turn the power back on and check that the pump is primed and operating.



Maintenance & Troubleshooting EL



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1 POLISHING SYSTEM MAINTENANCE

In order to maintain filtration efficiency, the system must be serviced periodically. The filter continuously removes debris from the effluent flow. The debris increases the pressure drop across the filter. As the filter loads, the operating pressure of the circulation pump increases and the flow through the filter decreases. If the filter is not cleaned on a regular schedule, the system will not perform at an optimal level.

The system should generally be kept clean. It must be protected from the weather and should be protected against freezing and temperatures above 55 degrees C.



WARNING: The media filters operate under pressure. When any part of the circulating system (e.g. pump, filter, valves etc.) is returned to service, trapped air should be relieved by opening the air relief valve on top of the housing. Pressurized air can cause an improperly installed filter top, control valve, or hose to be blown off. This could result in severe bodily injury and/or property damage.



WARNING: Before servicing, always turn the system off and tag it out to ensure the unit is not inadvertently started.

2 MEDIA FILTER

2.1 Backwashing the media filter.

Refer to backwash procedure of the operations manual.

2.2 Cleaning the Media Filter

When the colour of the backwash water continues to maintain a dark coloration after consecutive backwashes and the kpa pressure gauge doesn't equalize back to 370-390kpa the media needs replacement.

1. Shut the system power down.
2. Isolate all power & pipes
3. Disconnect the pipe unions attached to filter head/actuators.
4. Disconnect power to filter head/actuators.
5. Remove the media from the filter housing with a wet vacuum.

Once media is removed from the filter, follow the 'INSTALLING THE MEDIA' instructions in the operations manual.

It is recommended that the Media is replaced 12 months after the first and 12-24 months ongoing after that.

3 CHECK LISTS

3.1 Wash Pads

- Inspect wash pads for obvious damage or wear.
- Inspect side gutters for leaks.
- Inspect side gutters for solids build up.
- Inspect and clean gutter box mesh.
- Inspect and clean gutter box float switch.
- Inspect tank through fittings to gutter for leaks.
- Inspect side walls for damage.
- Inspect side wall bracket bolts are tight.
- Inspect side walls for visible water leaks.
- Inspect wash pad ramps for damage.
- Inspect wash pad plumbing for damage or leaks.

- Open each wash pad gutter lid and spray hinge with WD40 ensure smooth operation of lids is possible

3.2 Continuous Media System – CMS

- Inspect all plumbing fittings for leaks.
- Check for water flow from gutter pump.
- Remove spreader bar end cap and clean drain holes and bar.
- Activate top float switch to check belt drive is working smoothly.
- Inspect conveyor chain and sprockets are turning freely upon activation of top float switch.
- Lubricate chain and sprockets.
- Inspect chain for tight or locked chain links.
- Check conveyor belt is clean and free of blockages, clean if required.
- Check conveyor belt guides are free of solids or obstructions clean/adjust if required.
- Activate bottom float switch and check that the discharge pump is working.
- Check high level float switch is operating correctly (generally these are wired to cut out gutter pump).
- Inspect solids build up in sump and clear well of CMS drain as required using the top and bottom taps.
- Check the filter paper and replace if required.
- Empty catchment container for used filter paper.

3.3 Oil Water Separator – OWS

- Inspect all plumbing fittings for leaks.
- Inspect oil build up on top of water.
- Check the condition of coalescing plates for dirt, grease and oil build up. (Advise customer in service report that cleaning is recommended).



IMPORTANT: Please note – when operating a pressure cleaner to clean coalescing plates, be sure NOT to use high pressure as this may damage the coalescing plates.

3.4 Polishing Tanks and Media Filters

- Inspect all plumbing fittings for leaks.
- Check the tank is aerating correctly and good return flow is present within the tank.
- Check the drain line plumbing taps are in correct positions for all tanks.
- Check head pressure on media filter, this should be between 370-390KPA.
- Call for a backwash and check actuator valves are operating correctly.
- Check for backwash feedback on indication light.

3.5 Disinfection & Dosing systems maintenance

Please refer to the relevant manuals for UV, chlorine disinfection and PH systems for scheduled maintenance & Calibration information.



Specific Equipment



Diaphragm Pump Manual



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1. INSTALLATION INSTRUCTIONS

In the rare occurrence where the diaphragm pump is required to be installed on site by either yourselves or your plumber, please see the below instructions

1.1 General

Install the pump on a level and secure surface using holes in the base plate.

Remove vent plug from gear reducer oil filler cap.

Check oil is visible in the sight glass. Use high quality 460 grade gear oil. ASM Diaphragm pumps do not require priming and can run dry without damage. For startup ensure all valves are fully open before running the pump. With the pump delivering liquid check the motor current draw is below the full load current on the motor nameplate.

1.2 Rotation

Correct motor rotation is clockwise – viewed from the fan end of the pump.



WARNING: Incorrect rotation will damage the pump and void warranty.

1.3 Pipe Work

Correct pipe size is a critical factor affecting pump performance and service life. Refer to pipe selection chart below. Pipework should be airtight, adequately supported and as short and direct as possible. Use flexible connectors between pump and rigid pipe work. Fit an ASM Pulsation Dampener if rigid pipework exceeds 3m in length. For flexible installations use reinforced suction hose for suction and discharge.



WARNING: Never restrict or dead head the pump discharge, damage will occur. Use of incorrect pipe sizes will void warranty.

1.4 Electrical

Have the electrical connection installed by a qualified electrician. Connect motor as per the motor manufacturers instructions and fit a motor overload protection device. Ensure there is unobstructed airflow to the motor cooling fan and the motor is protected from the weather and water. The correct motor rotation is clockwise viewed from the fan end.

1.5 Gear Reducer

Check oil is visible in sight glass before start up. Recommended Oil – Shell Omala 320 or Castrol Alpha SP320.



WARNING: Remove vent from oil filler cap.

1.6 Engine Drives

Refer to manufacturer's instructions for commissioning

1.7 Start Up

Diaphragm pumps do not require priming and can run dry without damage. Open valves and run the pump. With the pump delivering liquid check motor current draw is below the full load current on the motor nameplate.

1.8 Important information for installers – Internal Pipe Size for Diaphragm Pumps

For Clean liquids with the same viscosity as water.

Pump Size		Suction Pipe Length 0-5m	Suction Pipe Length 5-10m	Discharge Pipe Length 0-5m	Discharge Pipe Length 5-10m	Discharge Pipe Length 10-20m
D25	Suction Pipe ID	25mm	32mm	32mm	40mm	40mm
D32		32	40	40	50	50
D38		40	50	50	65	65
D50		50	65	65	80	80
D76		80	80	80	100	100



WARNING: Use of pipes smaller than recommended will void warranty

1.9 Maintenance

After 10 Hours operation check the oil level in the gear reducer and re-tension fasteners if required. After 100 Hours drain reducer, flush thoroughly with a light oil and replace with 460 grade gear oil. Replace gear reducer oil every 2500 Hours thereafter. The operator should not need to carry out further maintenance, rather inspect the pump on a regular basis and be aware of changes to the pump's normal operation. Diaphragm and valve assemblies are consumable items and will require replacement.

1.10 Diaphragm Installation Instructions

- Jog pump to take the diaphragm, Item 3 to the bottom of the stroke.
- Disconnect power supply. Remove the four clamping bolts holding the drive support housing, Item 12 to the bowl casing, Item 1 and lift the drive support and diaphragm assembly clear.
- Remove stainless bolt Item 9 for D25 and D32 or nut for D38, D50 and D76. Remove the washer set set Item 10 and diaphragm plate Item 2.
- Clean and inspect both diaphragm plates and replace washer set. Replace diaphragm. The correct orientation is with the writing up. See Fig.1
- The top outer lip of the diaphragm should be 0 - 2mm from the drive support housing clamp face. See Fig.2 below.
- The diaphragm position will generally not require adjustment. If required, loosen and adjust the connecting rod nut/s.
- Mount the drive support and diaphragm assembly onto the bowl casing ensuring the diaphragm is central and located in the groove of the bowl and fit the four clamp bolts.

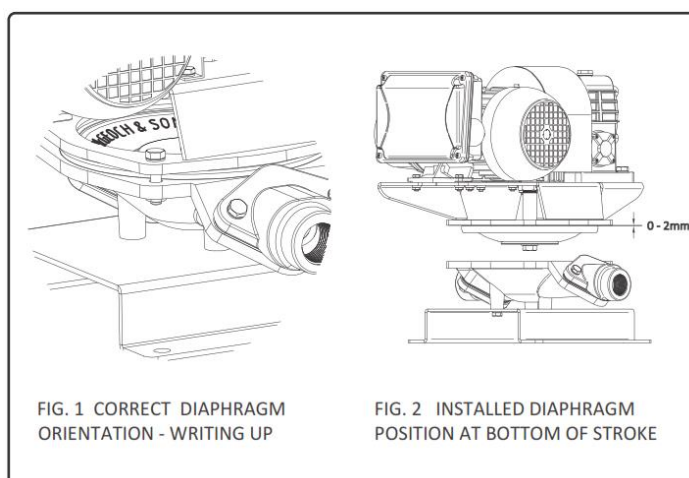
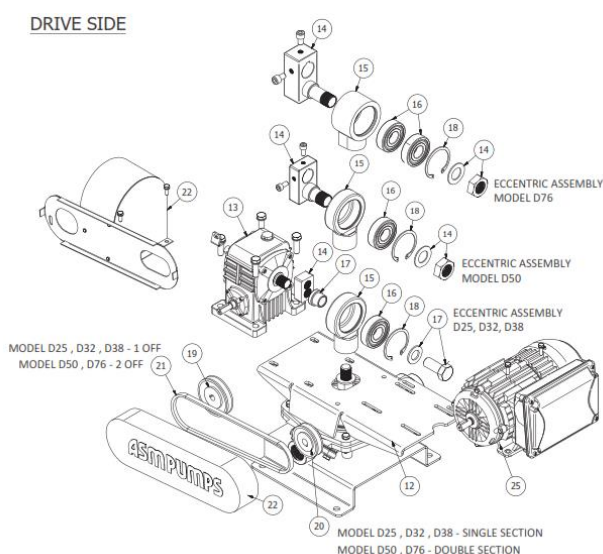


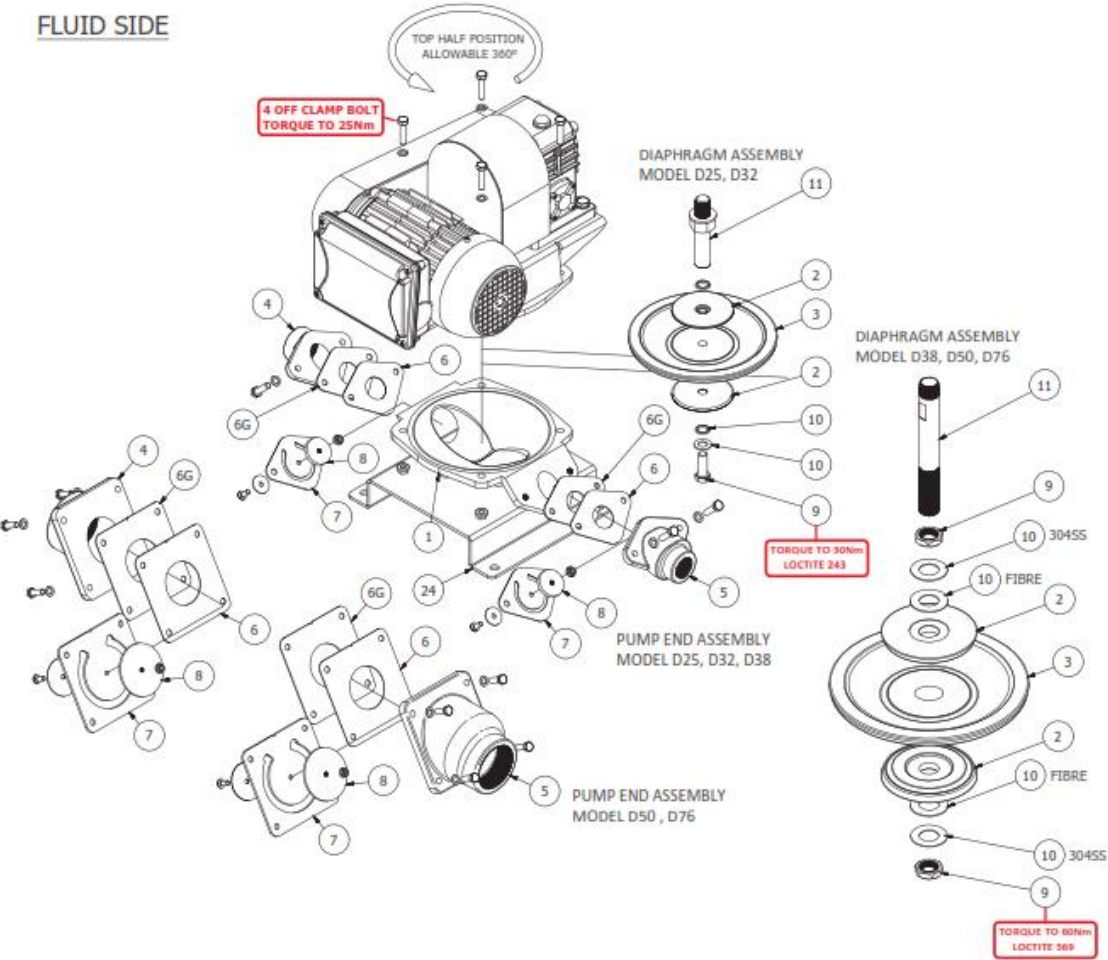
FIG. 1 CORRECT DIAPHRAGM ORIENTATION - WRITING UP

FIG. 2 INSTALLED DIAPHRAGM POSITION AT BOTTOM OF STROKE

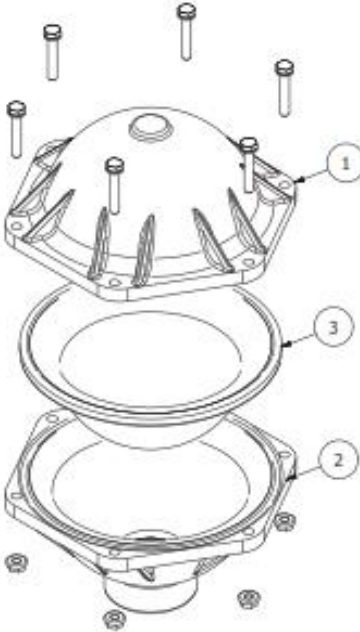


D SERIES PUMP PARTS LIST		
ITEM	DESCRIPTION	QTY.
1	Bowl Casing	1
2	Diaphragm Plate	2
3 *	Diaphragm	1
4	Suction Valve Body	1
5	Discharge Valve Body	1
6 * #	Valve Seat - Stainless	2
6G * #	Valve Seat Gasket - Rubber	2
7 * #	Flap Valve	2
8 * #	Flap Valve Weight Set	2
9	SS Bolt / Nut	1 / 2
10 *	Washer Set	1
11	Connecting Rod	1
12	Drive Support Housing	1
13	Gear Reducer	1
14	Eccentric Block Assembly	1
15	Eccentric Housing	1
16	Eccentric Bearing	1 OR 2
17	Eccentric Bolt & Spacer	1
18	Circlip	1
19	Gear Reducer Pulley	1
20	Motor Pulley	1
21 *	V-Belt	1 OR 2
22	Gaurd Assembly	1
23	Carry Frame	OPT.
24	Base Plate	1
25	Motor	1
VA	Valve Assembly	2
K1	Service Kit	1
* Part Included in K1 Service Kit		
# Part Included in VA Valve Assembly		
For ordering Part No. = Model - Item No.		

FLUID SIDE



PD1 & PD2 PULSATION DAMPENER PARTS LIST	
ITEM	DESCRIPTION
1	Top Half
2	Bottom Half
3	Diaphragm



DIAPHRAGM ORIENTATION
Discharge - Concave (as shown)
Suction - Convex



Continuous Media System Operating Manual



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1 INTRODUCTION

Thank you for purchasing your Enviroconcepts Continuous Media System. This manual has been prepared to help you to understand, set up, operate and troubleshoot your system. This package has been designed so that minimal maintenance will be needed to keep it operating efficiently.

Before operating the user should be thoroughly familiar with equipment operation, limitations and hazards. Thoroughly read, understand and observe all safety and operating instructions. Please note – system components may vary with your particular system; please disregard/ignore system component instructions that are not relevant to your system. If you are unsure, please contact Enviroconcepts.

1.1 Initial Handling and Inspection

By following the instructions, you will have opened the equipment and found it to be in good condition or damaged.

If the equipment was delivered to you by a common carrier and damage is found, even hidden damage, **IMMEDIATELY** file a claim with your carrier. Their representatives must inspect and verify the damage. It is your responsibility, not Enviroconcepts, or your distributors to file the freight damage claim.

Check the enclosed packing list to verify that all items have been received. Contact your distributor or Enviroconcepts if assistance is needed with common carriers, identification of parts or installation process.

1.2 Important Notice

The following information is necessary for installation, parts, service and warranty consideration.

This information is specific to your equipment.

Serial Number _____ Model Number: _____

 **IMPORTANT:** Any electrical work must be undertaken by a qualified electrician; this unit will come as a package and will be installed by our technicians.

 **IMPORTANT:** Always follow the MSDS, SWMS and any JSAs specific to your site prior to undertaking any system changes that cause any harmful effects.

 **WARNING:** Observe and do not remove any warning and safety labels on the system.

 **WARNING:** All guards, shields and covers must be in place to prevent accidental contact with hazardous parts.

 **WARNING:** Never stand in water when cleaning, contacting or working with electrically powered equipment.

 **WARNING:** Verify the correctness of all electrical connections, especially check for proper electrical ground before servicing or operating this equipment.

 **WARNING:** Please do not attempt to service your ECCU as hazardous voltages are contained within.

2 TRANSPORTATION & STORAGE

2.1 Receiving and Inspection of the Equipment

Depending on the product, the equipment may be delivered fully assembled or in flat pack form for local assembly.

2.2 Typical Loading and Unloading of the Equipment

Before doing any work, an appropriate lift study needs to be undertaken by a qualified person before commencing the lift. The lifting procedures specified in this manual are only generic guidelines and should be received for suitability depending on actual site conditions.

2.3 Typical Transportation of the Equipment

When transporting the equipment, the following procedure must be followed.

1. Strap securely over the top in two directions minimum.
2. Wherever possible, the loads should be tarped to reduce damage to equipment due to wind shedding.

3 OPERATOR SAFETY

Do not operate the equipment without the proper instructions as given inside this manual. When in doubt ask! Remember that the equipment may operate automatically and can start at any time, isolate any equipment before working on it or asking others to work on it.

The CMS liquid filtering system is engineered to provide continuous filtration, helping removing solids down to acceptable levels for discharge for reuse in a closed loop system. The CMS may be used as an individual filtering system or combined with other Enviroconcepts components to provide more specialised filtration. Many safety features have been integrated into its design to help protect the operator, however there are potential hazards involved with its use. Please read these safety instructions carefully.

The CMS liquid filtering system is engineered to provide continuous filtration, using filter media with nominal pore size of 1 to 50 microns. Applications include filtration of wastewater which results from washing vehicles, ground support equipment, aircraft, reclaiming coolant/lubricants used in machining and grinding operations, dewatering of waste sludge etc.



WARNING: Water discharged from this system is not designated, nor should it be used, for human consumption! Reusable discharged water may be utilised by pressure washers or other like equipment

The user is expected to maintain an operational record of this filtration system. This record should include all maintenance performed and should list component parts of the system which are replaced. This record should also include the replacement of filters and filter media.

3.1 Chemical Safety

Many commonly used chemicals react violently when exposed to water or mixed with other chemicals and may create heat and/or explosive or noxious vapor hazards. Such material must be isolated from the process area or be contained in waterproof containers.



WARNING: YOUR WARRANTY MAY BE VOIDED IF CHEMICALS NOT APPROVED ARE USED IN YOUR SYSTEM. CERTAIN CHEMICALS MAY HAVE ADVERSE EFFECTS ON YOUR EQUIPMENT OR BE DANGEROUS TO USE.



THIS SYSTEM IS NOT DESIGNED TO BE USED WITH SOLVENTS, FLAMMABLE OR NONFLAMMABLE.

Be careful not to inhale or ingest effluent liquids or vapor. Be aware of proper application procedures, required safety equipment, and recommended disposal procedures for the chemicals being introduced to the system.

Maintain an understanding of first aid techniques related to exposure. Make sure that Safety Data Sheets (SDS) are readily available on all products associated with this process.

3.2 Make it safe first.

Always make the unit safe by flushing out any chemical residues from the pumps and pipelines and isolating the equipment.

Always electrically isolate the equipment and switch off the local isolator **before** you dismantle any electrical equipment. Remember that equipment can be turned on by accident.

Do not undertake any works unless the consequences are carefully thought through. Many pipelines contain chemicals or effluent under pressure even when the equipment has been shut down for some time.

The personnel responsible for the installation, operation and maintenance of the equipment must be appropriately qualified for relevant activities which may include; electricals, plumbing, working at heights, working in confined spaces, etc.

All warranties and guarantees with respect to the function and durability of the equipment shall be void should the operator fail to adhere to these safety instructions or any other instructions within this guide.

The associated risks due to failure to adhere to these safety instructions include but are not limited to:

1. Endangering people due to electrical, mechanical, and/or chemical/biochemical hazards.
2. Endangering the environment due to leakage of hazardous material (where chemicals are involved).
3. Failure of important equipment and process functions leading to inferior performance.
4. Biological hazard protocols should be followed as per type of wastewater being treated and standard industry guidelines.

3.3 Before Operating

The user should be thoroughly familiar with equipment operation, limitations, and hazards. Thoroughly read, understand, and observe all safety and operating instructions. Please note – system components may vary with your system please disregard/ignore system component instructions that are not relevant to your system. If you are unsure, please contact Enviroconcepts.

4 INSTALLATION

4.1 Location

NOTE: Observe all local codes during installation.

Systems are designed for use in dry, clean locations with access to adequate ventilation, protected from wind, rain, snow and extreme temperatures. Install the unit with consideration to the location of the water supply, electrical source and access for maintenance.

When installed, there should be adequate free space on all sides of the unit to provide access so that maintenance can be performed without moving the unit.

If multiple filtration units are to be used, understand the proper flow of effluent between each unit prior to the positioning of the units.

4.2 CMS Options

The CMS may be purchased with three available options. These options are listed below along with a brief description of each.

Auto-discharge Option: This option enables the CMS to automatically pump the filtered fluid from the unit. The option includes a float switch operated sump pump, and various fittings to retain the pump in the provided location and connect the line to the output device. Longer lengths of pipe may be specified at the time of order. The pump is installed in the lower filter basin and secured into place. Power to the sump pump must be supplied by a switched outlet on the filtration system that the CMS will be connected to, or by a constant 240V outlet if the discharge is directed to drain or tank that doesn't require control of the inlet supply.

If the pump will be powered by a switched circuit on a supplied system, refer to the wiring diagram of this system to determine connection points for the pump.

Media Catch Container:

(Ref; Image at page 9.0)

The CMS media catch container includes a stainless scrapper and heavy-duty tray that guarantees the media is removed from the belt and retained to the container when the soiled media is advanced by the system. This optional container is easily installed with the provided hanger and can be removed when the media is disposed of.

Container Lid:

(Ref; Image at page 9.0)

To stop wind & rain from entering & disperse.

4.3 Filter Preparation

Make a visual check of the CMS to verify that all the components are properly located and joined. Make certain that all pipe connections are tight, and that all valves are adjusted properly. Once all components have been plugged in, the system power cord may be connected to its power source. Turn the system switch "on" if applicable and actuate the float switch (located midway above the conveyor belt) to test the operation of the drive components.

Do a final check of the unit to verify the following:

- Hoses and cords are not kinked or damaged and are protected from vehicle traffic and sharp objects.
 - All float switches are operational, clean, and move freely.
 - Drain ball valve is closed.
1. Insert the paper roll and locate to the fixed guide bush, then insert the removable guide bush from another end and locate to the roll. Make sure the paper will unroll from the bottom of the roll and up onto the belt.
 2. Unroll filter paper and guide it in between the guide rails on both sides of the tank just above the conveyor belt.
 3. Use your hand to help guide the paper between the conveyor belting and the side seals, advance the media by lifting the float assembly located above the belt until the filter paper exits from the other end.
 4. Advance the filter paper several centimeters and check for proper operation (i.e. paper feeding properly between conveyor belt and the side seals, float operation). Straighten the paper if necessary. Adjust your float switch so that it comes on when your water level is about 6-8cm above the belt and it turns off when the water level is about 4-6cm above the belt.
 5. Fill the CMS basin with water and check the operation of the lower float switch. This float switch should be set to turn on when the water level is about 15cm from the pump base and turn off when the water level is about 2-3cm from the base of the tank.

NOTE: If the CMS is operating as a pre-filter for another filter system, refer to the manual included with the secondary filter system for inflow port location and to determine if the CMS will be plugged into a switched outlet

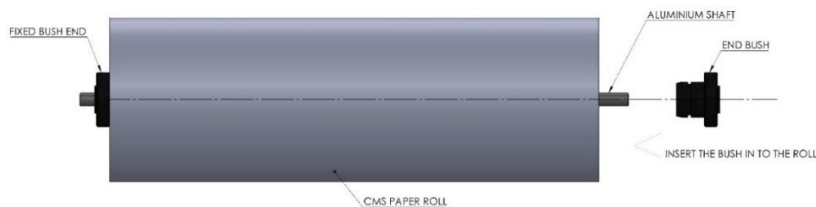
on the secondary filter or connected to terminal supply points. Supplied filters always provide switched power supplies to control inlet flow and avoid overflow conditions.

6. The CMS filtering unit should now be operational.

NOTE: The maximum vertical lift of the sump pumps supplied with the options on this unit is about 4 metres. Higher discharge pressures may be provided. If required, please contact Enviroconcepts International Pty Ltd.

4.4 Removing or Replacing the filter paper roll.

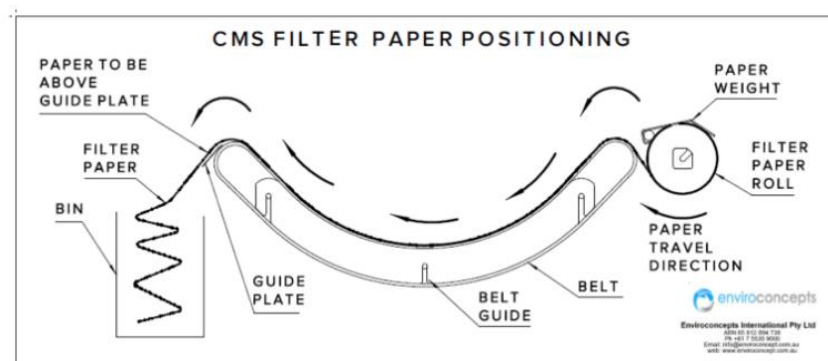
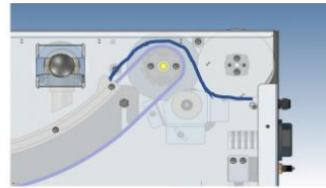
1. Lift the paper roll unit from one side and slide out.



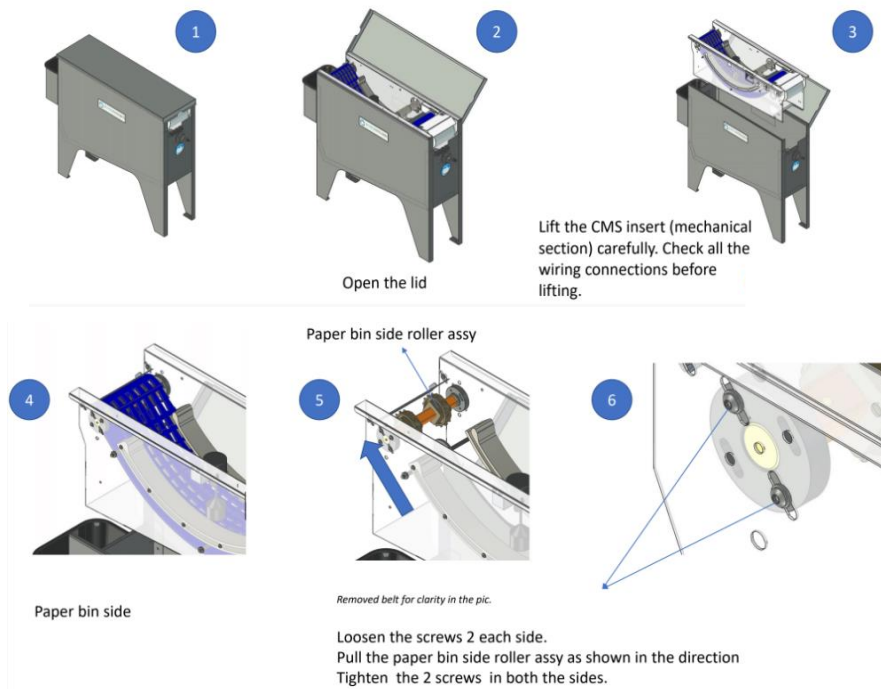
2. Remove the end bush from the used roll and re-insert them into the new filter media supply roll.
3. Re-install the supply roll unit. Insert the rod end into the shaft holder hole and drop the other end in to the slot. Note: Install the paper so it unwinds from the bottom.
4. Finish by advancing the paper across the conveyor – Place the paper on top of the conveyor, lift the conveyor float with one hand while using the other hand to help feed the paper between the conveyor and media guide bar. Make sure the paper is still unwinding from the bottom.
5. Continue feeding the paper across the conveyor. HINT: wetting the paper may help during advancing.
6. Run the conveyor until the paper extends to the catch container.

4.5 CMS Paper Folding Issue

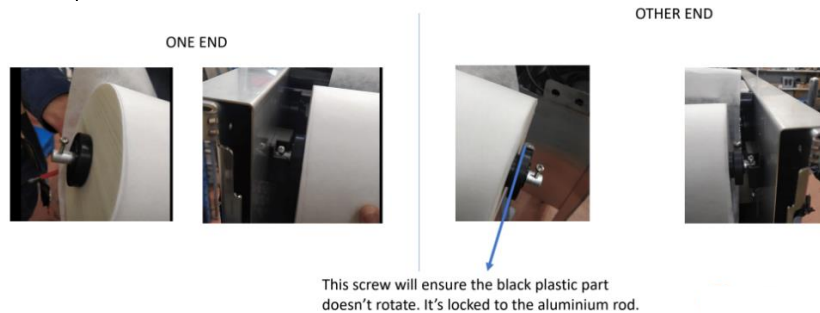
1. The unit should be completely cleaned at least once per month. Do this thoroughly before commencing.
2. Check filter paper feed direction to feed under the filter roll to the belt not over the filter roll.



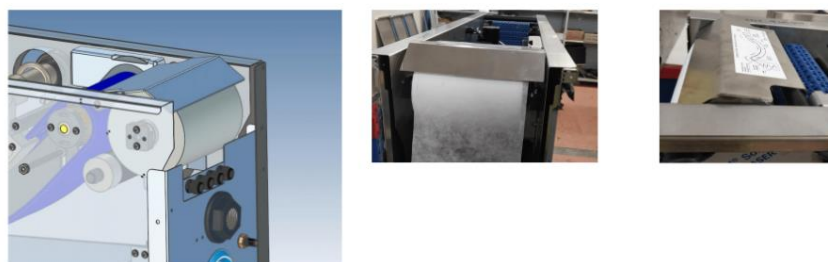
3. Check the conveyor belt is slack (or not stiff)
4. If slack, tighten as per instruction below



5. Ensure screws are as per below



6. Ensure the unit has paper roll holder in place in the correct direction



5 OPERATION

1. Make certain all valves are positioned for proper flow.
2. Fluid to be filtered will automatically begin flowing into the unit to be processed.

6 SHUT DOWN

1. Turn off the system switch.
2. If the system is to be in long term storage, drain the system of all water, disconnect from electrical supply and clean.

The system will operate best at temperatures above freezing. It is not recommended for operation in cold conditions. If shipping or storing in freezing conditions, make certain all fluid is drained from the system.

7 MAINTENANCE & SERVICE



WARNING: Turn the system off and disconnect from power to assure that the unit is not inadvertently started during servicing.

7.1 Cleaning

This unit requires periodic cleaning to maintain proper operation. Fine materials that pass through the filter media can attach to the conveyor belt and build a layer of sediment on the bottom of the basin.

The CMS may be cleaned using a wet or damp cloth. The stainless-steel tank may be polished using any stainless-steel cleaner or window cleaner.

Water from a hose can be used to clean out the base

7.2 Electrical Cords

Replace any cords if they are frayed or if the insulation is broken, if a cord or cord connection becomes worn during operation, a device is not operating properly or a poor connection is indicated. Repair or replace as necessary.

7.3 Liquid Level Control Sensors

Two level sensors (float switches) are installed on the unit. One switch monitors the fluid level above the filter media and activates the drive system to advance the media when the media becomes blocked with solids. The other monitors the fluid level in the main housing or basin and controls power to the switched outlet that powers the sump pump. The supply pump or valve powered by the switched outlet is turned off when the housing is full of fluid.

The basin level sensor requires an initial low-level adjustment to ensure that it works properly with the discharge sump pump, its upper limit position is set.

Maintenance consists of inspecting to see that the level sensors move freely and are not coated with any substance that would change their weight, or their ability to move freely. When necessary, clean the vertical shaft and the float to allow free movement.

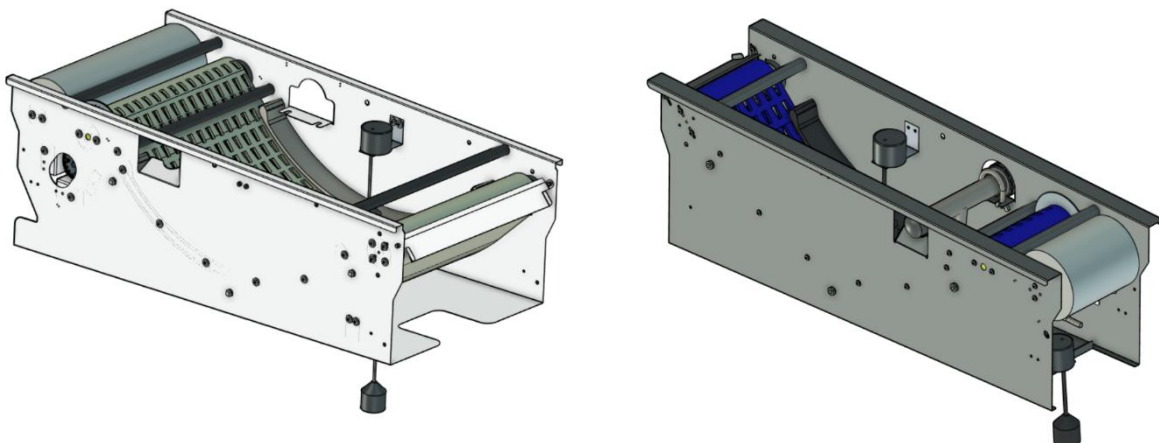
7.4 Pumps

Check for cracks, blisters, cuts, leaks and chafing. Replace as necessary.

7.5 Drive Components (lift out belt drive unit)

The driving system on the CMS consists of the electrical motor, sprockets, and the conveyor belt.

All the drive components are fitted to a detachable unit. The unit can be taken out from the shell by lifting out vertically for maintenance and for replacing the parts. The electrical gland plate is fitted on to the tank wall, this can be pulled out before the unit is removed from the main body.



Gear Motor (always used a licensed electrician to check electrical components)

Check for dirt accumulation, unusual noise or vibration, overheating, high current, poor wiring, and loose or overheating connections. Clean, repair and replace as necessary.

If the motor will not operate (nothing happens when the power is on and the level switch above the filter paper is actuated) check for:

- Power supplied at the wall outlet.
- If power is supplied to the level switch and it doesn't pass when it is actuated, replace the switch.
- If it is noted that the gear motor is receiving power, but is not rotating, ensure that the motor shaft is positioned correctly within the gear. The keyway should be aligned to transmit the motion of the motor to the sprocket. Correct if necessary.

Sprockets

The drive system gears should mesh correctly to transmit the motion from the motor to the CMS conveyor belt. The large sprocket should sit between the side plates of the pinion gear.

If the teeth of the large gear are making contact with the pinion side plates, adjust the motor mounting bracket to ensure the gears are aligned parallel.

NOTE: Ensure that the guard plate on the large gear is always in position while the CMS is in operation. This prevents objects from becoming caught in the drive system.

Conveyor Belt

It is important to provide proper conveyor belt tension. If the belt is too tight, the resistance applied to the drive system becomes excessive and the sprockets may become unmeshed. If the belt is too loose, fluid will flow between the media and the side seals bypassing the filter media entirely. In extreme conditions, the belt may jump off its drive sprockets and fail to advance.

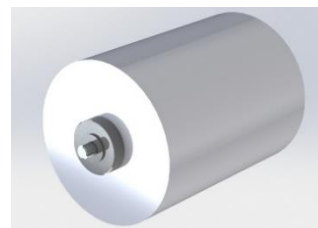
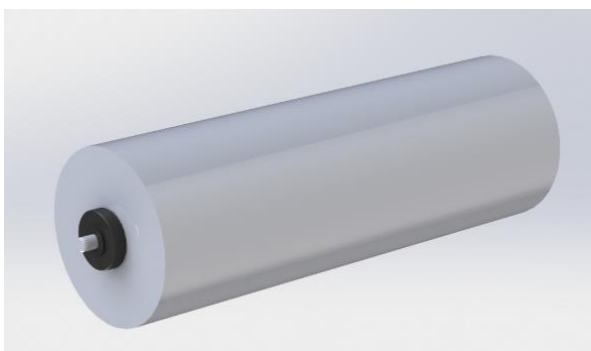
The conveyor belt advances when the level of fluid on the filter media is deep enough to activate the liquid level sensor. The weight of the liquid keeps the media against the conveyor belt.

The conveyor belt normally does not require any adjustments; however, slots are provided at each end to allow for repositioning of the shafts.

7.6 Filter Media

The filter media provided with the CMS has a nominal 15 +/- micron rating.

Pictured below is the filter media for the CMS 100 and the CMS 30.



8 MAINTENANCE CHECKLISTS

8.1 Daily

1. Check supply of media roll and replace media paper when necessary.
2. Check for any visible tears in the filter media paper. If any tears are found, advance the filter media paper past the tears by lifting the float ball on the float valve located above the filter media paper.
3. Empty filter media paper catch container as necessary.
4. Clean scraper blade that is attached to the filter paper media catch container.
5. Visually inspect equipment for leaks.

8.2 Weekly

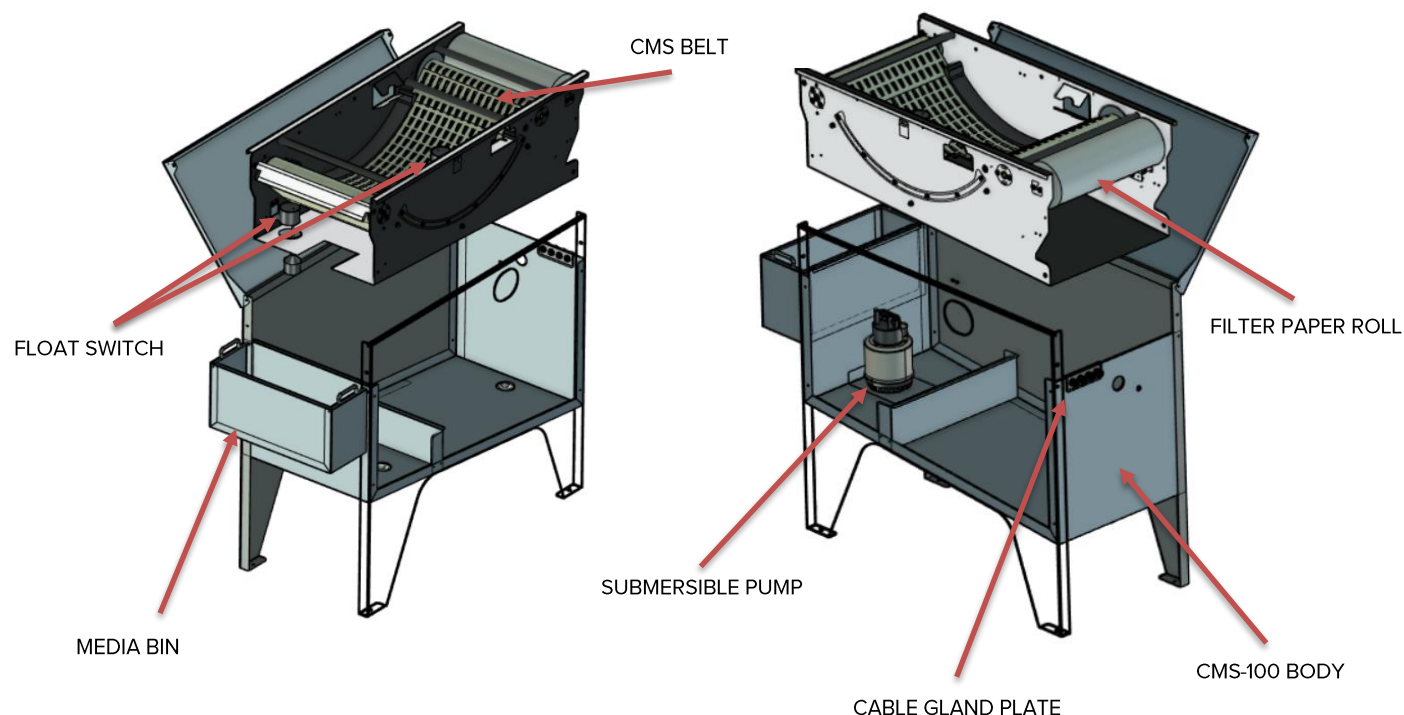
1. Flush or vacuum solids from the container. Open ball valve drain valve on rear of CMS for 1 minute, to allow accumulated solids to flow into the drain line.
2. Check floats and pumps for proper operation.

8.3 Suggested Maintenance Stock Items

The following list represents the suggested stock items that may be required in maintaining the CMS Filtration system.

PAPER MEDIA

Unit	Part No.	Description
50 metres	MEDIAPAPER	Filter, Media, 15Mic x 50m





Oil Water Separator Operating Manual

Rev 2 18/09/2018



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1 INTRODUCTION

Thank you for purchasing your Enviroconcepts, OWS. This manual has been prepared to help you to understand, setup, operate and troubleshoot your system. This package has been designed so that minimal maintenance will be needed to keep it operating efficiently.

Before operating the user should be thoroughly familiar with equipment operation, limitations and hazards. Thoroughly read, understand and observe all safety and operating instructions. Please note – System components may vary with your system please disregard / ignore system component instructions that are not relevant to your system. If you are unsure, please contact Enviroconcepts.

1.1 Initial Handling and Inspection

By following the instructions, you will have opened the equipment and found it to be in good condition or damaged.

If the equipment was delivered to you by a common carrier and damage is found, even hidden damage, IMMEDIATELY file a claim with your carrier. Their representatives must inspect and verify the damage. It is your responsibility, not Enviroconcepts, or your distributors to file the freight damage claim.

Check the enclosed packing list to verify that all items have been received. Contact your distributor or Enviroconcepts if assistance is needed with common carriers, identification of parts or installation process.

1.2 Important Notice

The following information is necessary for installation, parts, service and warranty consideration.

Serial Number _____ Model Number: _____

1.3 Your legislative requirements.

Customers purchasing these products will be subject to trade waste charges. These charges may vary between different water or sewer service providers in each circumstance.

You will need to ensure you have trade waste approval prior to installation.

Contact your local sewerage network provider for proper instruction and advice.

-  **IMPORTANT:** Any electrical work must be undertaken by a qualified electrician.
-  **IMPORTANT:** Always follow the MSDS, SWMS and any JSAs specific to your site prior to undertaking any system changes that cause any harmful effects.
-  **WARNING:** Observe and do not remove any warning and safety labels on the system.
-  **WARNING:** All guards, shields and covers must be in place to prevent accidental contact with hazardous parts.
-  **WARNING:** Never stand in water when cleaning, contacting or working with electrically powered equipment.

2 Transportation & Storage

2.1 Receiving and Inspection of the Equipment

Depending on the product, the equipment may be delivered fully assembled or in flat-pack form for local assembly. Upon delivery, immediately inspect the goods and report any visible damage. Notify Enviroconcepts of any defect or damage and include photographic evidence.

2.2 Typical Loading/Unloading of the equipment

Before doing any work, an appropriate lift study needs to be undertaken by a qualified person before commencing the lift. The lifting procedures specified in this manual are only generic guidelines and should be reviewed for suitability depending on actual site conditions.

Planning, selection and operation of crane must be done in accordance with AS/NZS 2550.1-2011. Check the empty equipment weight and select appropriate rated and sized lifting equipment.

3 Operator Safety

When in doubt, contact Enviroconcepts on 1300 661 130.

Remember that the equipment may operate automatically and can start at any time. Isolate any equipment before working on it or asking others to work on it.

3.1 Make it safe first.

Always make the unit safe by flushing out any chemical residues from the pumps and pipelines and isolating the equipment.

Always electrically isolate the equipment and switch off the local isolator **before** you dismantle any electrical equipment. Remember that equipment can be turned on by accident.

Do not undertake any works unless the consequences are carefully thought through. Many pipelines contain chemicals or effluent under pressure even when the equipment has been shut down for some time.

All warranties and guarantees with respect to the function and durability of the system shall be void should the operator fail to adhere to these safety instructions or any other instructions within this Guide.

The associated risks due to failure to adhere to these safety instructions include but are not limited to:

1. Endangering people due to electrical, mechanical, and/or chemical/biochemical hazards.
2. Endangering the environment due to leakage of hazardous material (where chemicals are involved).
3. Failure of important equipment and process functions leading to inferior performance.

3.2 Before operating.

The user should be thoroughly familiar with equipment operation, limitations, and hazards. Thoroughly read, understand, and observe all safety and operating instructions Please note – System components may vary with your system please disregard/ignore system component instructions that are not relevant to your system. If you are unsure, please contact Enviroconcepts on 1300 661 130.

4 APPLICATION DESCRIPTION

Wastewater will enter the above-ground ECOWS where free oils will coalesce and float to the surface and overflow the oil outlet pipes to a waste oil drum. Heavy suspended solids will settle and sink into the base hopper where they can be evacuated manually by ball valve, generally back to the pit the wastewater originated from. The pre-treated effluent will continue through to the outlet funnel where it will evacuate by gravity for discharge or further processing.

5 DESIGN CONDITIONS

ECOWS-030 - Maximum Inlet Flow Rate	1,800 L/hr
ECOWS-050 - Maximum Inlet Flow Rate	3,000 L/hr
ECOWS-100 - Maximum Inlet Flow Rate	6,000 L/hr

This range of units have the following design parameters:

Oil Types	Engine Oil, Gasoline, Diesel, Lubricant, etc.	
Typical Oil SG	0.85 @ 25 °C	(note: will vary depending on oil type and temperature)
Operating Temperature	25 °C	(note: temperature affects OWS performance)
<u>See below typical performance,</u>		
Inlet Oil Concentration	100 ppm	
Outlet Oil Concentration	< 5 ppm(Inlet by Gravity Flow)	
	< 10 ppm	(Inlet Diaphragm Pump, less than 60 strokes per minute)
	< 15 ppm	(Inlet Progressive Cavity Pump, > 1,000 revs per minute)
	< 30 ppm	(Inlet by Centrifugal Pump, less than 1,800 revs per minute)
Inlet Oil Concentration	750 ppm	
Outlet Oil Concentration	< 25 ppm	(Inlet by Gravity Flow)
	< 50 ppm	(Inlet Diaphragm Pump, less than 60 strokes per minute)
	< 75 ppm	(Inlet Progressive Cavity Pump, > 1,000 revs per minute)
	< 150 ppm	(Inlet by Centrifugal Pump, less than 1,800 revs per minute)

Typical wash bay effluent will be in the 50-200 ppm range. Some industrial trade wastewater may be higher.

No chemical emulsions, surfactants, detergents or water-soluble degreasers should be present.

If required, only Quick Break and Biodegradable Detergents and Degreasers may be used and only in minimal quantities.

The application and type of wastewater, including chemicals added in the process, will vary the expected output.

6 PRINCIPLES OF OPERATION

Like all gravity separators, the ECOWS range depends on Stokes' Law for its performance prediction. Stokes' Law is the physical law governing the settling or rise rate of a particle or oil droplet in a fluid stream and along with various design parameters, determines the size and type of OWS unit.

Contaminated water is introduced into the first section of the OWS via gravity flow. Heavy solids settle out immediately and fall into the hopper, whilst large oil particles rise to the surface.

The remaining oily water mixture flows through the closely spaced proprietary oleophilic coalescing plates with the smaller oil droplets and fine suspended solids being progressively separated. An oil dam prevents the collected (floating) oil from escaping into the outlet pipe. Adjustable Oil skimmers are provided for the removal of the accumulated oil.

Pre-Treated Effluent water passes underneath the base of the oil dam, over the outlet weir (funnel) and gravitates to the point of discharge

7 INSTALLATION INSTRUCTIONS

PLEASE REFER TO THE INSTALLATION GUIDELINES IN DIAGRAM ON PAGE 12.

The basic steps for installation of the OWS are as follows:

1. Select a sound, level foundation for locating the OWS.
2. Secure to the foundation with 10-12mm diameter corrosion resistant fasteners.
3. Connect the clean water outlet pipe to the outlet connection of the OWS.
4. Connect the oil outlets from the oil skimmers to the oil collection drum or tank. A normally open valve may be installed in the oil outlet line, if required for isolation purposes.
5. Install a ¼ turn valve on the solids outlet at the base of the hopper. If required install piping back to the dirty water collection tank or a sludge drying pit if available.
6. All pipe work is to be independently supported, not supported by the separator connection nozzles.
7. When installing a bund, its minimum capacity should be equal to the volume of your unit. (ECOWS-030 = 185 Litres, ECOWS-050 = 200 Litres, ECOWS-100 = 441 Litres) and drain back into the dirty water collection tank.

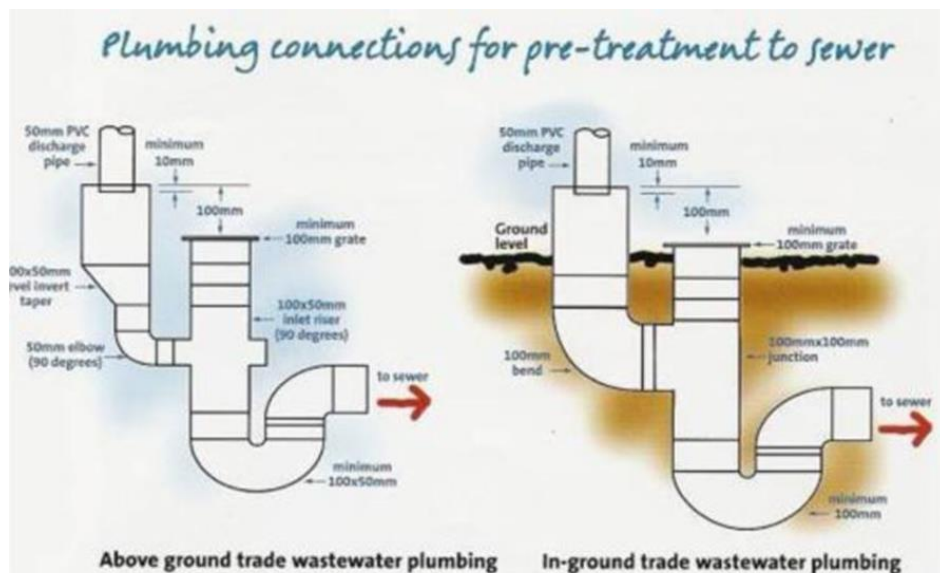
Fitting Sizes

ECOWS-030 and ECOWS-050

- The dirty water inlet and clean water outlet are in 40mm BSP threaded female connections.
- The solids outlet is 50mm BSP threaded female connections.
- The two oil skimmer outlets are 25mm BSP threaded male connections.

ECOWS-100

- The dirty water inlet and clean water outlet are in 50mm BSP threaded female connections.
- The solids outlet is 50mm BSP threaded female connections.
- The two oil skimmer outlets are 40mm BSP threaded male connections.



8 OPERATING INSTRUCTIONS

Initial Startup

This procedure is to be followed after installation or after the unit has been drained, cleaned and is ready to be brought back into operation.

1. Ensure that the waste water inlet is not allowed to flow by isolating the feed pump or gravity feed.
2. Set the oil skimmers high, approx. 35mm above the threaded oil skimmer pipe. Ensure that there are no obstructions in the oil or water outlet piping and remove any foreign matter if necessary.
3. Ensure Oil Waste drums are empty and in place
4. Ensure all fittings are tight and secure.
5. Fill the OWS with clean water until water starts to flow over the outlet weir (funnel).
6. Check for leaks or blockages at the outlet.
7. Now allow the inlet water to enter under typical conditions. If you typically use a pump, make sure you use the pump. This way you can set the oil outlet skimmers at the correct height under normal operating conditions.
8. Note there are two oil skimming outlets. One at the entry end, one at the outlet end. They will be set at different levels. After the pump has primed & then operated for several minutes, set the top of the inlet oil skimmer socket approximately 5mm above the high water level and the discharge end approximately 3mm above the maximum operating water level by screwing the sockets up or down. Secure the lock nuts on each skimmer socket to ensure no movement.
9. Skimmers can be adjusted if necessary but remember that it is always acceptable for an oil layer of approximately 5-10mm to be maintained on the surface.
10. Always adjust oil skimmers relating to the MAXIMUM water level (i.e. at full flow conditions). Note that diaphragm pumps pulse the water level. It is important you set the skimmers based on the highest water level.

9 MAINTENANCE

The solids should be drained fortnightly by opening the valve on the solids hopper until solid free water is flowing (i.e. all the accumulated solids have been removed, usually a few seconds when fully open). Note: Any waste to be disposed of should be collected by a suitable contractor.

It is recommended that the unit be serviced regularly, the frequency being determined by the amount of solids built up in the plates at the time of the first inspection, which should take place approximately 3 months after installation.

A thin oil film present on the plates is normal. Cleaning need only be carried out if the plates are blocked by an oily sludge.

9.1 Inspecting & Servicing

1. The flow to the separator must be isolated before any servicing.
2. The oil skimmers can be lowered to remove accumulated oil from the surface of the OWS. The skimmers must be raised back up to the operating position.
3. Remove the plates by lifting slowly, allowing the water to drain back into the OWS.

Visual inspection will determine the amount of solids built up in the plates. If any of the plates appear to be silted up or partially blocked, they can be cleaned in one of the two following methods:

Method 1 – Cleaning In Situ

1. Makes sure the inlet flow is isolated during servicing.
2. Lower the plates back into the OWS and drain the water through the solids valve on the bottom of the hopper back into the collection tank or other suitable storage tank.
3. Hose down the plates with a hose or pressure washer until all sludge and oil has been removed. Remove any built up solids by hosing underneath the packs, ensuring no sludge remains in the OWS.
4. Follow Initial Start-up instructions above to return to operation.

DO NOT USE ANY DETERGENTS

Method 2 – Cleaning in a Bunded Area

1. Makes sure the inlet flow is isolated during servicing.
2. Drain the OWS through the solids valve on the bottom of the hopper back to the collection tank or gutter.
3. Remove the plate packs from the OWS and place into Bund or on the washbay.
4. Hose the plates thoroughly (in a bunded area draining back into the collection tank), ensuring any built up sludge is removed.
5. Hose the inside of the OWS, ensuring all collected sludge and oil is removed.
6. Replace cleaned plate packs back into the OWS and fill with clean water until water starts to flow over the outlet weir.
7. Follow Initial Start-up instructions above to return to operation.

DO NOT USE ANY DETERGENTS

9.2 When to Service your OWS?

Often, the service timeline requirements are dictated by your local governing authority. However, if there is no preset rules or guidelines, the quantity of sludge found in the hopper and in the plates can be used as a basis for determining the interval between subsequent cleaning operations.

A thin film of oil on the surface of each plate is normal. As is a 5-10mm crust of oil scum on the surface of the separator. The only main maintenance function is to ensure the plates cells are kept free of blockage to ensure the coalescing continues without obstruction.

If you carried out your first service at 3 months, and the plates were relatively clear and free of obstruction, you can consider making the next service date 4 months. Then you may push the next date out 5 months depending on what you find on the next service.

Collection Tank Cleaning:

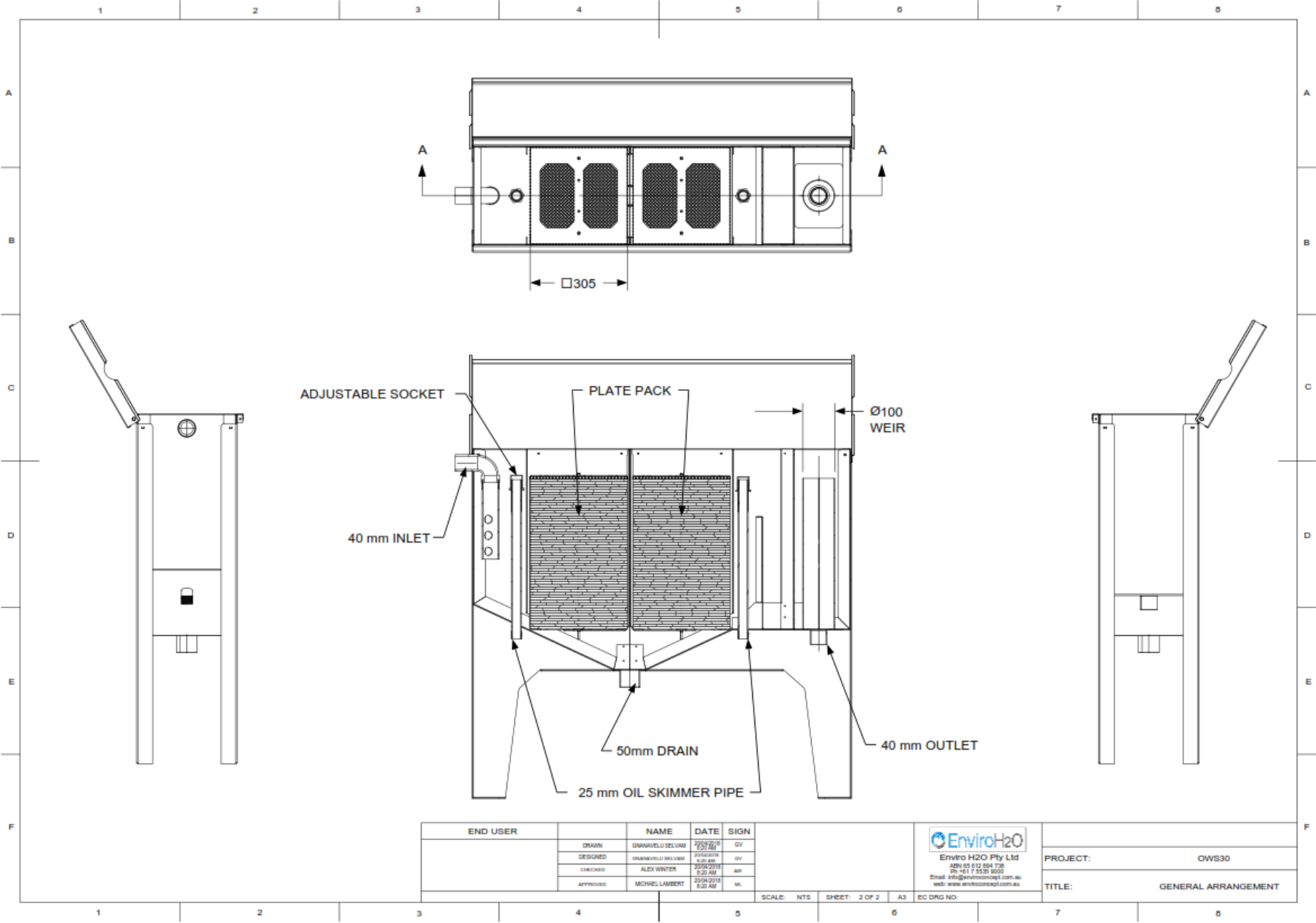
At frequencies, depending upon the build-up of sludge and oil, the collection tank should be emptied (sucked out by a suitable contractor) and cleaned so that all sludge and oil has been removed. Scrape the walls of the collection tank to clean if necessary.

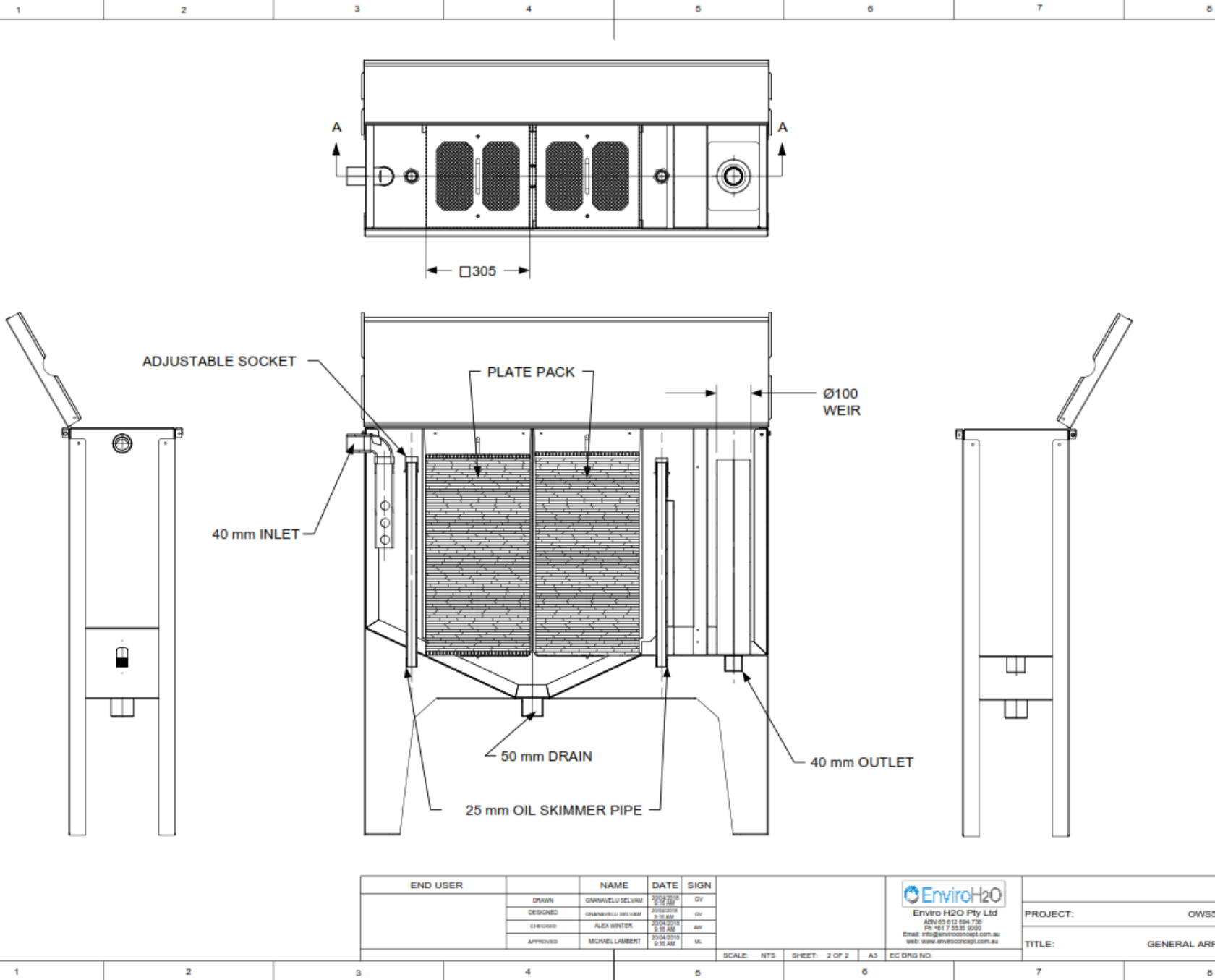
10 SPARE PARTS

No spare parts are required for this unit. Should any plates or oil skimmer parts become damaged they can be repaired or replaced by contacting your supplier.

11 Drawings

- a) ECOWS-030
- b) ECOWS-050
- c) ECOWS-100
- d) INSTALL GUIDELINES





END USER		NAME	DATE	SIGN
	DRAWN	GRANAVELU SELVAM	20/06/2018	GV
	DESIGNED	GRANAVELU SELVAM	20/06/2018	GV
	CHECKED	ALEX WINTER	20/06/2018	AW
	APPROVED	MICHAEL LAMBERT	20/06/2018	ML

SCALE: NTS

SHEET: 2 OF 2

A3

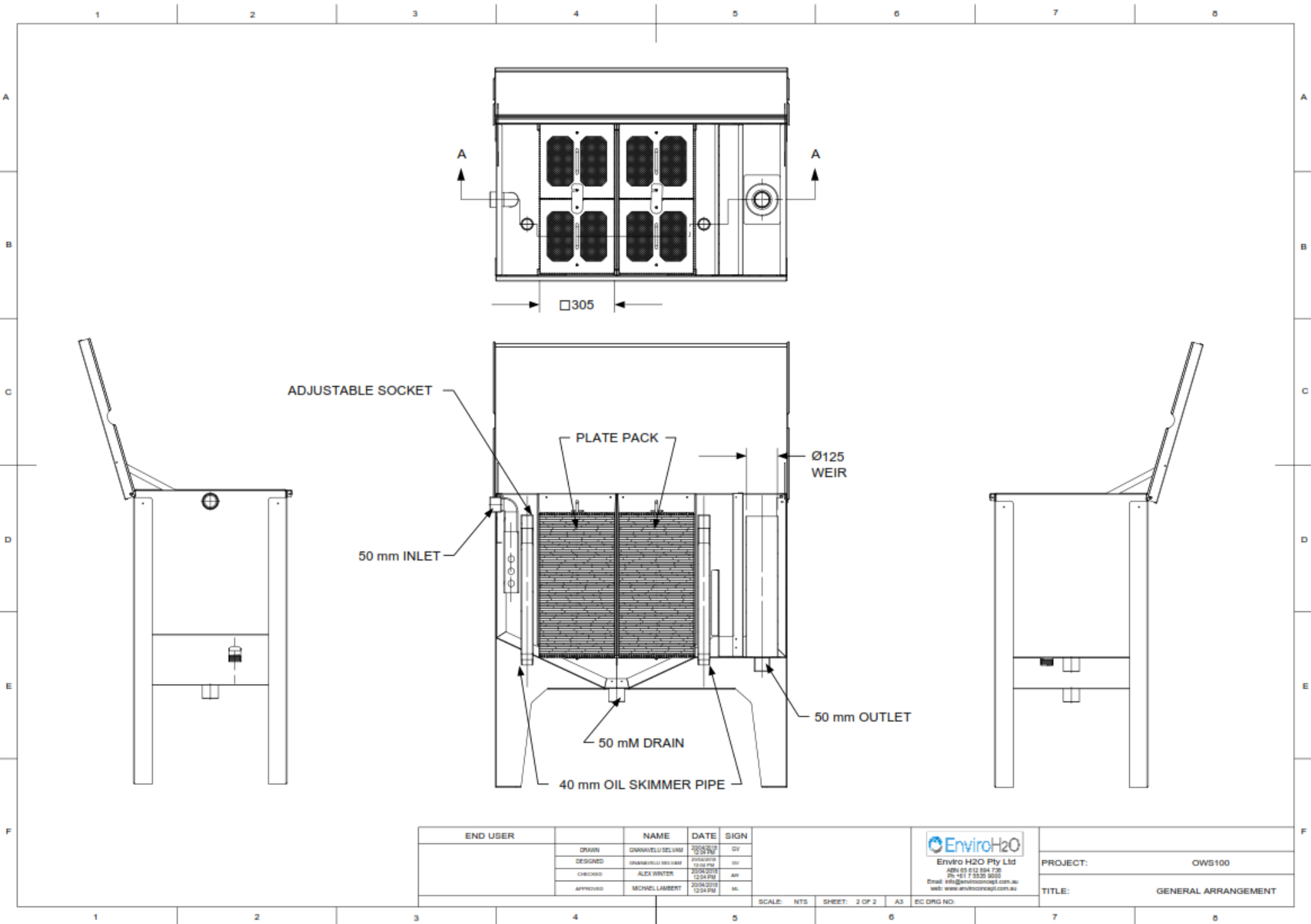
EC DRG NO:



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Email: info@enviroconcept.com.au
web: www.enviroconcept.com.au

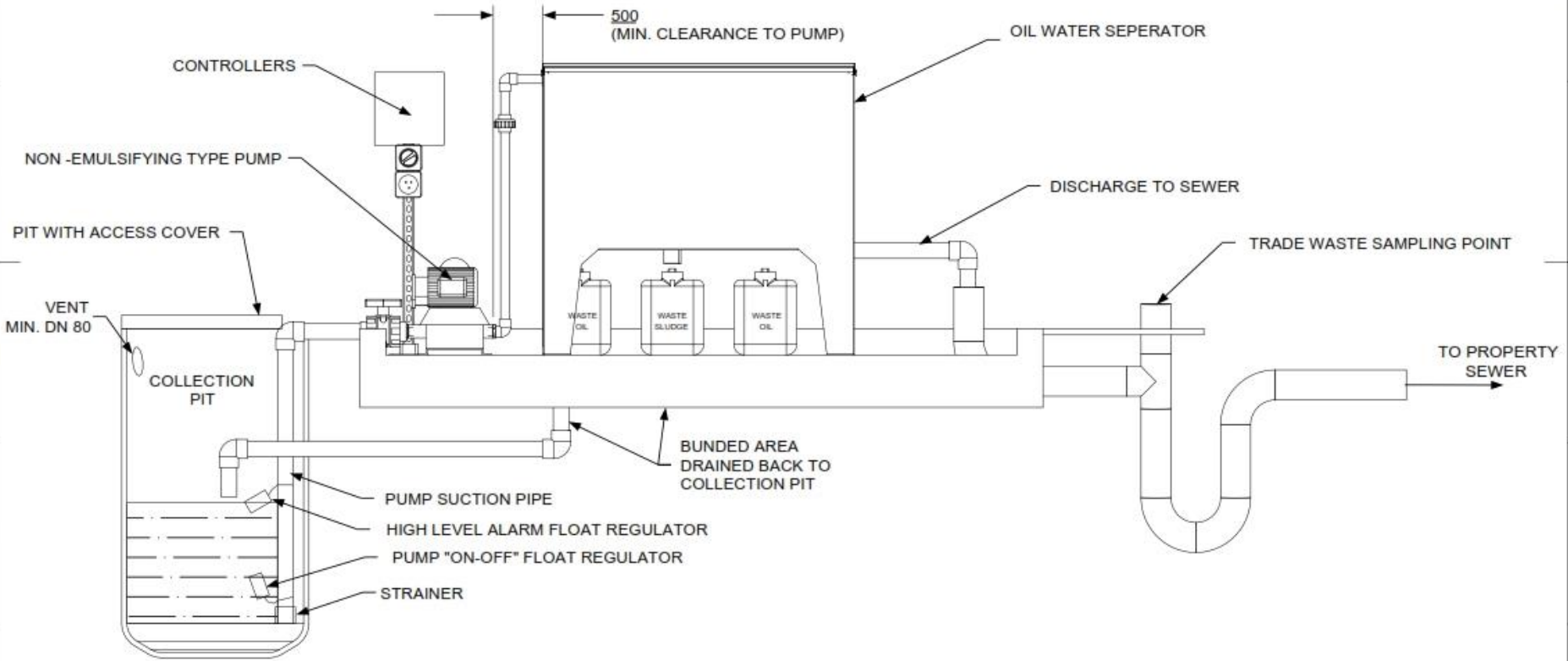
PROJECT: OWS50

TITLE: GENERAL ARRANGEMENT



NOTES:

1. OIL WATER SEPERATOR (OWS) AND COLLECTION PIT TO BE SIZED ACCORDING TO RATE OF INFLOW. (REFER TO MANUFACTURERS SPECIFICATIONS).
2. ONLY NON EMULSIFYING TYPE PUMPS MAY BE USED WITH OIL WATER SEPERATORS.
3. OIL WATER SEPERATORS ARE TO BE DISCHARGE THROUGH A TRADE WASTE SAMPLING POINT.
4. MAINTENANCE DETAILS TO BE INCLUDED WITH THE APPLICATION TO DISCHARGE TRADE WASTE FORM.
5. ALL MEASUREMENTS SHOWN ARE IN MILLIMETERS.
6. SILT SUMPS ARE NOT RECOMMENDED TO BE USED AS COLLECTION/PUMP PITS.
7. THE CAPACITY OF THE COLLECTION PIT TO BE TWICE THE SIZE OR GREATER THAN THE SEPERATOR.
8. ALL ASSOCIATED PLUMBING WORK IS TO COMPLY WITH WATER SERVICES LICENSING (PLUMBERS LICENSING AND PLUMBING STANDARDS) REGULATIONS 2000 AND LATEST.
9. GAS TIGHT COVERS TO COMPLY WITH LATEST VERSION OF AS 3996.
10. ALL ASSOCIATED ELECTRICAL CONNECTIONS TO COMPLY TO AUSTRALIAN STANDARDS AND TO BE INCORPORATED INTO ANY TREATMENT SYSTEM DESIGN.
11. ALL ELECTRICAL CONNECTIONS TO BE CERTIFIED BY A LICENSED TRADESPERSON OR ELECTRICIAN.



REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	END USER	NAME	DATE	SIGN	SCALE	SHEET	1 OF 1	A3	EC DRG NO:	PROJECT:	TITLE:
1	INITIAL RELEASE	GV	ML		19/04/2018		DRAMA/MLU SELVAM	19/04/2018	GV						ECOWS	INSTALLATION INSTRUCTION
2	UPDATED DRAWING	GV	ML		1/05/2018		DRAMA/MLU SELVAM	1/05/2018	GV							
							ALEX WINTER	1/05/2018	GV							
							MICHAEL LAURENT	1/05/2018	ML							





Deep Bed Polishing Filter 25-30lpm Operating Manual



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1 INTRODUCTION

Thank you for purchasing your Enviroconcepts, EL25 Polishing Filter. This manual has been prepared to help you to understand, setup, operate and troubleshoot your system. This package has been designed so that minimal maintenance will be needed to keep it operating efficiently.

Before operating, the user should be thoroughly familiar with equipment operation, limitations and hazards. Thoroughly read, understand and observe all safety and operating instructions. Please note – System components may vary with your particular system please disregard / ignore system component instructions that are not relevant to your system. If you are unsure, please contact Enviroconcepts.

1.1 *Initial Handling and Inspection*

By following the instructions, you will have opened the equipment and found it to be in good condition or damaged.

If the equipment was delivered to you by a common carrier and damage is found, even hidden damage, IMMEDIATELY file a claim with your carrier. Their representatives must inspect and verify the damage. It is your responsibility, not Enviroconcepts, or your distributors to file the freight damage claim.

Check the enclosed packing list to verify that all items have been received. Contact your distributor or Enviroconcepts if assistance is needed with common carriers, identification of parts or installation process.

1.2 *Important Notice*

The following information is necessary for installation, parts, service and warranty consideration.

This information is specific to your equipment.

Serial Number _____ Model Number: _____

2 Operator Safety

When in doubt, contact Enviroconcepts on 1300 661 130.

Remember that the equipment may operate automatically and can start at any time. Isolate any equipment before working on it or asking others to work on it.

 **IMPORTANT:** Any electrical work must be undertaken by a qualified electrician, this unit will come as a package and will be installed by our technicians.

 **WARNING:** Observe and do not remove any warning and safety labels on the system. All guards, shields and covers must be in place to prevent accidental contact with hazardous parts.

 **WARNING:** Never stand in water when cleaning, contacting or working with electrically powered equipment. Survey the area where the equipment is operating for possible hazards and correct as required.

 **WARNING:** The “clean” water produced by this system is not for human consumption and may subject the user to skin and/or eye irritation depending upon contaminants left in the solution. Always wear appropriate protective equipment when using this system.

 **WARNING:** Periodically check all gauge readings, be aware of each gauge's monitoring function, as well as its normal and warning levels.

 **WARNING:** Inspect machine periodically for damaged or worn components and repair or replace to avoid potential hazards.

2.1 Make it safe first.

Always make the unit safe by flushing out any residual liquids from the pumps and pipelines and isolating the equipment.

Do not undertake any works unless the consequences are carefully thought through. Many pipelines contain chemicals or effluent under pressure even when the equipment has been shut down for some time.

All warranties and guarantees with respect to the function and durability of the system shall be void should the operator fail to adhere to these safety instructions or any other instructions within this Guide.

The associated risks due to failure to adhere to these safety instructions include but are not limited to:

1. Endangering people due to electrical, mechanical, and/or chemical/biochemical hazards.
2. Endangering the environment due to leakage of hazardous material (where chemicals are involved).
3. Failure of important equipment and process functions leading to inferior performance.

2.2 Before operating.

The user should be thoroughly familiar with equipment operation, limitations, and hazards. Thoroughly read, understand, and observe all safety and operating instructions Please note – System components may vary with your system please disregard/ignore system component instructions that are not relevant to your system. If you are unsure please contact Enviroconcepts on 1300 661 130.

3 ROUTINE MAINTENANCE CHECKLIST – POLISHING SYSTEM

Daily		
Check	Description	Action
Pressure Gauge 1Bar = 100kPa	0kPa	• Check/Turn on polishing pump. • Polishing pump not primed (If running) • Check for leaks • Check inlet valve is not in closed position
	Operating Range 200-410kPa	• No action needed, polishing pump is running and filter is running within range. • Lower range indicates Flow controller bypass and pressure outlet is in use. • Higher range indicated closed loop filtering through Flow controller.
	410kPa or more	• Initiate Backwash (note should be done daily if using Manual system). • Check valves are not dead heading the pump, See manual for correct valve position.

Polishing pump	Not running in FLT	• Check isolator. • Check level of polishing tank, if too low pump will not start. • Check Pressure Switch Lockout is not Active, Reset the plant • Check Flow Switch Lockout Is not Active, Reset the plant
	Not running in ECO	• Eco mode 45min cycle is active wait for cycle to finish and pump will start. • See above Lockouts
Backwash Control Valve 1 Backwash Control Valve 2 Backwash Control Valve 3	Valve doesn't change position	• Isolate Pump or place ball valves (4, 5, 6) into bypass position • Remove unions on each side of Actuator ball valve and check for build-up of corrosion or debris. Clean and re-try. • Check condition of actuator – Electrician to test
	No water seen through sight tube during backwash	• Check valve position refer to manual procedure below and re-try • BWV-1A is not Open – try method above – check control fuses
Flow Switch	Flow switch not Holding Backwash	• Check Actuator valves are in backwash position • Check Bypass Ball valves are not in bypass • The only way to check the flow switch is to dismantle the piping – contact Enviroconcepts for assistance and setting the flow switch paddle.

Warning: If any fault not listed is present contact Enviroconcepts immediately – 1300 661 130



Polishing Filter Inlet Pressure Gauge



Polishing Pump Inlet Pressure Switch PP-PS1

Note: Polishing filter pressure gauge is set to read BAR – use the ratio 1Bar = 100kPa when reading to understand the values in this manual



Backwash Flow Switch PP-FS1

4 BACKWASH/ REGENERATION

4.1 Manual Initiation

Please follow the instructions to perform the Backwash/Regeneration of your Polishing Filter.



When Plant is running in **Filter Mode**



When Plant is running in **Economy Mode**

Press the **Backwash Start** Push Button and the Actuator Valves will change, and water will be seen through the Clear Backwash pipe to the left of the polisher manifold. The **Backwash Start** will illuminate while in backwash; this will run for 5 mins then automatically return to Filter or Economy mode.

NOTE: If the system is in **OFF**, and turned to either **ECO** or **FLT**, then the Plant start push button will need to be pushed first then the backwash can be started.

WARNING – Only open or close valves if you are in direct contact with Enviro concepts and have been instructed to do so, in this Manual the Backwash procedure must be followed correctly to avoid damage to your system.

4.2 Auto Initiation

The Automatic backwash sequence will trigger every night at 1:30am – This can also be set to client's requirements if the factory set time is going to conflict with any on site operations, so long as the system is left in either **Filter Mode** or **Economy Mode** the backwash will start. The backwash will not start in **OFF**.

Warning: This Sequence is set in the Programmable Logic Controller – do not attempt to adjust or connect without first contacting Enviroconcepts

5 SYSTEM DEFINITIONS

5.1 Polishing System

In normal operation manual ball valves on the left and right are in the open position (See Below) and the centre ball valve is in the closed position.



5.2 Polishing System Operation

In normal operation (FLT or ECO) Actuator Control Valves ACV101 and ACV102 are in the Open Position
 In normal operation (FLT or ECO) Actuator Control Valve ACV103 is in the Closed Position
 In Backwash operation Actuator Control Valves ACV101 and ACV102 are in the Closed Position
 In Backwash operation Actuator Control Valve ACV103 is in the Open Position



5.3 Pilot Light Status Lights

Blue Backwash Indication Light

- Illuminates while the unit is in the backwash cycle and no errors exist.
- Not illuminated once the backwash cycle has finished or system is in normal FLT/ECO run mode.
- Not illuminated when backwash is initiated – Backwash flow switch has timed out and no flow is sensed or pressure switch has tripped on high pressure – refer to troubleshooting guide.

6 MAINTENANCE

Installing and Changing Filter Media

The Media in your filter needs to be changed approximately every 12 – 18 months dependent on the quality of the water going through the recycling system and the frequency of use.

To determine if you need to change your filter media first inspect the pressure gauge on your filter to check the pressure reading. The operating pressure should read approximately 320-400kPa. If your filter reads above 400kPa please run a regeneration / backwash cycle. If the pressure reading does not come down after a few of these cycles and the water in the clear tube still runs dirty it is time for a service on your system and a media change.

In most cases, you will have paid for a service in which the removal and replacement of your media along with a full system check over and calibration will be carried out by our Service Technicians. However, if you have not opted for this please follow the below instructions. These instructions also apply for installation of media to a new system which has not yet been used on site.

Media required for the 10 x 54 media filter:

- **29 kg of TURBIDEX (must be soaked before use)**
- **10 kg of 8/16 Sand**

Tools/Equipment required for media installations / changes:

- PPE
- Ladder
- Slurpee/Evacuation system or Waste Suction Truck

1. Removing the Filter Head: Power down the recycling system. Shut off the left and right ball valves. Open the centre ball valve. Unscrew barrel unions on either side of Polishing Head. Unscrew the filter head and set aside. Clean out the filter media.

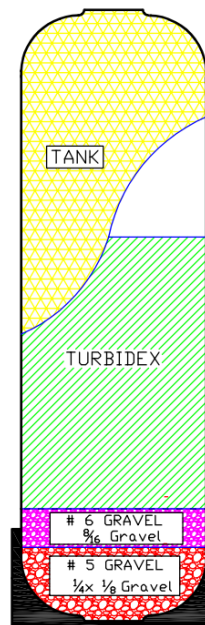
Note: Removal of media should be done by an Enviroconcepts Technician as removal of media incorrectly will cause damage to Polishing Filter Unit.

2. Installing new Filter Media: Soak filter media before placing into filter. Place media into filter in the following order and as shown in the Filter Media Installation diagram being careful not to get any media inside the pipe.

- 8/16 Gravel – On the bottom
- Turbidex – On the top.

CAUTION – Please be careful not to damage the pipe which runs the length of the filter tank or the spider laterals on the bottom of the pipe. If these are damaged they must be replaced otherwise your filter will not work properly and your system may have serious problems. If you need to order a new filter pipe and spider laterals, please call Enviroconcepts.

3. Replacing the Filter head: Place the filter head back onto the filter and screw on. Connect the barrel unions and do up. Open the ball valves again to original position – see flow diagram. Power up the system.



Filter media installation diagram.

Note: indicated 2 types of gravel, this unit only uses 1.

7 TROUBLESHOOTING

See the Routine Maintenance checklist for the obvious issues that may occur with this unit.

Remember to ensure the valves are in the correct position before starting the polishing system or backwash. If care is not taken and the valves are not in the correct position the Polishing pump will dead head and possible damage could occur.

If any other fault is present, please contact Enviroconcepts.



ULTIMA Dosing System Operating Manual

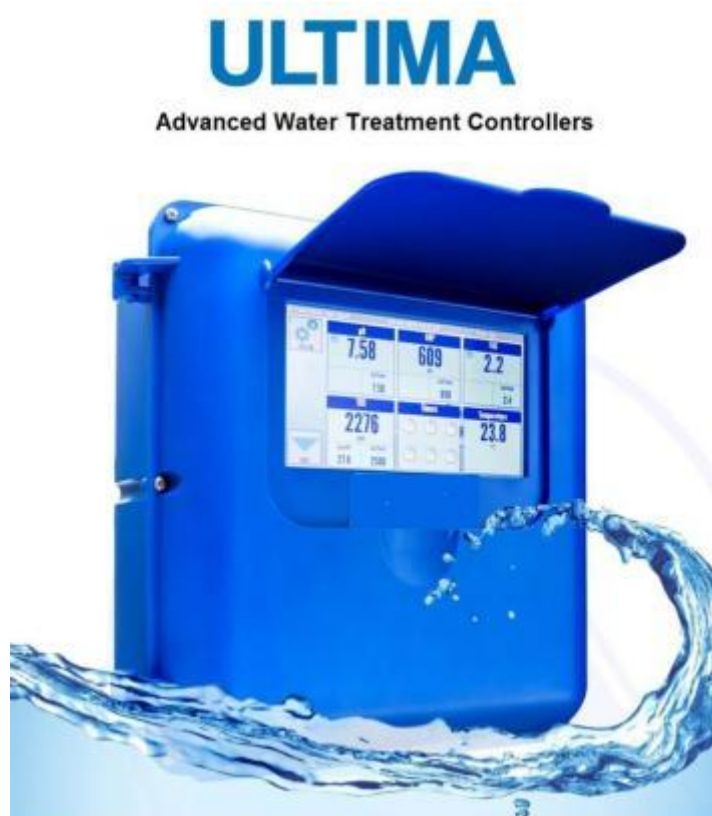


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1 WARNINGS

Refer to AS/NZS 3000 WIRING RULES when installing electrical equipment. The power cover is to be removed by an Enviroconcepts Technician or a licensed electrician only and must be replaced before the controller is connected to the power supply. Do not open the controller enclosure except as required for maintenance purposes. Once maintenance is complete, the enclosure is to be closed and resealed. If the supply cord is damaged, it should be replaced by an authorized service agent to avoid a hazard.

The picture of the bin indicates that this product should not be disposed of with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources.

Chemicals used as part of the treatment program may be hazardous. Refer to the Material Safety Data Sheets provided by your chemical supplier and ensure all personnel involved are aware of the handling and safety procedures.

It is a requirement to provide protection for accidental spills of chemicals, including any leaks that could develop from pump pressure lines.

Please read and understand all safety warnings on chemical containers before servicing any dosing equipment.

2 INTRODUCTION

Ultima advanced water treatment controller model incorporates the following key features:

- pH Control
- ORP Control
- FAC Control - optional
- TDS/Conductivity Control
- Temperature Monitoring
- Comprehensive timer options
- Accessory timers for improved performance of each individual timer
- On Board Data logging with USB drive Export options
- Options for USB drive Export/Import of Settings
- High and Low alarms for FAC, pH, ORP & TDS
- Extensive Internet Communication Option (Modem, Wi-Fi, Ethernet)

2.1 Important Notice

The following information is necessary for installation, parts, service and warranty consideration.

Please complete the following for your records:

Serial Number _____ Model Number: _____

Where to find the serial number:

Serial Identification Label:



All controllers are manufactured with a Serial Identification Label (SIL). This will be affixed to the wall of the controller, on the outside face on the right-hand side.

The label is the best reference for making enquiries for service or technical assistance. Any controller that does not show evidence of the SIL may have the warranty voided.

The Key Data being:

Model: eg. ULTIMA. This is the actual controller model and indicates the configuration.

Build: eg Mar-15. Indicates this controller was manufactured in March 2015.

Serial No: eg 1503ULT000694 is the specific serial number for this controller.

3 ACCESSORIES AND SPARE PARTS

Reagents

AS1413 -1413 uS/cm conductivity solution

AS7004 - pH 4 buffer solution AS7007 - pH 7 buffer solution

AS5250 - 250 mV ORP solution AS5475 - 475 mV ORP solution

Sensors

PR_FCT – Combination Conductivity, Flow and Temperature

Sensor. PR_pHRG – Combination pH, ORP and Ground reference

Sensor PR_FAC – FAC and Ground reference Sensor. (Optional)

Peristaltic Pumps

AP_PERI_S_KIT – AP PERI SERVICE KIT (Maximum service interval - 12 months). Included in this Kit are the following

- AP_TUBE4824 (1)
- AP_INJECT (1)
- TUBESUCTION (2 mt)
- TUBEDISCHARGE (2 mt)

AP_PERI_O_KIT – AP PERI OVERHAUL KIT (Maximum service interval - 2 years) Included in this Kit are the following

- AP_TUBE4824 (1)
- AP_INJECT (1)
- AP_ROLLBLOCK (1)
- AP_DWEIGHT (1)
- AP_LID (1)
- TUBESUCTION (2 mt)
- TUBEDISCHARGE (2 mt)

Test Meters required:

- Portable pH/Conductivity meter
- Portable pH/ORP meter.

4 ROUTINE TESTING

The use of an Ultima control system will automatically vary the dosages and maintain good conductivity, pH, ORP and disinfection control, even where there are wide fluctuations in system load or demand. The principles of 'Best Practice' and 'Duty of Care' that are the responsibility of the system owner dictate that all systems should be routinely serviced and tested chemically, and the results logged.

4.1 Regular Inspections and Maintenance

For optimum results and continued accuracy, the complete operation of the controller system should be verified at least on monthly service basis.

All sensors should be inspected, cleaned and calibrated as necessary every month.

All sensors age with time and temperature, and have a typical life span of 12-36 months depending on the application in which they are operating and should be replaced accordingly.

Where fitted, flow sensors and wire strainers should be checked for correct operation and cleaned of any debris every month, so they work efficiently.

Injection non-return valves and pumps should be cleaned and checked at least annually.

Sodium Hypochlorite being highly alkaline may lead to scale formation on its dose injector and this may require acid cleaning on a frequent basis.

On the peristaltic dose pumps, the squeeze tubes and roller block should be checked at least annually and should be replaced every 12-24 months.

More regular maintenance may be required for the larger 3.0l/hr pumps, due to increased pumping rates. Chemical suction and discharge tubes should be inspected monthly and replaced as necessary.

Maintenance schedule	1 month	3 months	6 months	12 months
Clean and Calibrate FCT Probe	✓			
Verify Flow ON/OFF	✓			
Clean FAC Probe	✓			
Clean pH/ORP Probe	✓			
Verify / Calibrate ORP	✓			
Test Outputs	✓			
Test Pumps/Solenoid Operation	✓			
Calibrate pH Probe	✓			
Check/Clean Injectors	✓			
Inspect Suction/Discharge Tubing	✓			
Check/Clean Solenoids		✓		
Peri. Pump - AP Service Kit			✓	
Peri. Pump - AP Overhaul Kit				✓

5 SYSTEM CONFIGURATION

The ULTIMA controller has a 7" touch screen and navigation is similar to that of any smart phone, PC monitor, GPRS navigators or other modern device. Operating the controller is done by touching the screen and navigating using your finger. The ULTIMA controller screen is covered with a protective film.
CAUTION: Do not operate the controller with dirty or wet fingers. Do not touch the controller screen with metal or sharp object. Always close the screen flap cover down on completion.

All Ultima controllers come loaded with pre-set default values for all the treatment program parameters. On start up the controller will operate according to those defaults. However, every application should have a planned treatment program developed. Decisions should be made on what values are most appropriate for ORP, pH, TDS/ Conductivity dosing requirements.

Once the customized program has been determined, it may be set in the Ultima controller, as described in the following sections.

5.1 Turning the Controller ON

When you Switch the Isolator next to the controller, it turns ON. It takes about 30 seconds for the controller to open its program. During this time an animation logo will appear on the screen.

When the program is fully loaded the front lock screen will appear. To start using the controller, press UNLOCK.



5.2 Main Screen

- Top bar with USB/SIGNAL, Date, Time, Flow ON/OFF parameters

- Menu with icons on the left side of the screen. Icons are SYSTEM, LOCK SCREEN and NEXT

- Six main parameters with Component information. Component information displayed is as follows: Name, Current Value and Set point. If the relay is ON, the POWER icon turns blue in the left top corner of each component box. If the Component is in LOCK OUT, a RED PADLOCK sign will be active on the left top corner. If the Component is in ALARM, the top part of the component box will flash RED. Some Component boxes display icons for easy identification of the Component.



6 SYSTEM SETTING PREFERENCES

6.1 Setting System Preferences

To set system preferences press SYSTEM icon on left-side Menu of main screen. The SYSTEM screen will appear (Picture 6). This is the original ANDROID screen. It displays the controller's details and user preferences.

The user can choose communication options to be used, depending on your hardware configuration: NONE, ETHERNET, WI-FI or MODEM by activating appropriate circles on the screen.

The left-side Menu has the following icon boxes: ADVANCED, SAVE, IMPORT/EXPORT, RETURN. There are a further two icon boxes on the bottom right hand corner of the SYSTEM SCREEN: RESTORE DEFAULTS and REBOOT.

ADVANCED icon is used for setting Date and Time, Language and Wi-Fi preferences.

Date and Time should only be adjusted if the controller is not connected to the server. Otherwise Date and Time settings should be made by changing the time zone of the controller via the webpage. The controller may need to reconnect to the server for the time zone change to take effect. If the date and time is changed through advanced settings, the screen lock may be automatically activated and "Exit" will have to be pressed to resume normal operation.

SAVE icon is used to save preferences after editing.

IMPORT/EXPORT icon is used for downloading data and settings from the controller to USB drive or for uploading previously exported settings from a USB drive to the controller. RESTORE DEFAULT icon is used for restoring all settings and preferences to factory settings.

REBOOT icon is used for restarting the controller without isolating from the power supply.

The SYSTEM SCREEN displays an option for a Screen Lock Password. If the checkbox next to it is ticked, a new checkbox

SET PASSWORD will appear together with a Read Only Login checkbox. When this option is checked the controller, screen can be unlocked in Read Only mode by pressing SKIP on the pop-up screen.

This will give users access to the controller without the ability to change settings. Read Only users may calibrate the controller. If this option is not ticked, the user can unlock the controller ONLY by using the password.

To set up a password, press SET PASSWORD. The pop-up screen will appear (Picture 7).

Input 4 digits and repeat to confirm.

To clear, press CLR button on the pop-up screen. If user does not wish to proceed, press CANCEL.

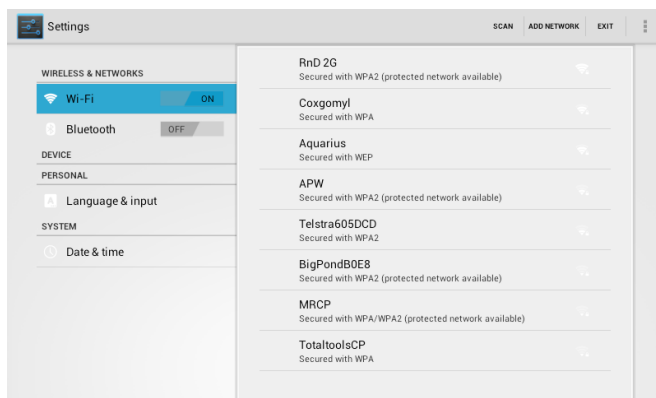
If this is the case, the pop-up screen will disappear and the Screen Lock Password checkbox on the SYSTEM SCREEN will remain un- ticked.

The same will occur if the user does not enter a matching 4 digit number when creating passwords.



6.2 Advanced System Settings

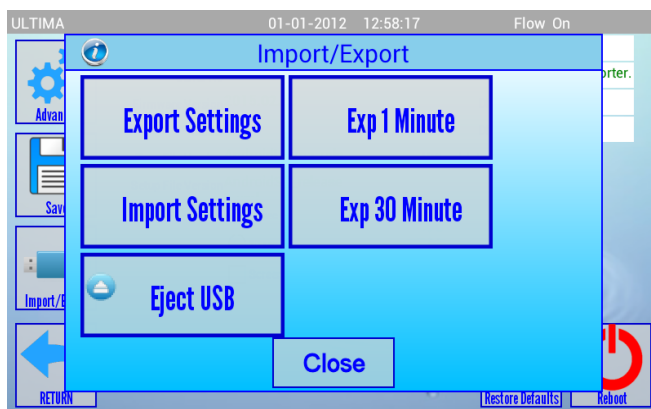
When pressing the ADVANCED icon on the SYSTEM screen, an ADVANCED screen will appear (Picture 8). This screen has standard ANDROID options for setting Date and Time, Language and communication preferences. These preferences are to be set in accordance with standard procedures for ANDROID operating systems. Press EXIT on the top right-hand side of the screen, when all preferences have been set. *Date and Time should only be adjusted if the controller is not connected to the server. Otherwise Date and Time settings should be made by changing the time zone of the controller via the webpage. The controller may need to reconnect to the server for the time zone change to take effect. If the date and time is changed through advanced settings, the screen lock may be automatically activated, and "Exit" will have to be pressed to resume normal operation.*



7 IMPORTING/EXPORTING SETTINGS AND EXPORTING DATA

When pressing IMPORT/EXPORT on the SYSTEM screen, the pop-up screen IMPORT/EXPORT will appear (Picture 9). Before Exporting/Importing, secure the front panel with one hand and insert the USB drive into one of the USB drive connectors on the Motherboard (refer to item 3 and 4 of the Motherboard circuitry diagram).

Once the Import or Export operation is complete, a confirmation message will appear. Press EJECT USB before ejecting the USB drive from the USB drive connector on the motherboard. To return to SYSTEM screen, press close.



8 COMPONENT SETTINGS

8.1 pH Configuration

On the main screen, touch the pH parameter box. The pH screen will appear (Picture 10).

Using an Acid pump and dosing an acid to your water will decrease your pH, as this screen is set to Acid dosing by default.

Note: When using both Acid and Base pumps to control pH, always set the pH Acid set point higher than the pH Base set point.



8.2 pH B Configuration

On the main screen, touch the pH B parameter box. The pH screen will appear (Picture 11). Connecting a Base pump and dosing a Base to your water will increase your pH, as this screen is set to Base dosing by default.

Note: When using both Acid and Base pumps to control pH, always set the pH Base set point lower than the pH Acid set point.



9 pH CALIBRATION

Most component screens have a similar structure: the left hand-side menu, Current value and Output active/inactive icon, the performance Chart in the middle of screen and Settings values on the right-hand side. The following icons are situated on the left hand side menu: SYSTEM, CALIBRATION, SAVE, RETURN.

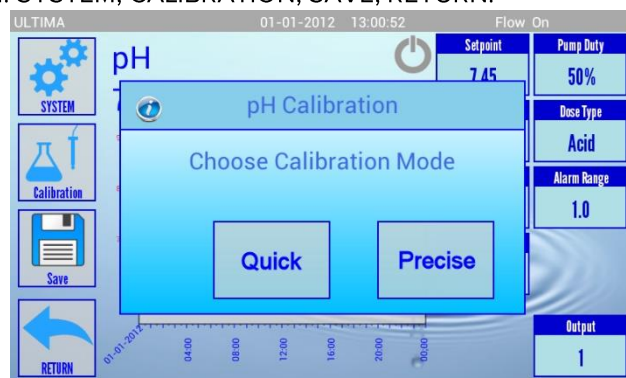
SYSTEM icon is for System Configuration.
CALIBRATION icon allows the option of: QUICK and PRECISE calibration.

Choose between QUICK calibration using a known pre-measured value or PRECISE calibration using calibration solutions. Follow the instructions on the screen to complete the calibration. It is recommended to perform PRECISE calibrations on commissioning, every month and when a new probe is installed.

Part Number: AS7004 - pH 4

Part Number: AS7007 - pH 7

Part Number: AS7010 - pH 10

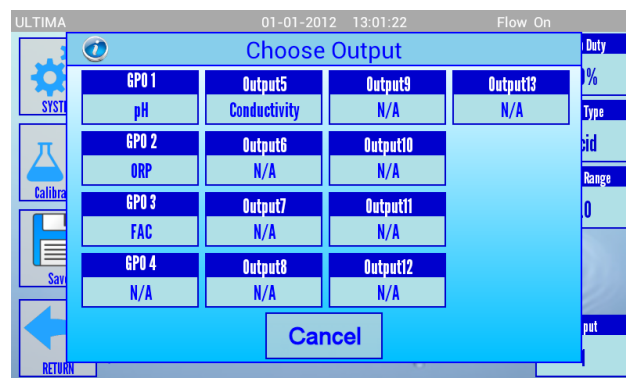


Press the SAVE icon for saving new settings after editing. A pop-up screen with confirmation of savings of new settings will appear. New settings will also be saved when pressing the RETURN icon and returning to the MAIN screen.

The performance Chart has historical values on the current date; week or month (Double click on chart area to load the desired component). Also shown on the graph are indications of dosing duty values for those periods.

Setting values include SETPOINT, PUMP DUTY, MODE, DOSE TYPE, ALARM MODE, ALARM RANGE, LOCKOUT DELAY and OUTPUT. Press each parameter to input a value or chose pre-determined options. OUTPUT box shows the CHOOSE OUTPUT screen.

Press your chosen output and use this output instead of the currently assigned one if required. **CAUTION:** Please use only outputs 1 to 4 as they are wired to the GPO plugs 1 to 4 labelled on the protection cover inside the controller (please refer to Picture 1. Protection cover) Outputs 5-8 should be used only if they are wired according to the purchase order. Outputs 9 to 13 are low voltage (can switch up to 50V/0.5A/10W peak) signal relays for use with switching dosing pumps or similar applications.



10 ORP/FAC/TDS CONFIGURATION

10.1 ORP Configuration

On the main screen touch the ORP parameter box. The ORP screen will appear.

The ORP screen has a similar layout to the pH screen. For PRECISE calibration please use the following calibration solutions:

Part Number: AS4250 - 250 mV

Part Number: AS5475 - 475 mV

(Note: after using this calibration solution please allow 15-30 minutes for pH reading to stabilise on Sensors PR_pHRG or PR_pHRG_AU).

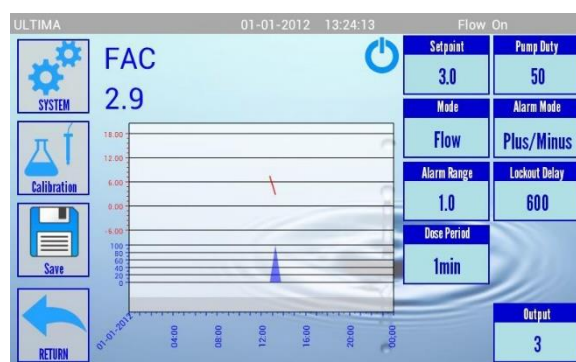


10.2 FAC Configuration

On the main screen touch the FAC parameter box. The FAC screen will appear (Picture 15). The FAC screen has a similar layout to the pH screen. However all setting are active only for FAC enabled models. For non-FAC models, the FAC screen will have no current values. FAC sensor part number is PR_FAC.

DOSE PERIOD - determines the length of period (between 1 and 60 minutes) when dosing is considered as one cycle. For granular and liquid Chlorine dosing it is recommended to use 1 minute settings for best performance. For Chlorinators, a longer Period should be chosen depending on the size of Chlorinator, Volume of water and other parameters.

Calibration of the FAC probe is always performed using a pre-measured DPD1 value while the FAC probe is in its normal operating state (i.e. in the manifold, with normal flow ON). It is highly recommended to use a calibrated DPD1 test to obtain FAC values. After a pH calibration has been performed, FAC should be re-calibrated as well. The FAC probe requires at least 5 minutes to "settle" to its nominal value after re-insertion into the manifold after cleaning



The FAC gain can be increased by adjusting the Probe board's dipswitch "FAC Gain" and sequentially turning switches 1-6 OFF, or decreased by sequentially turning switches 6-1 ON. After each switch is adjusted please wait approximately 30 seconds for the sensor to settle to the new value.

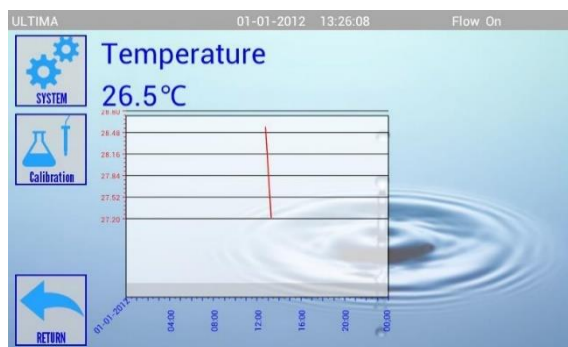
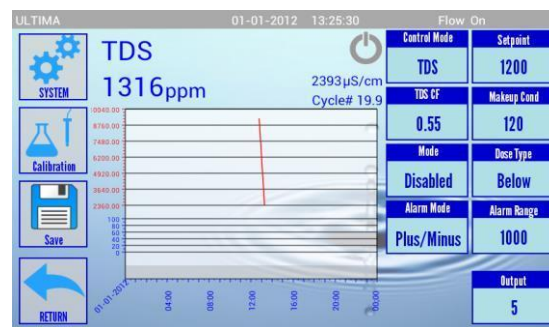
10.3 TDS/Conductivity Configuration

On the main screen touch the TDS parameter box. The TDS/Conductivity screen will appear. This screen has a similar layout to the pH screen. An option is provided to use TDS or Conductivity mode for control.

Calibration of TDS sensor is always performed using a pre-measured value. It is highly recommended to use calibrated tester or certified solution to obtain Conductivity values.

Part Number: AS1413 -1413 uS/cm conductivity calibration solution

Before performing conductivity calibrations please calibrate Temperature component
The Temperature component has no setting values as it is not controlled



11 TIMER CONFIGURATIONS

On the main screen touch the TIMERS icon box. The TIMERS screen will appear (Picture 18a). There are six timers available.

Timers are used to run an output at a chosen time. Press one of the six TIMERS (Picture 18b).

TIMER NAME: press this button and select a name for this timer

OUTPUT: Select the output which you would like to run under this timer. Outputs linked to other components such as pH or ORP will be labelled

MODE: Select one of the following modes:

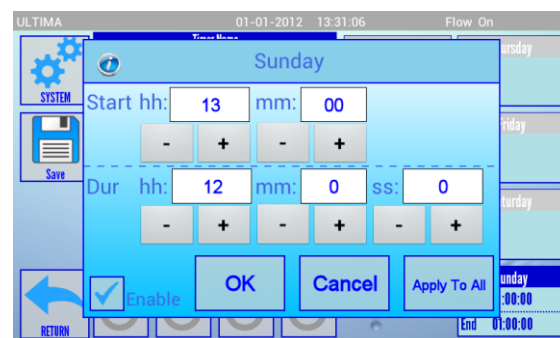
- Disable: Disables the timer
- Timer: The output will work when the timer is on regardless of flow or measurements.
- Timer and Flow: The output works when timer and flow are ON simultaneously.
- Timer and Probe: This is for components that use a probe (pH, ORP, FAC, TDS). The selected component will be controlled in "Continuous" mode while the timer is active. When the timer is inactive, the component will control the output using it's displayed mode.
- Timer, Probe and Flow: This is for components that use a probe (pH, ORP, FAC, TDS). The selected component will be controlled in "Flow" mode while the timer is active. When the timer is inactive, the component will control the output using its displayed mode.

WEEKS: The year is divided into 4 week cycles. The current week is shown as a highlighted box. Select which weeks this timer will be active for, by pressing one, two, three or all four buttons. Active weeks are highlighted in Blue, inactive weeks are grey.

Use Accessory Timers if you wish to control more than one output using the same timer. Select Day of the week. Pop-up screen will appear.

Tick the **ENABLE** checkbox to activate the timer for this day. Select Start Time as hours and minutes. Then select Duration period as hours, minutes and seconds. To copy the selected start time and duration to all days press **APPLY TO ALL**. Note: For extra day timers to activate, press the day box required and tick the **ENABLE** checkbox to activate the timer with the same settings as the other days.

Press **OK** to return to SET TIMER screen. Press **SAVE** or **RETURN**, to save all changes to this timer. The next active time for a timer is displayed on that timer's button.



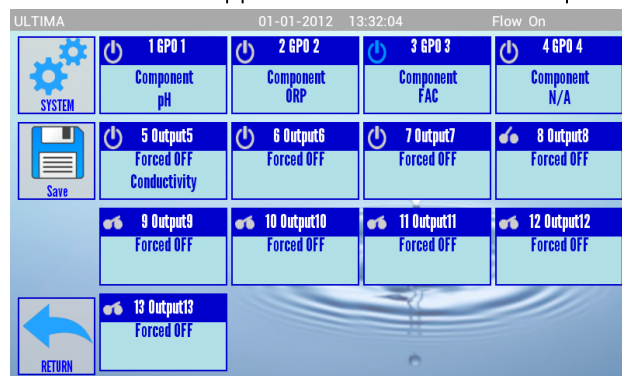
12 OUTPUTS CONFIGURATION

On the main screen touch the Outputs parameter box. The OUTPUTS screen will appear. There are thirteen output buttons on this screen. An illuminated blue power icon shows if this relay is ON. A Grey non-illuminated power icon shows if this relay is off.

Outputs 1 to 4 are wired to GPO's 1 to 4 by default. These are available for use by any component.

Outputs 5 to 7 will be used only on special orders hard wired to external relays or components. Output 8 will be used only on special orders hard-wired to an inbuilt relay, for the use of directly switching chlorinators etc.

Outputs 9 to 13 are low voltage (can switch up to 50V/0.5A/10W peak) signal relays for use with switching dosing pumps or similar applications. Please refer to items 9, 10 and 11 on Probe board circuitry diagram.



Press any output for setting or editing this output. A pop up screen will appear.

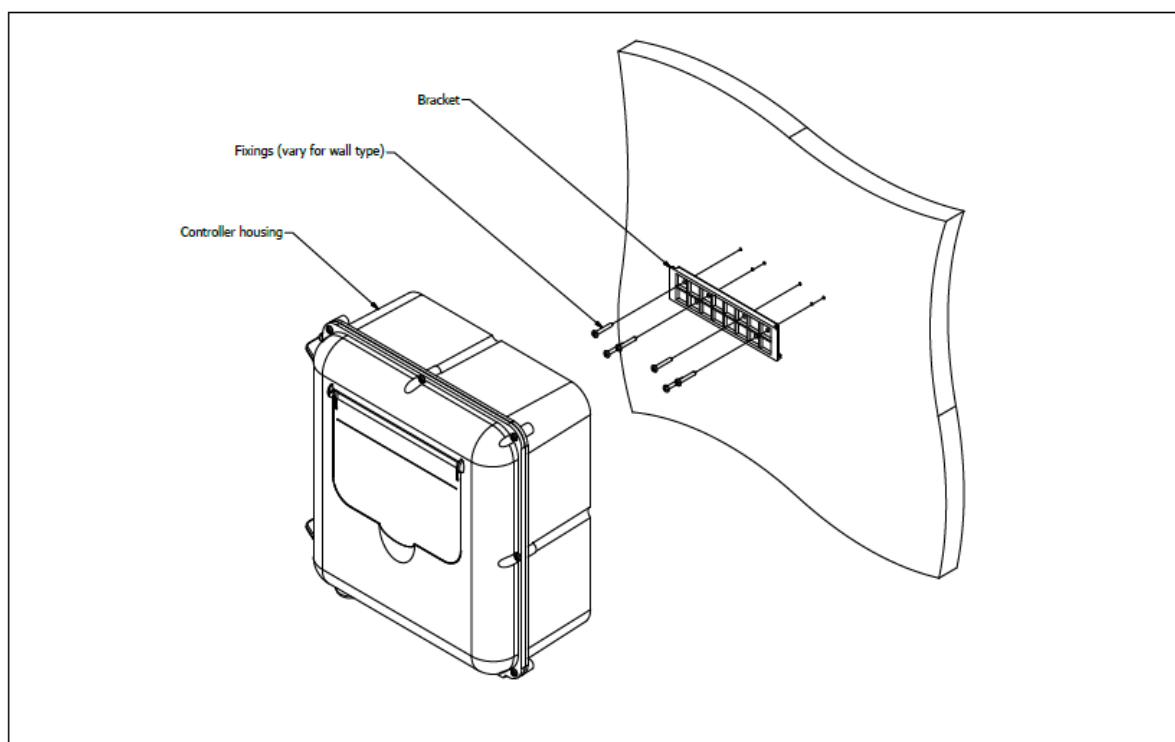
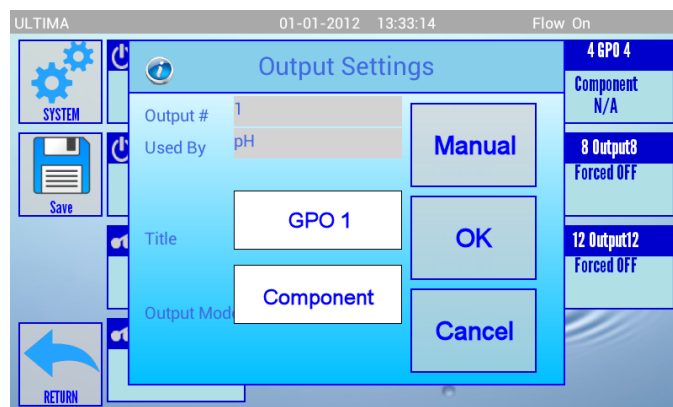
Press TITLE box to name or edit the name of this output.

Press OUTPUT MODE to choose the required mode of this output. Using this function, you can temporarily or permanently change the output mode. The following options are available:

- *Component*: The output can be controlled normally by a component or timer, if linked. If no component or timer uses this output, it will always be OFF.
- *Forced OFF*: The output is always off regardless of any linked components or timers. The output will only be activated by manual dosing, or changing the output mode.
- *Forced ON*: The output is always on regardless of any linked components or timers. The output will only be de- activated by changing the output mode.

Note: You need to be very careful when selecting Forced ON or Forced OFF options as this will force that particular output to be perpetually ON or OFF.

Press MANUAL dosing to temporarily override all other settings and turn the output on for the selected duration in minutes and seconds. This may be useful for priming a pump or testing outputs.





SDS's

Enviro Acid

Enviro Base

Enviro Chlor

Enviro Dex

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ENVIRO ACID

SECTION 1 Identification: Product Identifier and chemical Identity

1.1 Product Identifier

Product Form : Liquid
Product Name : Acid Other Names : Sulphuric Acid
Product Code : CON100

1.2 Recommended uses and restrictions

Recommended use : pH Correction in water systems

1.3 Supplier Information

Company Name : Enviroconcepts International Pty Ltd
: 65 612 894 738
: PO Box 6664 GCMC, Qld, 9726, Australia
: 07 5535 9000
: info@enviroconcept.com.au
: www.enviroconcept.com.au

1.4 Emergency telephone number

Emergency Number : 0426 260 445

SECTION 2 Hazards Identification

2.1 Classification of the hazardous chemicals

Corrosive to Metals - Category 1
Skin Corrosion/Irritation - Category 1A

2.2 Label Elements

Hazard Pictogram :



Signal Word : Danger

Hazard Statements : H290 May be corrosive to metals
: H314 Causes severe skin burns and eye damage

Precautionary Statements

Prevention : P102 Keep out of reach of children
: P103 Read label before use
: P234 Keep only in original container
: P260 Do not breathe dust, fume, gas, mist, vapours or spray
: P264 Wash hands, face and all exposed skin thoroughly after handling
: P280 Wear protective clothing, gloves, eye/face protection and suitable respirator

Response : P101 If medical advice is needed, have product container or label at hand
: P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
: P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

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ENVIRO ACID

2.2 Label Elements Continued

- : P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- : P305+P351+P333 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- : P310 Immediately call a POISON CENTER or doctor/physician.
- : P321 Specific treatment (see product label)
- : P363 Wash contaminated clothing before re-use
- : P3690 Absorb spillage to prevent material damage
- Storage : P405 Store locked up
- : P406 Store in original container with a resistant inner liner
- Disposal : P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

Poison Schedule : S6. Poison

SECTION 3 Composition Information

CHEMICAL ENTITY	CAS NUMBER	PROPORTION
Sulfuric Acid	7664-93-9	34%
Ingredients determined to be non hazard		Balance

SECTION 4 First Aid Measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

4.1 Inhalation

: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist

4.2 Skin contact

: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance. For gross contamination, immediately drench with water and remove clothing. Continue to flush skin and hair with plenty of water (and soap if material is insoluble). For skin burns, cover with a clean, dry dressing until medical help is available. If blistering occurs, do NOT break blisters. If swelling, redness, blistering, or irritation occurs seek medical assistance.

4.3 Eye Contact

: Immediately irrigate with copious quantities of water for 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

4.4 Ingestion

: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

4.5 Notes to Physician

: Treat symptomatically. Can cause corneal burns.

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ENVIRO ACID

SECTION 5: Firefighting Measures

Hazchem Code : 2R

Extinguishing Media : If material is involved in a fire, use water fog (or if unavailable, fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

Specific Hazards : Non-combustible material.

Fire fighting further advice: Not applicable.

Section 6: Accidental Release Measures

Dangerous goods - Initial Emergency Response Guide No: 37

6.1 Small Spills

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

6.2 Large Spills

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred, advise local emergency services.

Section 7: Handling and Storage

7.1 Handling

Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols.

7.2 Storage

Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in section 10. Store away from sources of heat and/or ignition. Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a Class 8 Corrosive as per the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and/or the "New Zealand NZS5433: Transport of Dangerous Goods on Land" and must be stored in accordance with the relevant regulations.

This material is a Scheduled Poison Schedule 6 (Poison) and must be stored, maintained and used in accordance with the relevant regulations.

Section 8: Exposure Controls / Personal Protection

8.1 National Occupational Exposure limits

	TWA		STEL		NOTICES
	ppm	mg/m3	ppm	mg/m3	
Sulphuric Acid	-		1	-	3

As published by Safe Work Australia

TWA - The time-weighted average airborne concentration over an eight hour working day, for a five day working week over and entire working life.

STEL - (Short Term Exposure Limit)- The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight hours workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

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ENVIRO ACID

8.2 Biological Limit Vales

As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

8.3 Engineering Measures

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator.

8.4 Personal Protection Equipment

Safety Shoes, Overalls, Gloves, Face Shield, Respirator

Wear safety shoes, overalls, gloves, face shield, respirator. Use with adequate ventilations. If inhalation risk exists wear organic vapour/particulate respirator meeting with the requirements of AS/NZ 1716. Available information suggests that gloves made from nitrile rubber, polyvinyl chloride (PVC) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

8.5 Hygiene Measures

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9: Physical and Chemical Properties

Material Family : Sulphur Compounds

Base Units : Kilogram

Form : Clear liquid

Colour : Water White

Odour : Characteristic

Solubility : Miscible

Specific Gravity (20 degrees C) : 1.2-1.4

Density : 1.403g/ml

Relative Vapour Density (air=1) : 3.39

pH : <1

(Typical vales only - consult specification sheet) N Av = Not Available, N App = Not Applicable)

Section 10: Stability and Reactivity

Chemical Stability : This material is thermally stable when stored and used as directed.

Conditions to avoid : Elevated temperatures and sources of ignition.

Incompatible materials : Oxidising agents.

Hazardous decomposition products : Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions : No known hazardous reactions.

Section 11: Toxicological Information

No adverse health effects expected if the product is handled in accordance with this Safety Dara Sheet and the product label. Symptoms of effects that may arivse if the product is mishandles and overexposure occurs are:

Acute Effects:

Inhalation : Material may be an irritant to mucous membranes and respiratory tract.

Skin Contact : Contact with skin will result in severe irritation. Corrosive to skin - may cause burns.

Ingestion : Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointental tract.

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Section 11: Toxicological Information - Continued

Eye Contact	: A severe eye irritant. Corrosive to eyes: contact can cause corneal burns. Contamination of eyes can result in permanent injury.
Acute Toxicity:	
Inhalation	: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >20 mg/L.
Skin Contact	: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg.
Ingestion	: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg.
Corrosion/Irritancy	: Eye: this material has been classified as not corrosive or irritating to eyes. Skin: this material has been classified as a Category 1A Hazard (irreversible effects to skin).
Sensitisation	: Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.
Aspiration Hazard	: This material has been classified as non-hazardous.
Specific target organ toxicity (single expo:	: This material has been classified as non-hazardous.
Chronic Toxicity:	
Mutagenicity	: This material has been classified as non-hazardous.
Carcinogenicity	: This material has been classified as non-hazardous.
Reproductive toxicity (including via lactati	: This material has been classified as non-hazardous.
Specific target organ toxicity (repeat expo:	: This material has been classified as non-hazardous.

Section 12: Ecological Information

Avoid contaminating waterways.	
Acute aquatic hazard	: This material has been classified as non-hazardous. Acute toxicity estimate (Based on ingredients): >100mg/L.
Long-term aquatic hazard	: This material has been classified as non-hazardous. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): >100mg/L, where the substance is not rapidly degradable and/or BCF <500 and/or log Kow <4.
Ecotoxicity	: No information available.
Persistence and degradability:	: No information available.
Mobility	: No information available.

Section 13: Disposal Considerations

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS. If possible, material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

Section 14: Transport Information

14.1 Road and Rail Transport

Classified as Dangerous Goods by the criteria of the 'Australian Code for the Transport of Dangerous Goods by Road & Rail' and the 'New Zealand NZS5433: Transport of Dangerous Goods on Land'.

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ENVIRO ACID

14.1 Road and Rail Transport - Continued

UN No	:2796	
Dangerous Goods Class	:8	
Packing Group:	:II (2)	
Hazchem Code	: 2R	
Emergency Response Guide No	: 37	
Proper Shipping Name	: SULPHURIC ACID	
Segregation Dangerous Goods	: Not to be loaded with explosives (class 1), dangerous when wet substances (Class 4.3), oxidising agents (Class 5.1), oranic peroxides (Class 5.2), radioactive substances (class 7) or food and food packaging in any quantity. Note 1: Concentrated strong alkalis are incompatible with concentrated strong acids. Note 2: Concentrated strong acids are incompatible with concentrated strong alkalis. Note 3: Acids are incompatible with Dangerous Goods of Class 6 which are cyanides. Exemptions may apply.	

14.2 Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No	:2796
Dangerous Goods Class	:8
Packing Group:	:II (2)
Proper Shipping Name	: SULPHURIC ACID



14.3 Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No	:2796
Dangerous Goods Class	:8
Packing Group:	:II (2)
Proper Shipping Name	: SULPHURIC ACID



Section 15: Regulatory Information

This material is not subject to the following International Agreements:

- Montreal Protocol (Ozone depleting substances)
- The Stockhold Convention (Persistent Organic Pollutants)
- The Rotterdam Convention (Prior Informed Consent)
- International Convention for the Prevention of Pollution from Ships (MARPOL).

This material is subject to the following International agreements:

- Basel Convention (Hazardous Waste) - Acidic Solutions or acids in solid form.

This material/constituent(s) is covered by the following requirements:

- The Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act (Commonwealth).
- All components of this product are listed on or exempt from the Australian Inventory of Chemical Substances (AICS).

Section 16: Other Information

Reason for issue : Revision

This information was prepared in good faith from the best information available at the time of use. It is based on the present level of reasearch and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

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ENVIRO BASE



SECTION 1 Identification: Product Identifier and chemical Identity

1.1 Product Identifier

Product Form : Liquid
Product Name : Base Other Names : Caustic Soda Liquid, Sodium Hydroxide Solution
Product Code : CON110

1.2 Recommended uses and restrictions

Recommended use : Used to neutralize acids, make sodium salts and to hydrolize fats to form soaps. To treat cellulose in making viscose rayon and cellophane. To precipitate alkaloids and most metals from water solutions of their salts. Gold mining a pH adjuster. Industrial cleaning applications in sugar industry.

1.3 Supplier Information

Company Name : Enviroconcepts International Pty Ltd
: 65 612 894 738
: PO Box 6664 GCMC, Qld, 9726, Australia
: 07 5535 9000
: info@enviroconcept.com.au
: www.enviroconcept.com.au

1.4 Emergency telephone number

Emergency Number : Poisons Information Centre 1800 251 525 or Chemcall 1800 127 406

SECTION 2 Hazards Identification

2.1 Classification of the hazardous chemicals

Corrosive to Metals - Category 1
Skin Corrosion/Irritation - Category 1A
Serious Eye Damage/Irritation - Category 1

2.2 Label Elements

Hazard Pictogram :  : Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).



Poisons Schedule : 6
Signal Word : Danger
Hazard Statements : H290 May be corrosive to metals
: H314 Causes severe skin burns and eye damage
Precautionary Statements
Prevention : P234 Keep only in original container
: P264 Wash hands, face and all exposed skin thoroughly after handling
: P270 Do not eat, drink or smoke when using this product.
: P260 Do not breathe dust, fume, gas, mist, vapours or spray
: P280 Protective clothing, gloves, eye/face protection and suitable respirator
: P390 Absorb spillage to prevent material damage
Response : P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

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2.2 Label Elements Continued

- : P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- : P363 Wash contaminated clothing before re-use
- : P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- : P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- : P310 Immediately call a POISON CENTER or doctor/physician.
- Storage : P405 Store locked up
- Disposal : P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

SECTION 3 Composition Information

CHEMICAL ENTITY	CAS NUMBER	PROPORTION
Sodium Hydroxide	1310-73-2	10-50%
Water	7732-18-5	50-90%

SECTION 4 First Aid Measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

4.1 Inhalation

: If fumes or combustion products are inhaled removed from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital or doctor.

4.2 Skin contact

: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance. For gross contamination, immediately drench with water and remove clothing. Continue to flush skin and hair with plenty of water. For skin burns, cover with a clean, dry dressing until medical help is available. If blistering occurs, do NOT break blisters. If swelling, redness, blistering, or irritation occurs seek medical assistance. Transport to hospital or doctor.

4.3 Eye Contact

: Immediately irrigate with copious quantities of water. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

4.4 Ingestion

: DO NOT delay. For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean the patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay.

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ENVIRO BASE

4.5 Physician

: For acute or short-term repeated exposures to highly alkaline materials: Respiratory stress is uncommon but present occasionally because of soft tissue oedema. Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary. Oxygen is given as indicated. The presence of shock suggests perforation and mandates an intravenous line and fluid administration. Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue. Alkalis continue to cause damage after exposure.

Ingestion

: Milk and water are the preferred diluents. No more than 2 glasses of water should be given to an adult. Neutralizing agents should never be given since exothermic heat reaction may compound injury. Catharsis and emesis are absolutely contra-indicated. Activated charcoal does not absorb alkali. Gastric lavage should not be used. Supportive care involves the following: Withhold oral feedings initially. If endoscopy confirms transmucosal injury start steroids only within the first 48 hours. Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention. Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing.

SECTION 5: Firefighting Measures

Hazchem Code : 2R

Extinguishing Media : If material is involved in a fire, use water fog (or if unavailable, fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

Specific Hazards : aluminium/zinc causing flammable, explosive hydrogen gas. Reacts violently with acids. Caustic Compounds.

Fire fighting further advice : Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing or chemical splash suit.

Flammability Conditions : Not considered to be a significant fire risk.

Fire and Explosion Hazard : Non combustible liquid
: Non

Flash Point : Flammable.

Section 6: Accidental Release Measures

Avoid accidents, clean up immediately. Slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources of ignition.

6.1 Small Spills

Contain and absorb spill with sand, earthy, inert material or vermiculite. Place spilled material in clean, dry, sealable, labelled container.

6.2 Large Spills

Alert fire brigade and tell them location and nature of hazard. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralize/decontaminate residue. Collect solid residues and seal in labelled drums for disposal.

Decontamination : Wash area and prevent run off into drains.

Environmental : Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local waste Authority.

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ENVIRO BASE

Section 7: Handling and Storage

7.1 Handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Remove contaminated clothing and wash before re-use. Discard contaminated shoes. Keep away from combustible material. Empty containers pose a fire risk, evaporate residue under a fume hood. Chemicals should be used only by those trained in handling potentially hazardous materials.

7.2 Storage

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Protect from direct sunlight. Store away from food stuffs. Do not store in aluminium or galvanized containers or use die-cast zinc or aluminium bungs; plastic bungs should be used. At temperatures greater than 40°C, tanks must be stress relieved. Keep containers closed when not in use. This product has a UN classification of 1824 and a Dangerous Goods Class 8 (Corrosive) according to the Australian Code for the Transport of Dangerous goods by Road and Rail.

Section 8: Exposure Controls / Personal Protection

8.1 National Occupational Exposure limits

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing life threatening health effects is: sodium hydroxide 50mg/m³. Caustic Soda 50% Ceiling ppm².

Irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is: sodium hydroxide 5mg/m³.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Exposure Limits : No data available.

8.2 Biological Limit Values

No information available on biological limit values for this product.

8.3 Engineering Measures

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator.

8.4 Personal Protection Equipment

Safety Shoes, Overalls, Gloves, Face Shield, Respirator

Wear safety shoes, overalls, gloves, face shield, respirator. Use with adequate ventilations. If inhalation risk exists wear organic vapour/particulate respirator meeting with the requirements of AS/NZ 1716. Available information suggests that gloves made from nitrile rubber, polyvinyl chloride (PVC) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

EYES: Chemical goggles to prevent splashing in the eyes (AS1336/1337).

HANDS: Elbow length impervious gloves (AS2161).

CLOTHING: Chemical-resistance coveralls, splash apron and safety footwear (AS3765/2210).

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017



ENVIRO BASE

8.5 Hygiene Measures

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location

Section 9: Physical and Chemical Properties

Material Family	: No data available
Base Units	: Litre
Form	: Liquid
Colour	: Clear slightly hazy water-white
Odour	: No specific odour
Solubility	: Miscible with water.
Specific Gravity (20°C)	: 1.48-1.52
Density	: 1.515 g/ml Relative
Relative Vapour Density (air=1)	: 1.38 Air = 1
pH	: 12.7
Vapour Pressure	: <25hPa (@20°C)
Volatile Percent	: 50
Evaporation Rate	: Very Slow

(Typical values only - consult specification sheet) N Av = Not Available, N App = Not Applicable)

Section 10: Stability and Reactivity

General Information	: Corrosive Liquid.
Chemical Stability	: Product is stable under normal conditions of use, storage and temperature. Absorbs carbon dioxide from the air.
Conditions to avoid	: Presence of water. Presence of incompatible materials.
Incompatible materials	: Incompatible with acids, ammonium salts, aluminium, tin and zinc.
Hazardous decomposition products	: Corrosive to aluminium, tin, and zinc, liberating flammable hydrogen gas. Reacts violently with acids. Reacts with ammonium salts liberating ammonia gas. Reacts exothermically on dilution with water.
Hazardous Polymerisation	: Hazardous polymerisation will not occur.

Section 11: Toxicology Information

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms of effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects:

Inhalation	: Material may be an irritant to mucous membranes and respiratory tract
Skin Contact	: Contact with skin will result in severe irritation. Corrosive to skin - may cause burns.
Ingestion	: Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
Eye Contact	: A severe eye irritant. Corrosive to eyes: contact can cause corneal burns. Contamination of eyes can result in permanent injury.

Acute Toxicity:

Inhalation	: This material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea and a burning sensation.
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ENVIRO BASE

Section 11: Toxicology Information - Continued

Skin Contact	: Bare unprotected skin should not be exposed to this material. Acute toxicity estimate (based on ingredients): >500 mg/24hr SEVERE. This material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) swelling of the epidermis.
Ingestion	: Swallowing can cause nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract. Considered an unlikely route of entry in commercial/industrial environments.
Corrosion/Irritancy	: EYES: 0.05 mg/24hr SEVERE, 1 mg/24hr SEVERE, 1 mg/30s rinsed SEVERE. This product may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
Sensitisation	: Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.

Section 12: Ecological Information

Ecotoxicity	: Fish LC50 (96h): 43mg/l : Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once release to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes, (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. Such ionic species may bind to dissolved ligands or sorb to solid particulates in aquatic or aqueous media. : A significant proportion of dissolved/sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.
Persistence/Degradability	: Even though many metals show few toxic effects at physiological pHs, transformation may introduce new or magnified effects. A metal ion is considered infinitely persistent because it cannot degrade further. Persistence: Water/Soil: LOW
Mobility	: When released to dry soil, most metals will exhibit limited mobility and remain in the upper layer, some will leach locally into ground water and/or surface water ecosystems when soaked by rain or melt ice. Environmental processes may also be important in changing solubilities. Mobility: HIGH
Environmental Fate	: Prevent, by any means available, spillage from entering drains or water courses. DO NOT discharge into sewer or waterways.

Section 13: Disposal Considerations

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS. Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State and Federal Regulations or recycled/reconditioned at an approved facility. Decontamination and destruction of containers should be considered.

For land fill, contact a specialist disposal company or the local waste regulator for advice.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

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ENVIRO BASE

Section 14: Transport Information

14.1 Road and Rail Transport

Classified as Dangerous Goods by the criteria of the 'Australian Code for the Transport of Dangerous Goods by Road & Rail' and the 'New Zealand NZS5433: Transport of Dangerous Goods on Land'.

UN No : 1824
Dangerous Goods Class : 8
Packing Group: :II (2)



14.1 Road and Rail Transport - Continued

Hazchem Code : 2R
Emergency Response Guide No : 37 - Toxic and/or Corrosive Substances, Non-Combustible.
Proper Shipping Name : SODIUM HYDROXIDE SOLUTION
Segregation Dangerous Goods : Not to be loaded with explosives (class 1), dangerous when wet substances (Class 4.3), oxidising agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (class 7) or food and food packaging in any quantity. Note 1: Concentrated strong alkalis are incompatible with concentrated strong acids. Note 2: Acids are incompatible with Dangerous Goods of Class 6 which are cyanides. Exemptions may apply.

14.2 Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No : 1824
Dangerous Goods Class : 8
Packing Group: :II (2)
Hazchem Code : 2R
EMS : FA, SB
Marine Pollutant : No
Proper Shipping Name : SODIUM HYDROXIDE SOLUTION



14.3 Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No : 1824
Dangerous Goods Class : 8
Packing Group: :II (2)
Hazchem Code : 2R
EMS : FA, SB
Marine Pollutant : No
Proper Shipping Name : SODIUM HYDROXIDE SOLUTION



Section 16: Other Information

Reason for issue : Revision #2. - Update of SDS.

Revision Date: 10/03/2017

This information was prepared in good faith from the best information available at the time of use. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017

ENVIRO CHLORINE



SECTION 1 Identification: Product Identifier and chemical Identity

1.1 Product Identifier

Product Form : Liquid
Product Name : Chlorine Other Names : Liquid Chlorine, Hypochlorite Solution
Product Code : CON150

1.2 Recommended uses and restrictions

Recommended use : Bleaching agent. Water Treatment. Sanitising agent.

1.3 Supplier Information

Company Name : Enviroconcepts International Pty Ltd
: 65 612 894 738
: PO Box 6664 GCMC, Qld, 9726, Australia
: 07 5535 9000
: info@enviroconcept.com.au
: www.enviroconcept.com.au

1.4 Emergency telephone number

Emergency Number : 0426 260 445

SECTION 2 Hazards Identification

2.1 Classification of the hazardous chemicals

Aquatic Acute 1 H 400 - Very toxic to aquatic life.

Skin Corrosion/Irritation - Category 1B H314 Causes severe skin burns and eye damage.

2.2 Label Elements

Hazard Pictogram :



Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage
: H400 Very toxic to aquatic life.

Precautionary Statements

Prevention : P260 Do not breathe dust, fume, gas, mist, vapours or spray
: P280 Wear protective clothing, gloves, eye/face protection and suitable respirator
: P273 Avoid release to the environment
: P264 Wash hands, face and all exposed skin thoroughly after handling
: P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Response : P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
: P310 Immediately call a POISON CENTER or doctor/physician.
: P321 Specific treatment (see product label)

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ENVIRO CHLORINE

2.2 Label Elements Continued

- : P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- : P363 Wash contaminated clothing before re-use
- : P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- : P391 Collect spillage

Storage : P405 Store locked up

Disposal : P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

Poisons Schedule : S5. Poison

Additional information : AUH031 Contact with acids liberates toxic gas.

SECTION 3 Composition Information

CHEMICAL ENTITY	CAS NUMBER	PROPORTION
Hypochlorous acid, sodium salt	7681-52-9	10-<30%
Sodium Hydroxide	1310-73-2	<1%
Water	7732-18-5	>60%

SECTION 4 First Aid Measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

4.1 Inhalation

: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.

4.2 Skin contact

: Remove contaminated clothing and wash affected areas with soap and water. Seek immediate medical attention. Launder clothing before reuse.

4.3 Eye Contact

: In case of eye contact, check for and remove and contact lenses. Immediately irrigate eyes with plenty of running water for at least 15 minutes, keeping eyelids open. Seek

4.4 Ingestion

: If swallowed, do not induce vomiting. Wash mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

4.5 Notes to Physician

: Treat symptomatically.

SECTION 5 Firefighting Measures

Extinguishing Media : Water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry

Specific Hazards : Decomposes on heating emitting toxic chlorine fumes. Non-combustible material. Substance releases oxygen when heated, which may increase the severity of an existing fire. Use water spray to cool fire-exposed containers.

PPE / Precautions : Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.

Section 6: Accidental Release Measures

6.1 Small Spills

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

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ENVIRO CHLORINE

6.2 Large Spills

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred, advise local emergency services.

Section 7: Handling and Storage

7.1 Handling

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapors. Use only outdoors or in a well-ventilated area. Take precautionary measures against static discharge. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

7.2 Storage

Store in a cool, dry, well ventilated place and out of direct sunlight. Keep containers closed when not in use. Protect from heat. Store away from incompatible materials. Check regularly for spills.

Section 8: Exposure Controls / Personal Protection

8.1 National Occupational Exposure limits

	Code	TWA		
		ppm	mg/m3	
Sodium Hydroxide	1310-73-2	-	2*	* Peak Limitations
Chlorine	7782-50-5	1*	3*	

TWA - The time-weighted average airborne concentration over an eight hour working day, for a five day working week over and entire working life.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept too as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

8.2 Engineering Measures

Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator.

8.3 Personal Protection Equipment

Safety Shoes, Overalls, Gloves, Face Shield, Respirator

Wear safety shoes, overalls, gloves, face shield, respirator. Use with adequate ventilations. If inhalation risk exists wear organic vapour/particulate respirator meeting with the requirements of AS/NZ 1716.

8.4 Hygiene Measures

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

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ENVIRO CHLORINE

Section 9: Physical and Chemical Properties

Material Family

Base Units

Form : Liquid
Colour : Pale yellow-green
Odour : Slight chlorine odour

pH Value : 12.5 (1% w/w)

Relative Density at 20' : 1.2

Density : 1.403g/ml

Solubility in Water : Miscible

Values not listed here are not applicable.

Section 10: Stability and Reactivity

Chemical Stability : Slowly decomposes on contact with air. Rate increases with the concentration and temperature. Exposure to sunlight accelerates decomposition. Sodium hypochlorite becomes less toxic with age.

Conditions to avoid : Direct sunlight, heat and exposure to air.

Incompatible materials : Ammonia (chloramine gas may evolve), amines, ammonium salts, aziridine, methanol, phenyl acetonitrile, cellulose, ethyleneimine, oxidisable metals, acids, soaps and bisulfates.

Hazardous decomposition products : Decomposes on heating emitting toxic chlorine fumes.

Section 11: Toxicological Information

Values relevant for Classification:

7681-52-9 Hypochlorous acid, sodium salt.
5800 mg/kg (mouse)

1310-73-2 Sodium Hydroxide
2000 mg/kg (rat)

Acute Effects:

Inhalation : Material may be an irritant to mucous membranes and respiratory tract, delayed up to 48hrs. Fluid build up in lungs may occur.

Skin Contact : Contact with skin will result in severe irritation. Corrosive to skin - may cause burns.

Eye Contact : A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.

Ingestion : Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017



ENVIRO CHLORINE

Section 11: Toxicological Information - Continued

Corrosion/Irritancy	: Causes eye damage.
	: Causes severe skin burns.
Sensitisation	: No sensitising effects known.
Aspiration Hazard	: No information available.
Specific target organ toxicity (single exposure)	: No information available.

Chronic Toxicity:

Mutagenicity	: No information available.
Carcinogenicity	: Does not contain any IARC listed chemicals.
Reproductive toxicity (including via lactation)	: No information available.
Specific target organ toxicity (single exposure)	: No information available.

Section 12: Ecological Information

Ecotoxicity	: Very toxic to aquatic organisms. Expected to be harmful to terrestrial species. Avoid contaminating waterways.
Persistence/Degradability	: No further relevant information available
Bioaccumulative Potential	: No further relevant information available
Mobility in soil	: No further relevant information available

Section 13: Disposal Considerations

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS. If possible, material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

Section 14: Transport Information

14.1 Road and Rail Transport

Classified as Dangerous Goods by the criteria of the 'Australian Code for the Transport of Dangerous Goods by Road & Rail' and the 'New Zealand NZS5433: Transport of Dangerous Goods on Land'.

14.1 Road and Rail Transport - Continued

UN No	: 1791
Dangerous Goods Class	: 8 Corrosive Substances
Packing Group:	: II (2)
Hazchem Code	: 2X
Emergency Response Guide No	: 37
Proper Shipping Name	: Hypochlorite Solution
Limited Quantities	: 1L
Packaging & IBCs - Packing instructions	: P001, IBC02
Packaging & IBCs - Special Packing Provisions	: PP10, B5
Portable Tank/ Bulk Containers - Instructions	: T7
Portable Tank/ Bulk Containers - Provisions	: TP2, TP24



Safety Data Sheet

According to the Model Work Health and Safety Regulations

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ENVIRO CHLORINE

Section 15: Other Information

- ADG** : Australian Dangerous Goods
- IMDG** : International Maritime Code for Dangerous Goods.
- IATA** : International Air transport Association.
- GHS** : Globally Harmonized System of Classification and Labelling of Chemicals.
- VOC** : Volatile Organic Compounds
- LC50** : LC50 Lethal Concentration, 50 percent
- LD50** : Lethal Dose, 50 percent
- IARC** : International Agency for Research on Cancer.

Reason for issue : Update

This information was prepared in good faith from the best information available at the time of use. It is based on the present level of reasearch and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer, it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017

ENVIRO DEX



SECTION 1 Identification: Product Identifier and chemical Identity

1.1 Product Identifier

Product Form : Liquid

Product Name : Turbidex Other Names :

1.2 Recommended uses and restrictions

Recommended use : Water filter media

1.3 Supplier Information

Company Name : Enviroconcepts International Pty Ltd
: 65 612 894 738
: PO Box 6664 GCMC, Qld, 9726, Australia
: 07 5535 9000
: info@enviroconcept.com.au
: www.enviroconcept.com.au

1.4 Emergency telephone number

Emergency Number : 0426 260 445

SECTION 2 Hazards Identification

2.1 Classification of the hazardous chemicals

Classification according to Regulations (EC) no 1272/2008

GHS07 Actue Tox 4 : H332 Harmful if inhaled



Skin Irrit. 2 : H315 Causes Skin Irritation

Eye Irrit. 3 : Causes serious eye irritation.

STOT SE 3 : H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful



R20: Harmful by inhalation

XI; Irritant

R36/37/38 Irritating to eyes, respiratory system and skin.

2.2 Label Elements

Labelling according to Regulations (EC) No 1272/2008

Hazard Pictogram :



Signal Word : Warning

Hazard-determining components of labelling: Clinoptilolite Zeolite/Potassium, Calcium, Sodium Aluminosilicate.

Hazard Statements : H332 Harmful if inhaled
: H315 Causes skin irritation
: H319 Causes serious eye irritation
: H335 May cause respiratory irritation

Precautionary Statements

Prevention : P280 Wear eye/face protection.
: P261 Avoid breathing in dust
: P305+P351+P333 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

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ENVIRO DEX

2.2 Label Elements Continued..

: P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
: P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Hazard Description:

WHMIS- Symbol : D2B - Toxic material causing other toxic effects.



NFPA Ratings (0-4)



Health = 2
Fire = 0
Reactivity = 0

HMIS Ratings (0-4)



Health = 2
Fire = 0
Reactivity = 0

SECTION 3 Composition Information

CAS No Description : 12173-10-3 Clinoptilolite Zeolite/Potassium, Calcium, Sodium Aluminosilicate

Identification No 8

Impurities & Stabilising : Additives Present Below 0.1%: quartz/crystalline silica.

CAS: 14808-60-7 Quartz (SiO₂)

EINECS: 238-878-4



Xn R48/20



STOT RE 2, H373

SECTION 4 First Aid Measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

4.1 Inhalation

: Supply fresh air, consult doctor in case of complaints.

4.2 Skin contact

: Immediately wash with water and soap, rinse thoroughly. If skin irritation continues, consult a doctor.

4.3 Eye Contact

: Remove contact lenses if worn. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

4.4 Ingestion

: Rinse out mouth and then drink plenty of water. Do not induce vomiting; call for medical help immediately.

SECTION 5 Firefighting Measures

Extinguishing Media : Use fire extinguishing methods suitable to surrounding conditions.

Fire fighting further advice: Not applicable.

Protective Equipment : Wear self-contained respiratory protective device. Wear fully protective suit.

Section 6: Accidental Release Measures

6.1 Personal Precautions, protective equipment and emergency procedures

Use respiratory protective device against the effects of fumes/dust/aerosol/ Ensure adequate ventilation.

6.2 Methods and Material for containment and cleaning up

Pick up mechanically. Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017



ENVIRO DEX

Section 7: Handling and Storage

7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Thorough dedusting. Prevent formation of dust.

Information about fire and explosion: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Requirements to be met by storerooms and receptacles: Avoid storage near extreme heat, ignition sources or open flames. Provide ventilation in receptacles.

Information about storage in one common storage facility: Store away from oxidising agents. Store away from foodstuffs.

Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Ingredients with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored in the workplace.

DNELs: No further relevant information available.

PNECs: No further relevant information available.

Additional information: The lists valid during the making were used as basis.

8.2 Exposure Controls

Personal Protective Equipment: General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of the work. Do not inhale dust/smoke/mist.

Respiratory Protection: Not required under normal conditions of use. Use respiratory protection when grinding or cutting material. Use suitable respiratory protective device when high concentrations are present.

Protection of hands: Protective gloves.



Body protection: Protective work clothing.

Eye protection: Safety glasses.



Limitation and supervision of exposure into the environment.

Limitation and supervision of exposure into the environment: No further relevant information available.

Risk management measures: See section 7 for additional information. No further relevant information available.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Form : Granulate

Colour : Yellowish

Odour : Characteristic

pH Value : Not determined

Danger of explosion : Product does not present an explosion hazard

Density at 20' C : 2,2-2,4 g/cm3

Solubility : Not miscible or difficult to mix

Section 10: Stability and Reactivity

Thermal decomposition/conditions to be avoided: No decomposition if used and stored according to specifications.

Possibility of hazardous reactions: As the product is supplied it is not capable of dust explosion, however, enrichment with fine dust causes risk of dust explosion.

Hazardous decomposition products: Toxic metal oxide smoke.

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017



ENVIRO DEX

Section 11: Toxicological Information

Information on toxicology effects:

Acute Effects:

On the Skin: Irritant to skin and mucous membranes.

On the Eye: Irritating effect.

Sensitization: No sensitizing effects known.

Repeated dose toxicity: May cause damage to organs through prolonged or repeated exposure.

Section 12: Ecological Information

Aquatic toxicity. : No further relevant information available

Persistence and degradability : No further information available.

Bioaccumulative potential : No further relevant information available.

Mobility in soil : No further relevant information available.

Additional ecological information:

General Notes : Generally not hazardous for water.

Results of PBT and vPvB assessment: : PBT Not applicable

: vPvB Not applicable

Other adverse effects : No further relevant information available.

Section 13: Disposal Considerations

Waste treatment methods:

Recommendation : Smaller quantities can be disposed of with household waste.

: Can be reused after reprocessing.

Uncleaned packaging:

Recommendation : Disposal must be made according to official regulations

Section 14: Transport Information

UN Number : DOT, ADR, AND, IMDG, IATA N/A

UN Proper Shipping Name: : DOT, ADR, AND, IMDG, IATA N/A

Safety Data Sheet

According to the Model Work Health and Safety Regulations

Revision Date: 10/03/2017



ENVIRO DEX

14.1 Road and Rail Transport - Continued

UN No :2796

Dangerous Goods Class :8

Packing Group: :II (2)

Hazchem Code : 2R

Emergency Response Guide No : 37

Proper Shipping Name : Turbidex

Segregation Dangerous Goods : Not to be loaded with explosives (class 1), dangerous when wet substances (Class 4.3), oxidising agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (class 7) or food and food packaging in any quantity. Note 1: Concentrated strong alkalis are incompatible with concentrated strong acids. Note 2: Concentrated strong acids are incompatible with concentrated strong alkalis. Note 3: Acids are incompatible with Dangerous Goods of Class 6 which are cyanides. Exemptions may apply.



14.2 Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No :2796

Dangerous Goods Class :8

Packing Group: :II (2)

Proper Shipping Name : Turbidex



14.3 Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No :2796

Dangerous Goods Class :8

Packing Group: :II (2)

Proper Shipping Name : Turbidex



Section 15: Regulatory Information

This material is not subject to the following International Agreements:

Montreal Protocol (Ozone depleting substances)

The Stockholm Convention (Persistent Organic Pollutants)

The Rotterdam Convention (Prior Informed Consent)

International Convention for the Prevention of Pollution from Ships (MARPOL).

This material is subject to the following International agreements:

Basel Convention (Hazardous Waste) - Acidic Solutions or acids in solid form.

This material/constituent(s) is covered by the following requirements:

- The Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act (Commonwealth).

- All components of this product are listed on or exempt from the Australian Inventory of Chemical Substances (AICS).

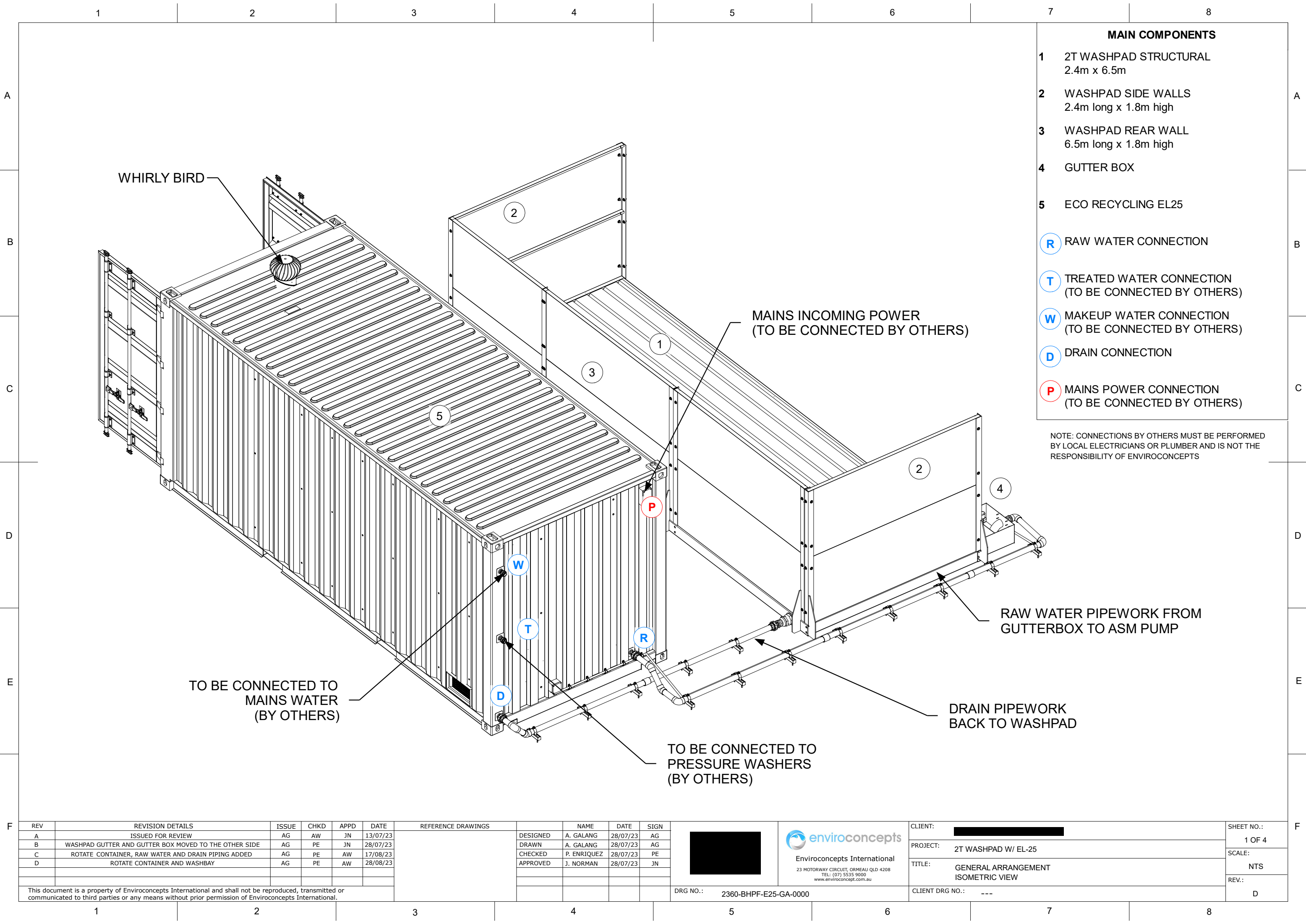
Section 16: Other Information

Reason for issue : Revision

This information was prepared in good faith from the best information available at the time of use. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.



Design Diagrams & Drawings



- MAIN COMPONENTS
- 1

2T WASHPAD STRUCTURAL
2.4m x 6.5m
- 2

WASHPAD SIDE WALLS
2.4m long x 1.8m high
- 3

WASHPAD REAR WALL
6.5m long x 1.8m high
- 4

GUTTER BOX
- 5

ECO RECYCLING EL25
- R

RAW WATER CONNECTION
- T

TREATED WATER CONNECTION
(TO BE CONNECTED BY OTHERS)
- W

MAKEUP WATER CONNECTION
(TO BE CONNECTED BY OTHERS)
- D

DRAIN CONNECTION
- P

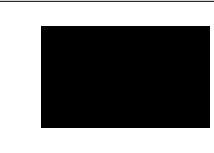
MAINS POWER CONNECTION
(TO BE CONNECTED BY OTHERS)

NOTE: CONNECTIONS BY OTHERS MUST BE PERFORMED BY LOCAL ELECTRICIANS OR PLUMBER AND IS NOT THE RESPONSIBILITY OF ENVIROCONCEPTS

REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE
A	ISSUED FOR REVIEW	AG	AW	JN	13/07/23
B	WASHPAD GUTTER AND GUTTER BOX MOVED TO THE OTHER SIDE	AG	PE	JN	28/07/23
C	ROTATE CONTAINER, RAW WATER AND DRAIN PIPING ADDED	AG	PE	AW	17/08/23
D	ROTATE CONTAINER AND WASHBAY	AG	PE	AW	28/08/23

REFERENCE DRAWINGS

	NAME	DATE	SIGN
DESIGNED	A. GALANG	28/07/23	AG
DRAWN	A. GALANG	28/07/23	AG
CHECKED	P. ENRIQUEZ	28/07/23	PE
APPROVED	J. NORMAN	28/07/23	JN

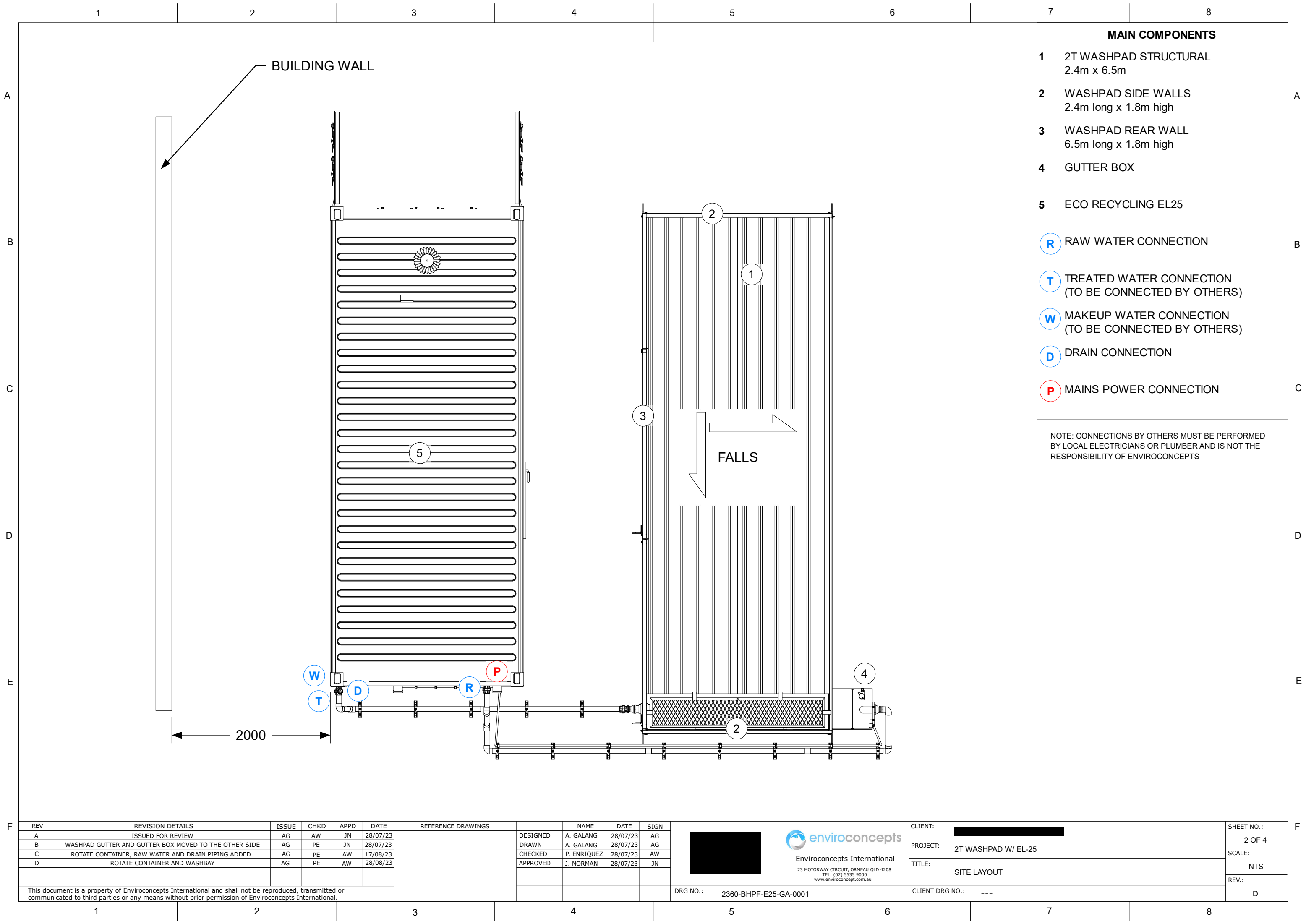


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DRG NO.: 2360-BHPF-E25-GA-0000

CLIENT:		SHEET NO.:	1 OF 4
PROJECT:	2T WASHPAD W/ EL-25	SCALE:	NTS
TITLE:	GENERAL ARRANGEMENT ISOMETRIC VIEW	REV.:	D
CLIENT DRG NO.:	---		



MAIN COMPONENTS

- 1

2T WASHPAD STRUCTURAL
2.4m x 6.5m
- 2

WASHPAD SIDE WALLS
2.4m long x 1.8m high
- 3

WASHPAD REAR WALL
6.5m long x 1.8m high
- 4

GUTTER BOX
- 5

ECO RECYCLING EL25
- R

RAW WATER CONNECTION
- T

TREATED WATER CONNECTION
(TO BE CONNECTED BY OTHERS)
- W

MAKEUP WATER CONNECTION
(TO BE CONNECTED BY OTHERS)
- D

DRAIN CONNECTION
- P

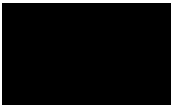
MAINS POWER CONNECTION

NOTE: CONNECTIONS BY OTHERS MUST BE PERFORMED BY LOCAL ELECTRICIANS OR PLUMBER AND IS NOT THE RESPONSIBILITY OF ENVIROCONCEPTS

REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE
A	ISSUED FOR REVIEW	AG	AW	JN	28/07/23
B	WASHPAD GUTTER AND GUTTER BOX MOVED TO THE OTHER SIDE	AG	PE	JN	28/07/23
C	ROTATE CONTAINER, RAW WATER AND DRAIN PIPING ADDED	AG	PE	AW	17/08/23
D	ROTATE CONTAINER AND WASHBAY	AG	PE	AW	28/08/23

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REFERENCE DRAWINGS	NAME	DATE	SIGN
DESIGNED	A. GALANG	28/07/23	AG
DRAWN	A. GALANG	28/07/23	AG
CHECKED	P. ENRIQUEZ	28/07/23	AW
APPROVED	J. NORMAN	28/07/23	JN

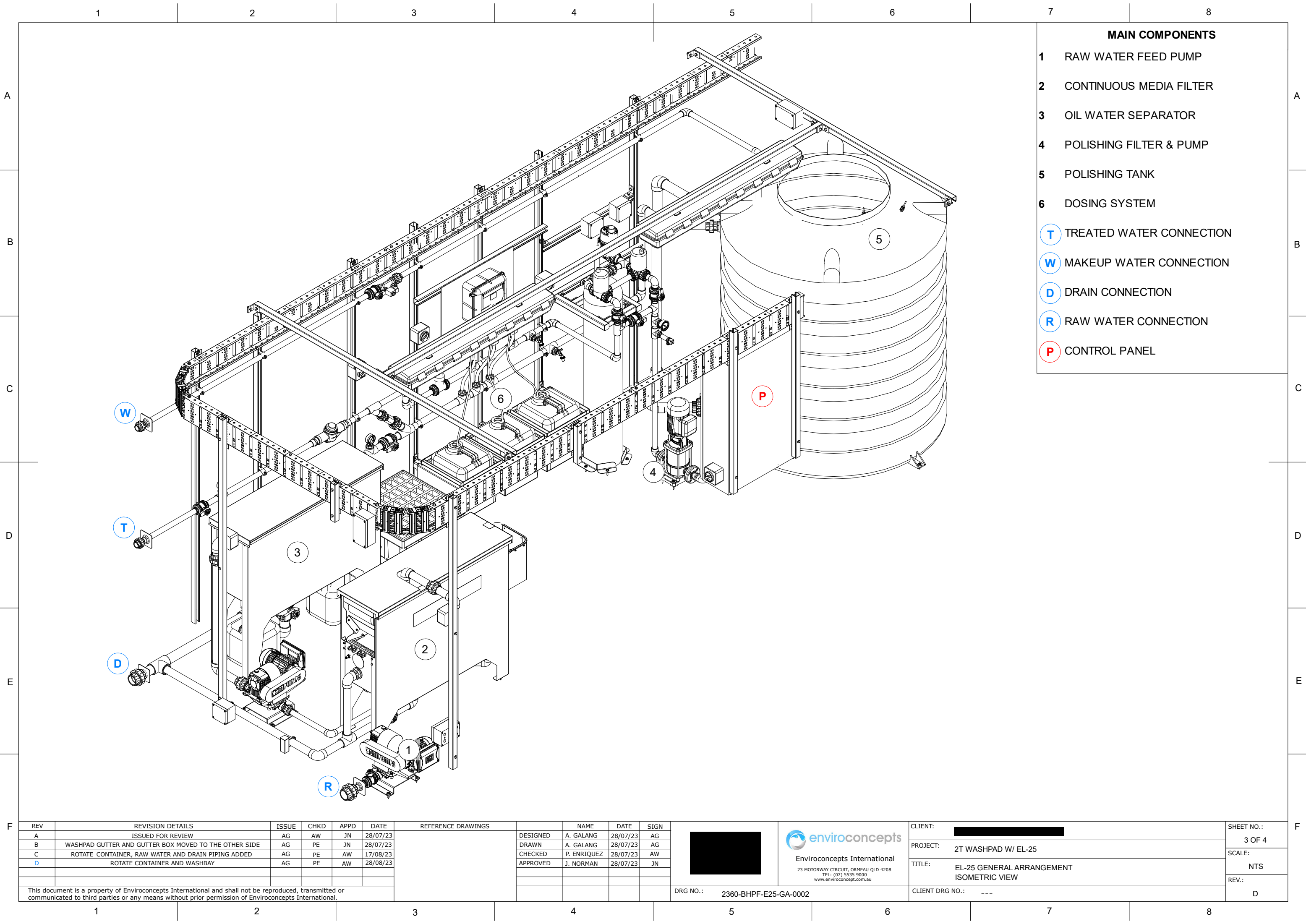




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DRG NO.: 2360-BHPF-E25-GA-0001

CLIENT:		SHEET NO.:	2 OF 4
PROJECT:	2T WASHPAD W/ EL-25	SCALE:	NTS
TITLE:	SITE LAYOUT	REV.:	D
CLIENT DRG NO.:	---		



MAIN COMPONENTS

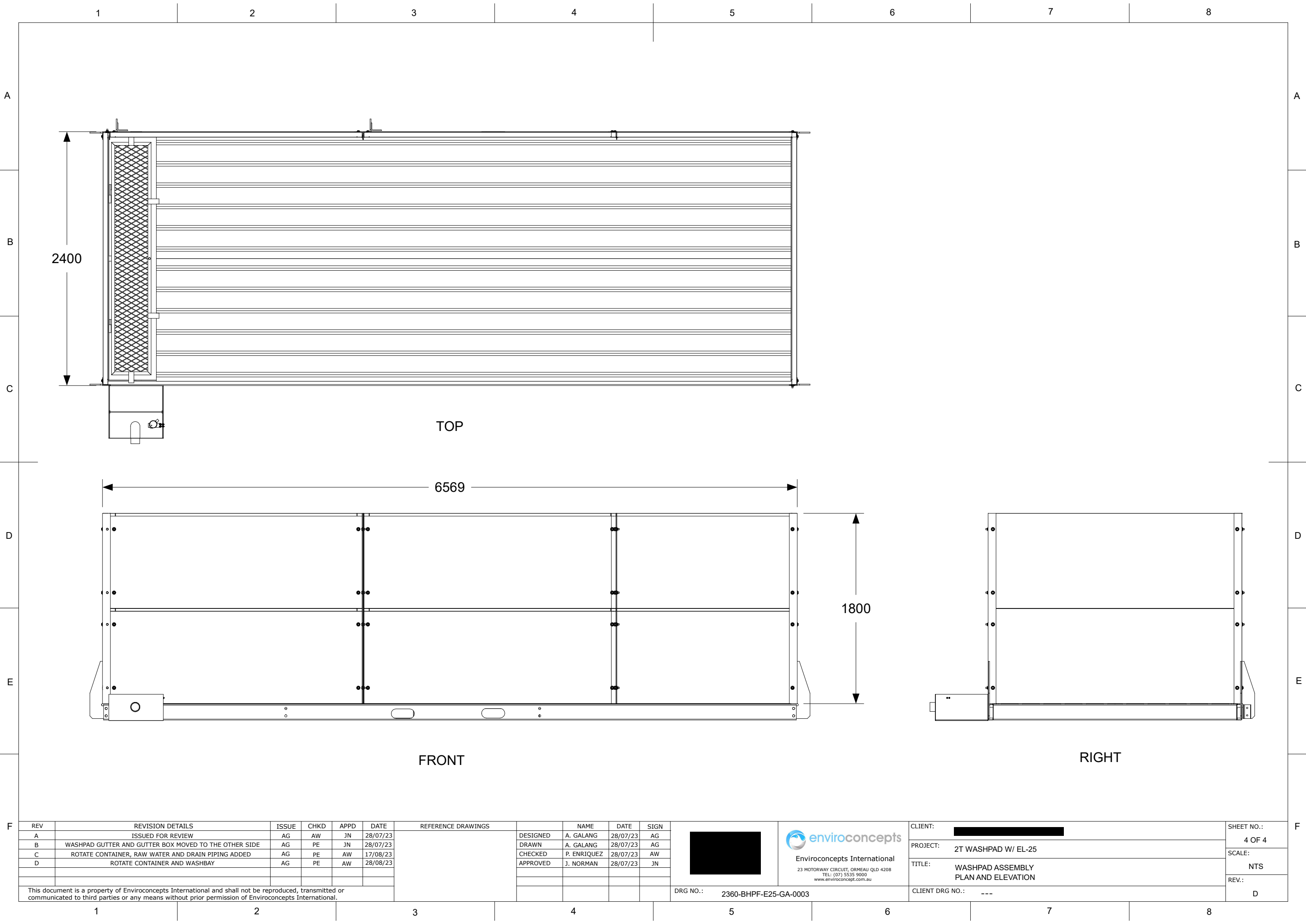
- 1 RAW WATER FEED PUMP
- 2 CONTINUOUS MEDIA FILTER
- 3 OIL WATER SEPARATOR
- 4 POLISHING FILTER & PUMP
- 5 POLISHING TANK
- 6 DOSING SYSTEM
- T TREATED WATER CONNECTION
- W MAKEUP WATER CONNECTION
- D DRAIN CONNECTION
- R RAW WATER CONNECTION
- P CONTROL PANEL

REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	REFERENCE DRAWINGS	DESIGNED	NAME	DATE	SIGN	CLIENT:	SHEET NO.:
A	ISSUED FOR REVIEW	AG	AW	JN	28/07/23		DRAWN	A. GALANG	28/07/23	AG		3 OF 4
B	WASHPAD GUTTER AND GUTTER BOX MOVED TO THE OTHER SIDE	AG	PE	JN	28/07/23		CHECKED	P. ENRIQUEZ	28/07/23	AW		SCALE:
C	ROTATE CONTAINER, RAW WATER AND DRAIN PIPING ADDED	AG	PE	AW	17/08/23		APPROVED	J. NORMAN	28/07/23	JN		NTS
D	ROTATE CONTAINER AND WASHBAY	AG	PE	AW	28/08/23							REV.:
												D

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REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE
A	ISSUED FOR REVIEW	AG	AW	JN	28/07/23
B	WASHPAD GUTTER AND GUTTER BOX MOVED TO THE OTHER SIDE	AG	PE	JN	28/07/23
C	ROTATE CONTAINER, RAW WATER AND DRAIN PIPING ADDED	AG	PE	AW	17/08/23
D	ROTATE CONTAINER AND WASHBAY	AG	PE	AW	28/08/23

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REFERENCE DRAWINGS

	NAME	DATE	SIGN
DESIGNED	A. GALANG	28/07/23	AG
DRAWN	A. GALANG	28/07/23	AG
CHECKED	P. ENRIQUEZ	28/07/23	AW
APPROVED	J. NORMAN	28/07/23	JN





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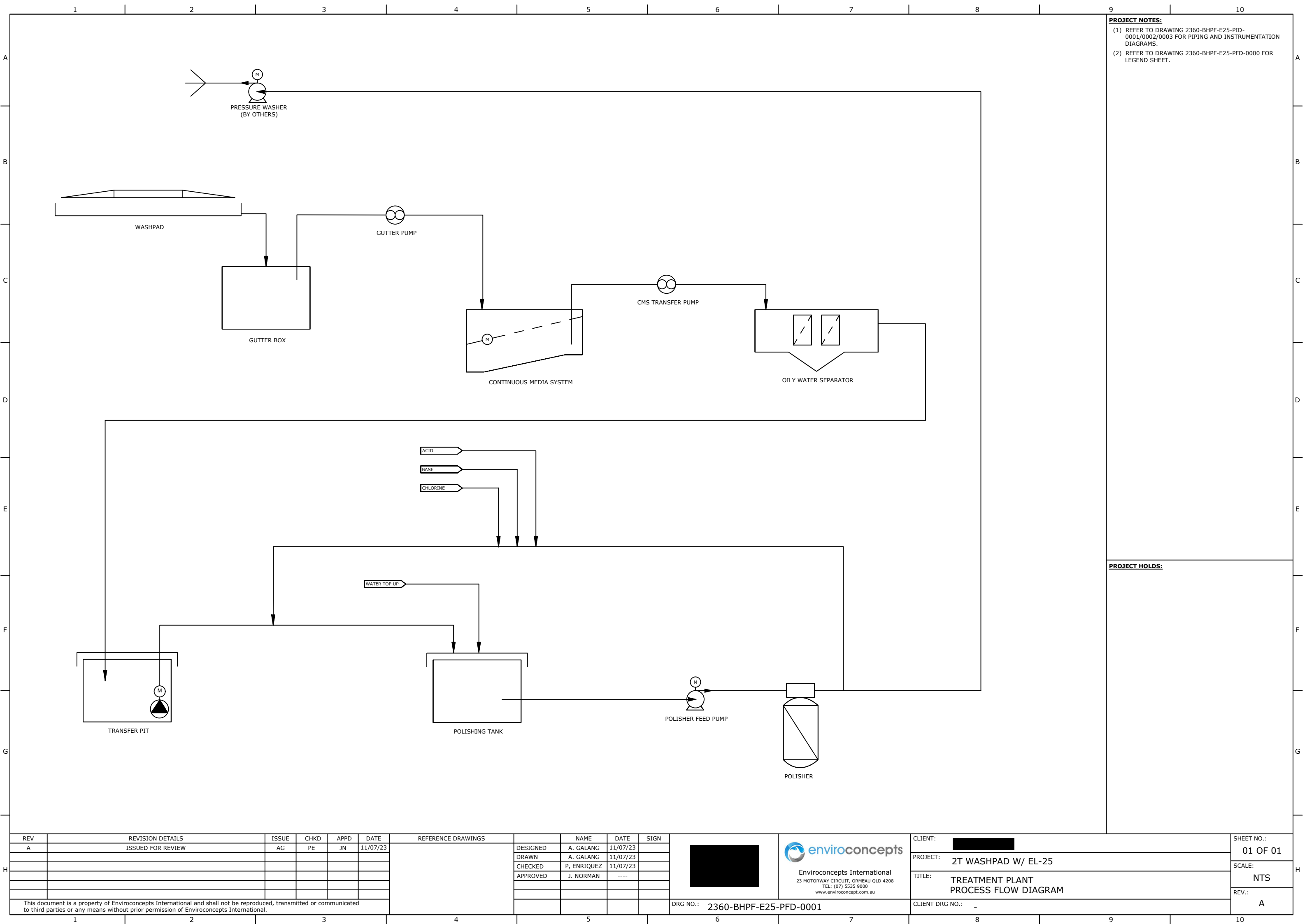
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DRG NO.: 2360-BHPF-E25-GA-0003

CLIENT:	
PROJECT:	2T WASHPAD W/ EL-25
TITLE:	WASHPAD ASSEMBLY PLAN AND ELEVATION
CLIENT DRG NO.:	---

SHEET NO.:	4 OF 4
SCALE:	NTS
REV.:	D

[illegible]



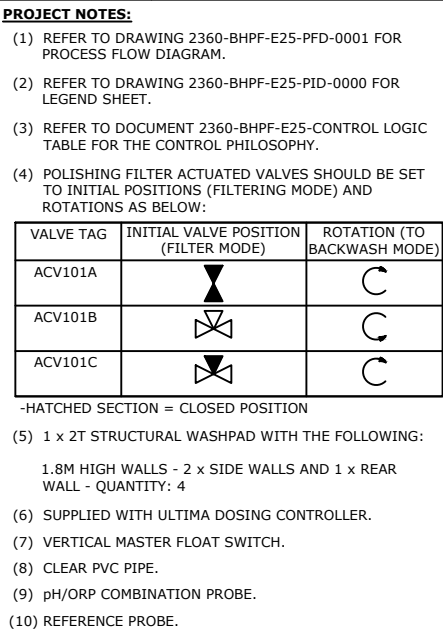
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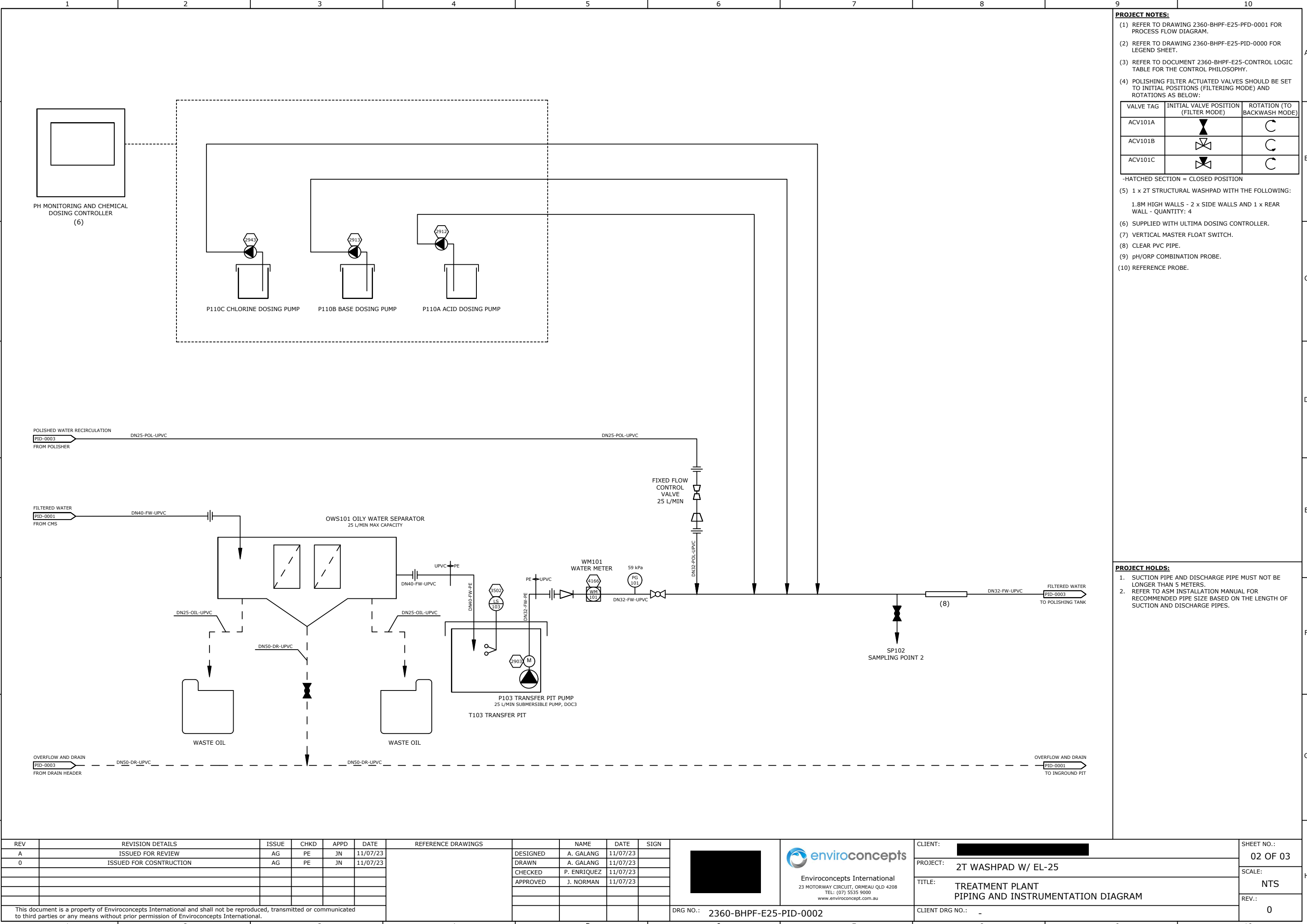
(1) REFER TO DRAWING 2360-BHPF-E25-PID-0001/0002/0003 FOR PIPING AND INSTRUMENTATION DIAGRAMS.

(2) REFER TO DRAWING 2360-BHPF-E25-PFD-0000 FOR LEGEND SHEET.

PROJECT HOLDS:

REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	REFERENCE DRAWINGS	DESIGNED	NAME	DATE	SIGN	CLIENT:	SHEET NO.:
A	ISSUED FOR REVIEW	AG	PE	JN	11/07/23		DRAWN	A. GALANG	11/07/23			01 OF 01
							CHECKED	P. ENRIQUEZ	11/07/23			SCALE:
							APPROVED	J. NORMAN	----			NTS
												REV.:
												A
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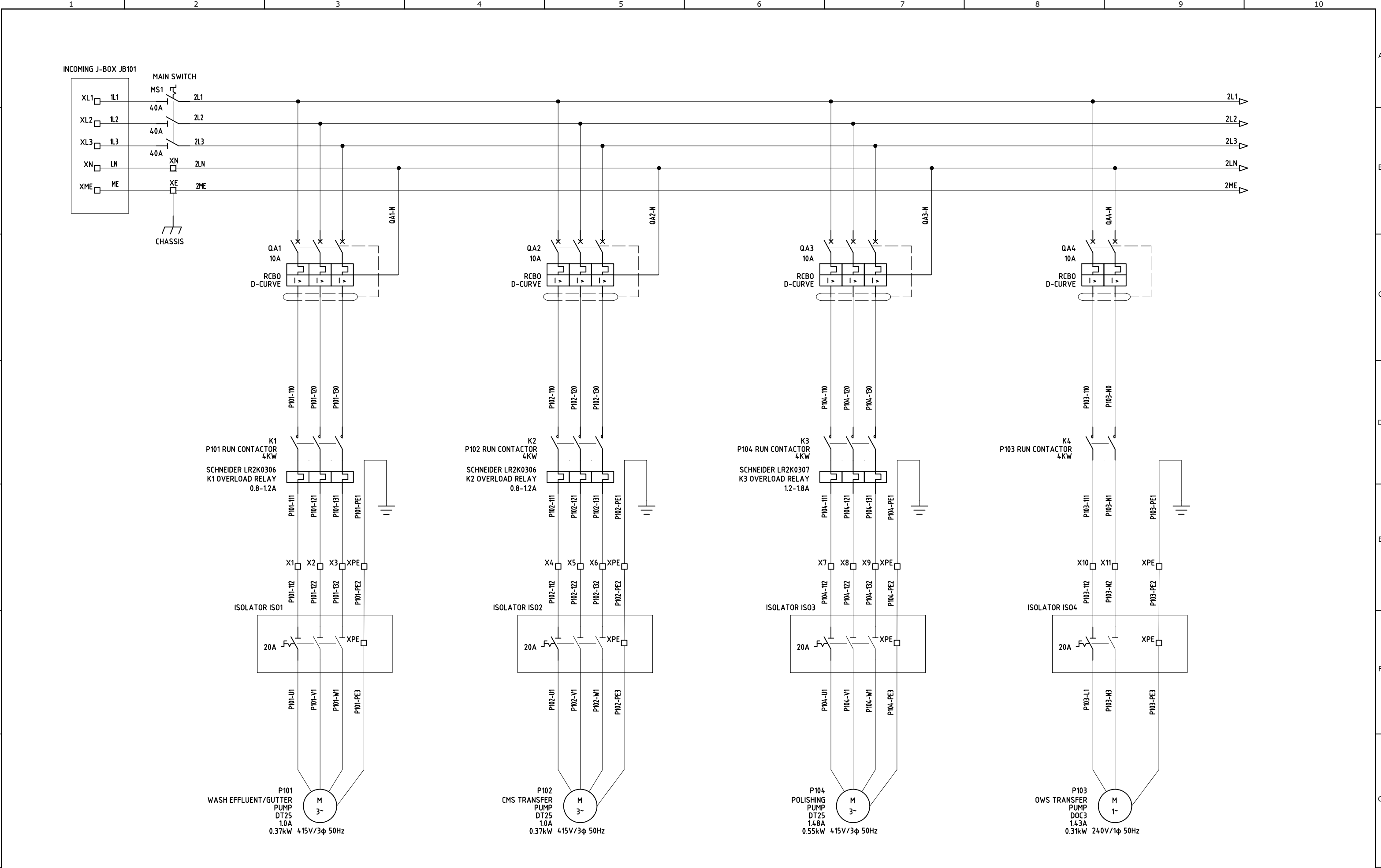
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0	ISSUED FOR COSNTRUCTION	AG	PE	JN	11/07/23			A. GALANG	11/07/23			
								P. ENRIQUEZ	11/07/23			
								J. NORMAN	11/07/23			
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DRG NO.:	2360-BHPF-E25-PID-0002	CLIENT DRG NO.:	-
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PROJECT:	2T WASHPAD W/ EL-25	SCALE:	NTS
TITLE:	TREATMENT PLANT PIPING AND INSTRUMENTATION DIAGRAM	REV.:	0

CLIENT:		SHEET NO.:	02 OF 03
PROJECT:	2T WASHPAD W/ EL-25	SCALE:	NTS
TITLE:	TREATMENT PLANT PIPING AND INSTRUMENTATION DIAGRAM	REV.:	0
CLIENT DRG NO.:	-		

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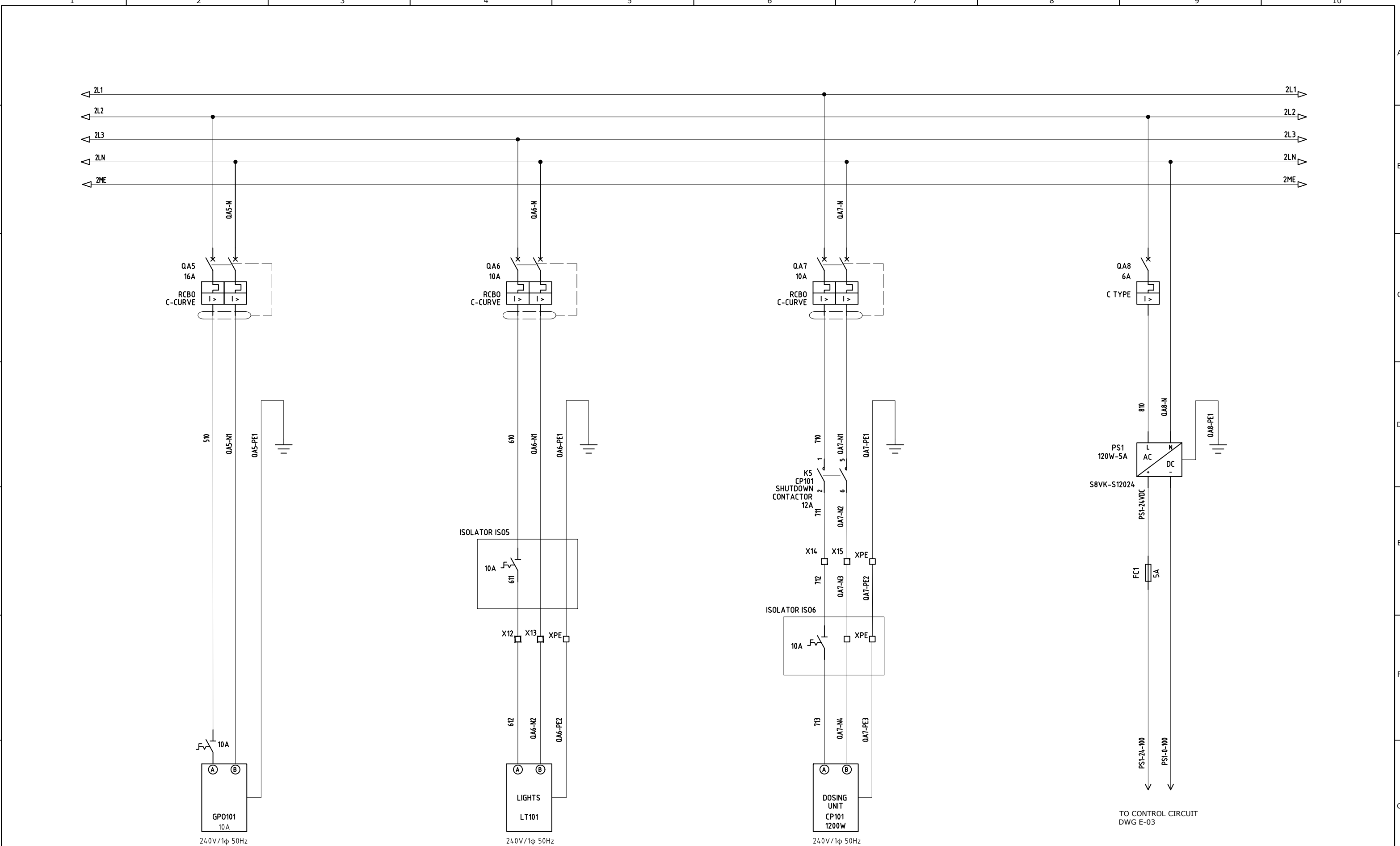


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0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23		DRAWN	P. ENRIQUEZ	26/07/23	PE		SCALE:
							CHECKED	S. SHEARD	15/08/23	SS		NTS
							APPROVED	A. WINTER	15/08/23	AW		REV.:
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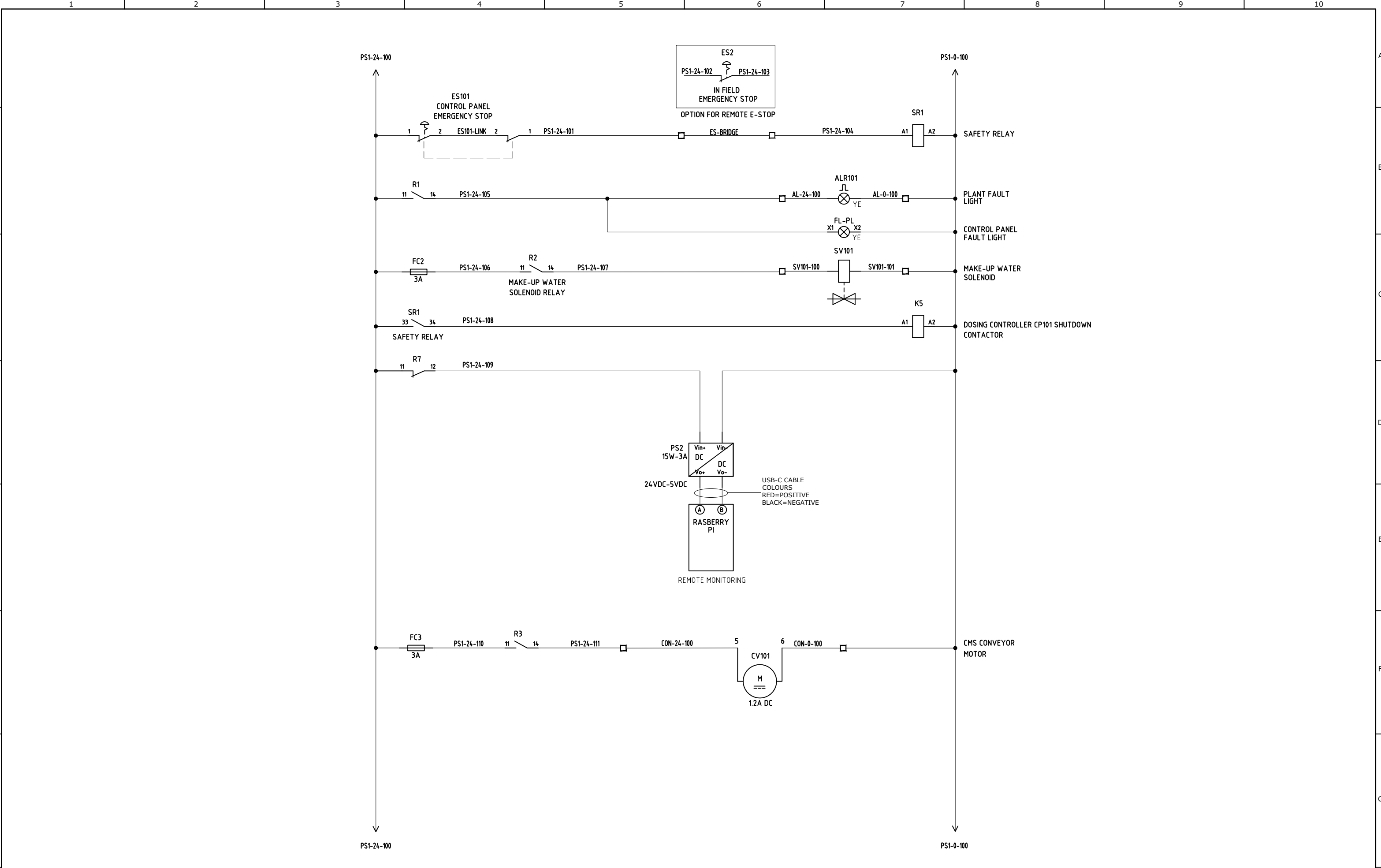


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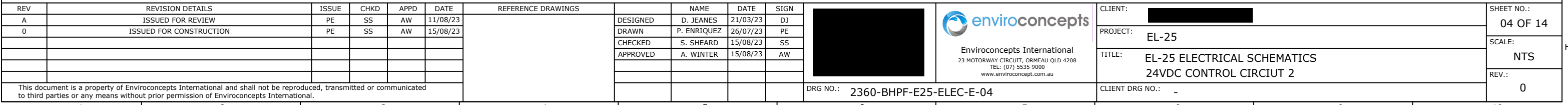
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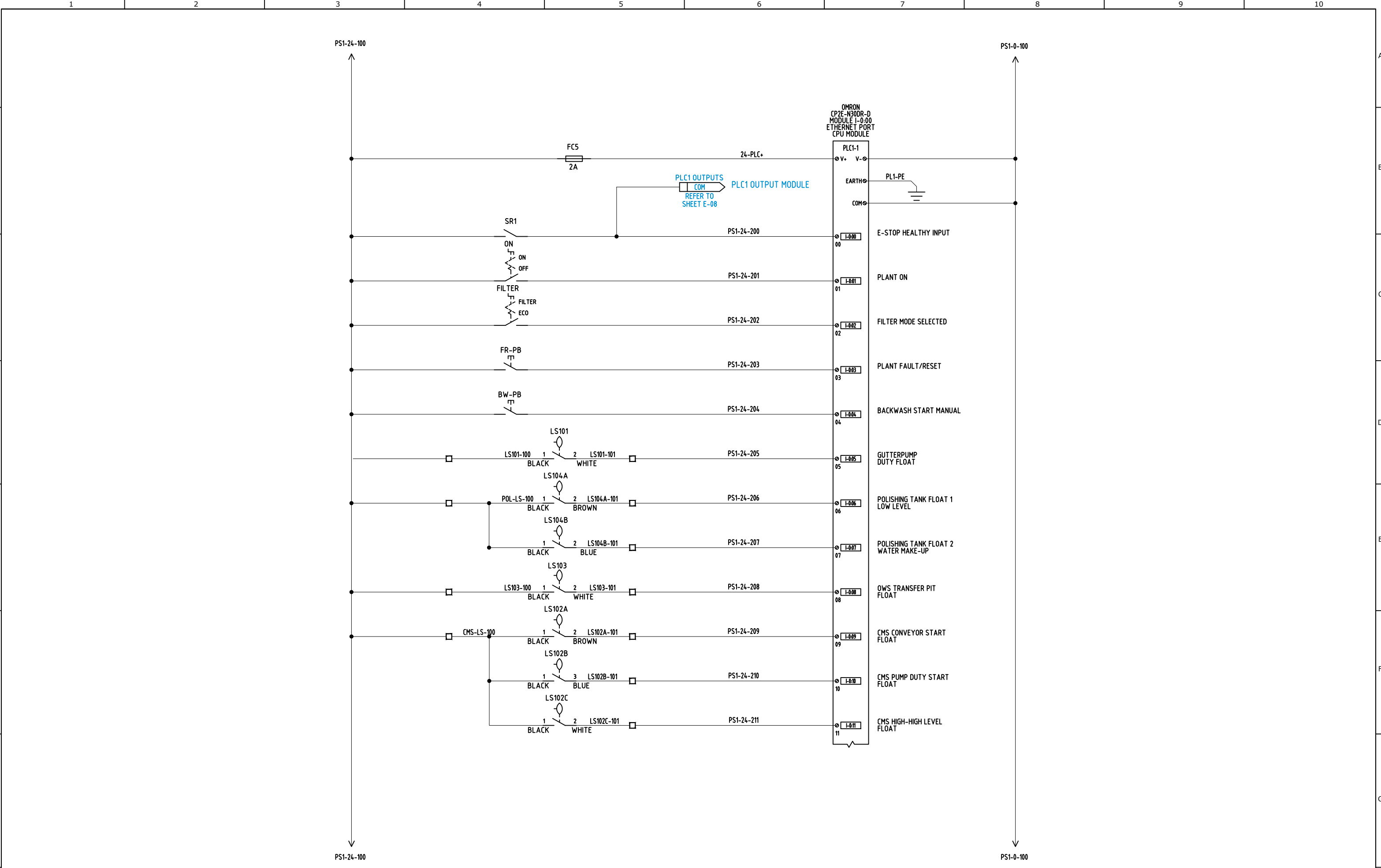
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A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23	DESIGNED	D. JEANES	21/03/23	DJ			PROJECT:					EL-25
0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23	DRAWN	P. ENRIQUEZ	26/07/23	PE			TITLE:	EL-25 ELECTRICAL SCHEMATICS POWER DISTRIBUTION 2	SCALE:			
						CHECKED	S. SHEARD	15/08/23	SS					NTS			
						APPROVED	A. WINTER	15/08/23	AW					REV.:			
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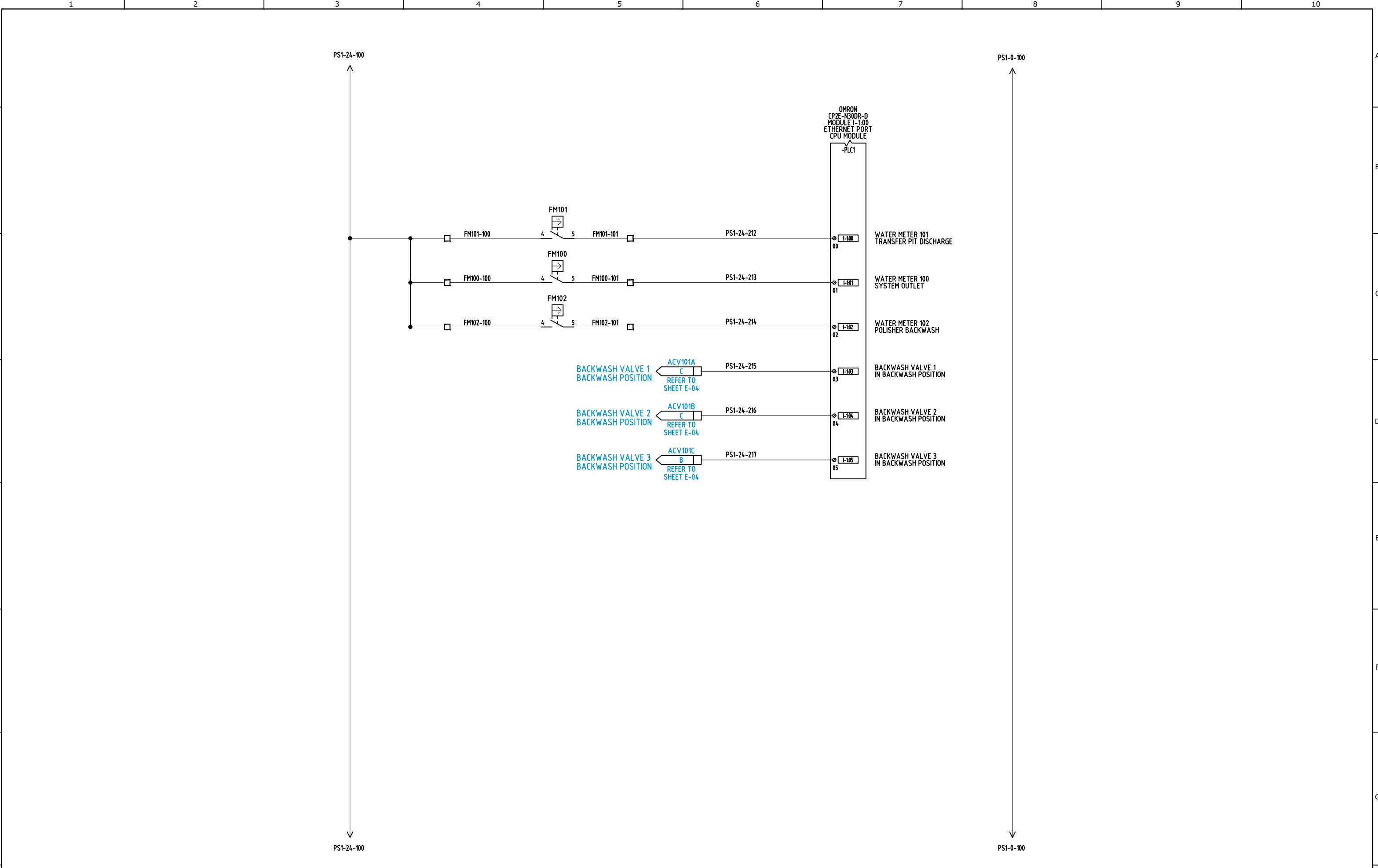
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0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23		DRAWN	P. ENRIQUEZ	26/07/23	PE		SCALE:
							CHECKED	S. SHEARD	15/08/23	SS		NTS
							APPROVED	A. WINTER	15/08/23	AW		REV.:
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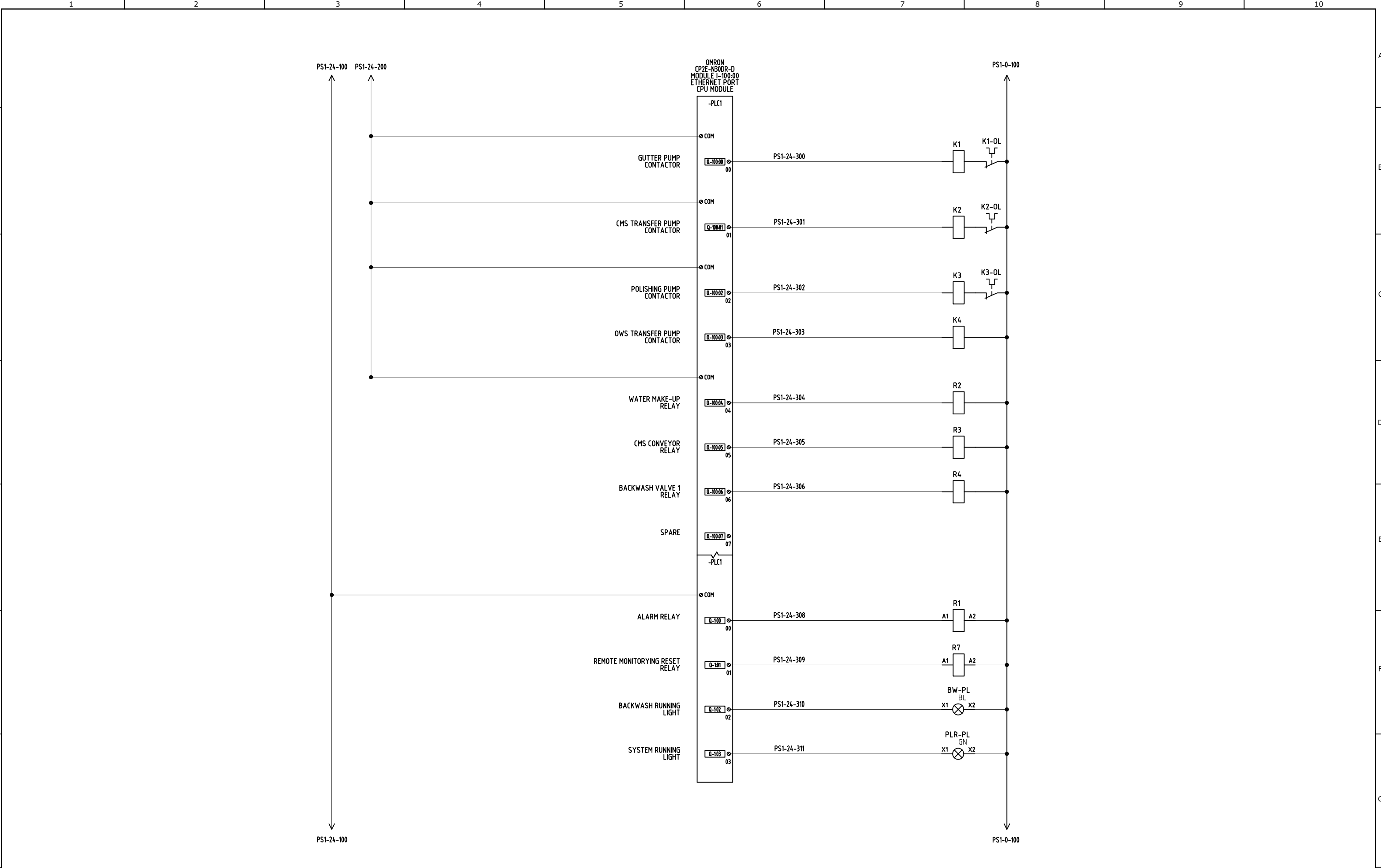
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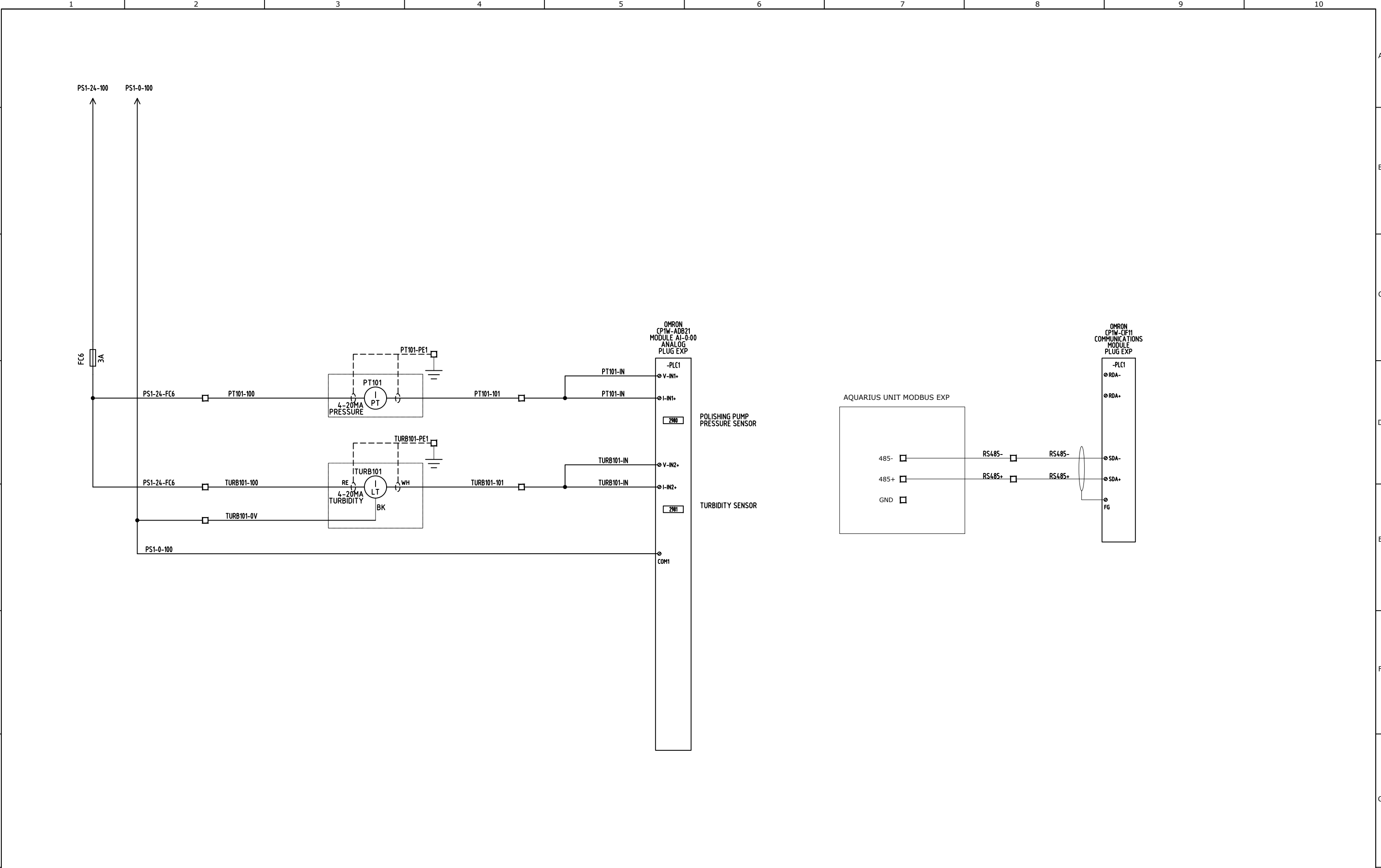
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A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23	DESIGNED	D. JEANES	21/03/23	DJ	PROJECT: EL-25			SCALE: NTS	
0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23	DRAWN	P. ENRIQUEZ	26/07/23	PE	TITLE: EL-25 ELECTRICAL SCHEMATICS PLC INPUTS 1				REV.: 0
						CHECKED	S. SHEARD	15/08/23	SS					
						APPROVED	A. WINTER	15/08/23	AW					
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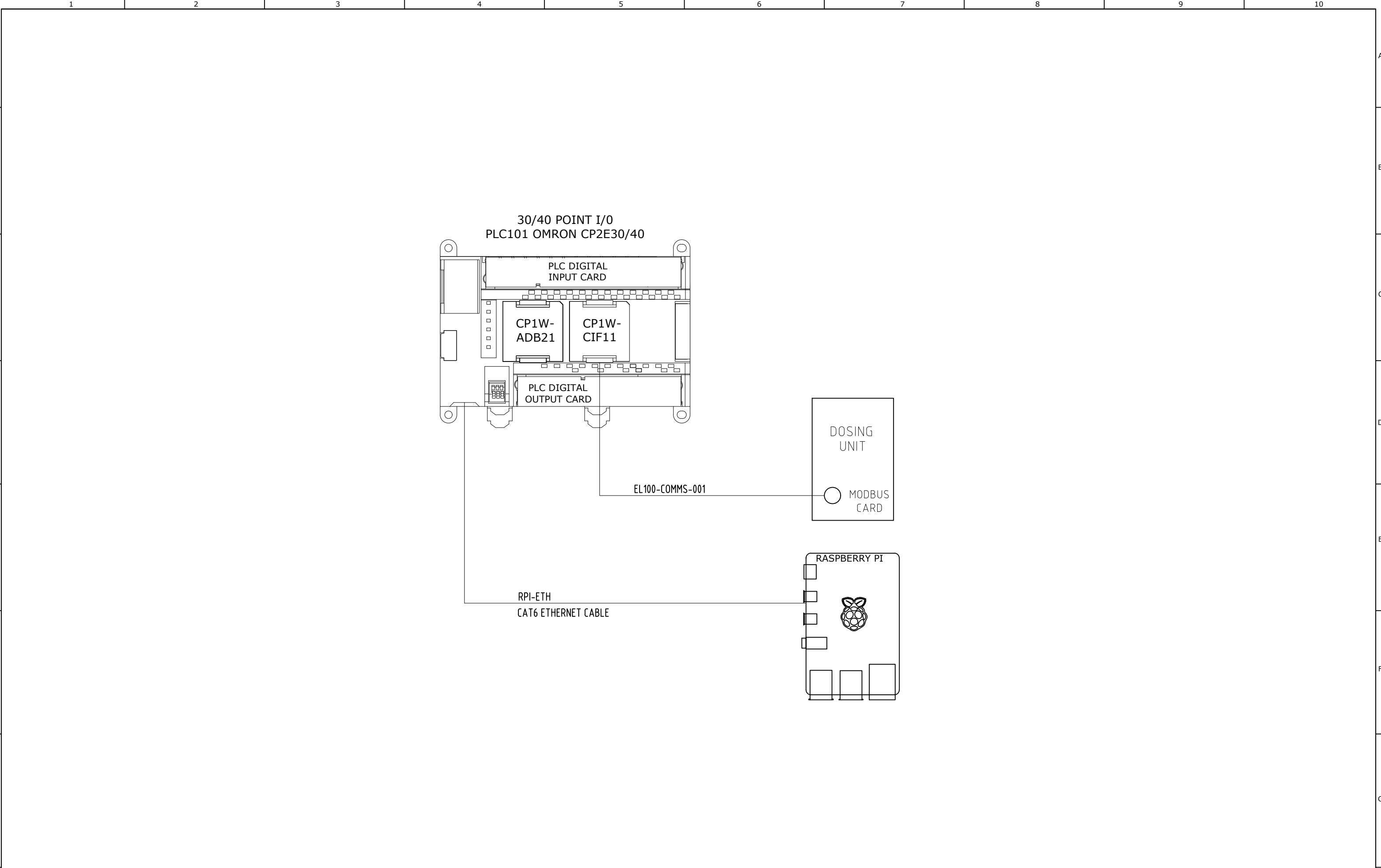
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A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23		DRAWN	P. ENRIQUEZ	26/07/23	PE		PROJECT:	07 OF 14
0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23		CHECKED	S. SHEARD	15/08/23	SS		TITLE:	SCALE:
							APPROVED	A. WINTER	15/08/23	AW		EL-25 ELECTRICAL SCHEMATICS PLC INPUTS 2	NTS
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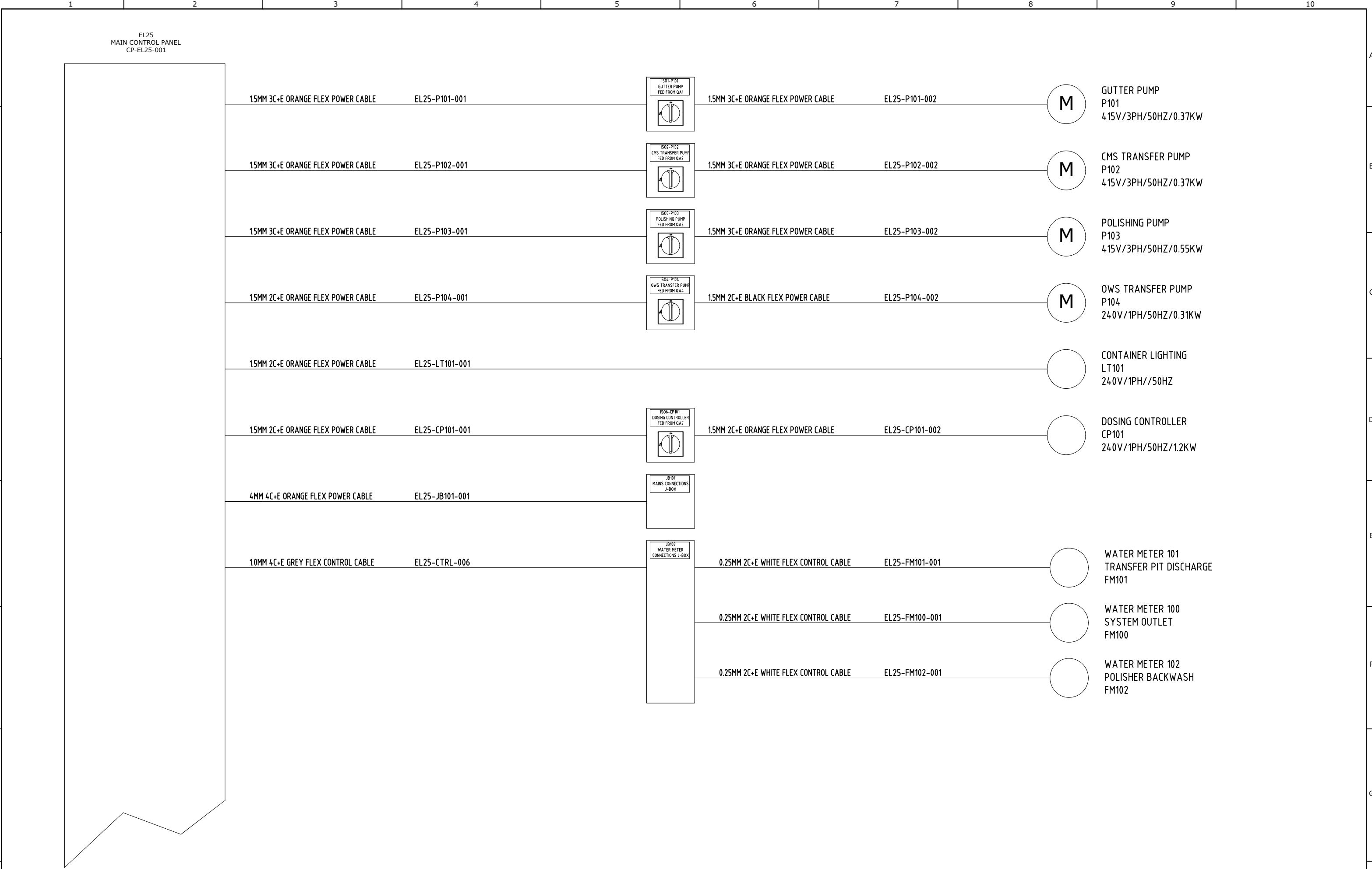
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0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23		DRAWN	P. ENRIQUEZ	26/07/23	PE		TITLE: EL-25 ELECTRICAL SCHEMATICS PLC OUTPUTS 1	SCALE: NTS
							CHECKED	S. SHEARD	15/08/23	SS			REV.: 0
							APPROVED	A. WINTER	15/08/23	AW		CLIENT DRG NO.: -	
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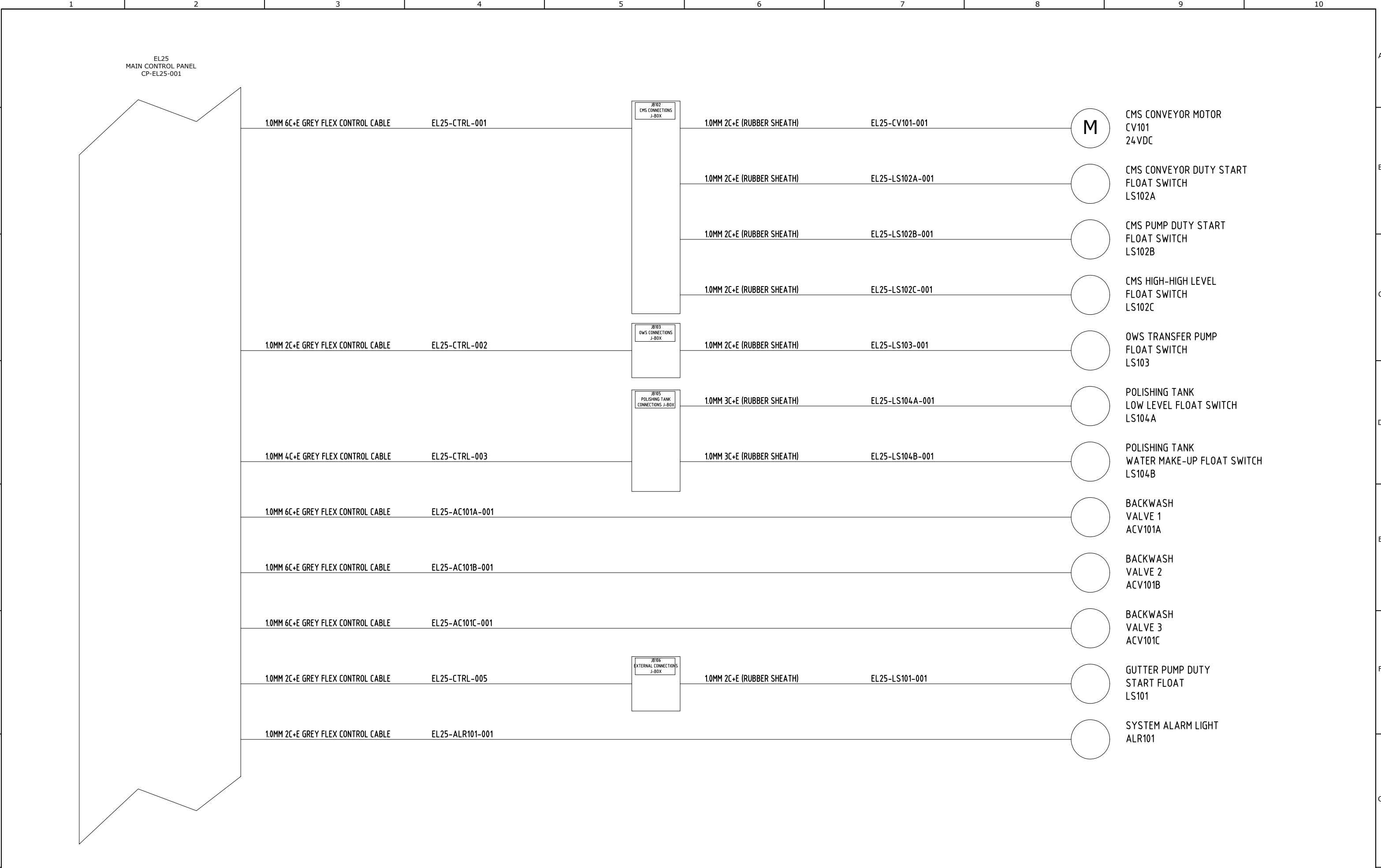
REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	REFERENCE DRAWINGS				 enviroconcepts Enviroconcepts International 23 MOTORWAY CIRCUIT, ORMEAU QLD 4208 TEL: (07) 5535 9000 www.enviroconcept.com.au		CLIENT:					SHEET NO.:
A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23	DESIGNED	D. JEANES	21/03/23	DJ			PROJECT:					EL-25
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						CHECKED	S. SHEARD	15/08/23	SS					NTS			
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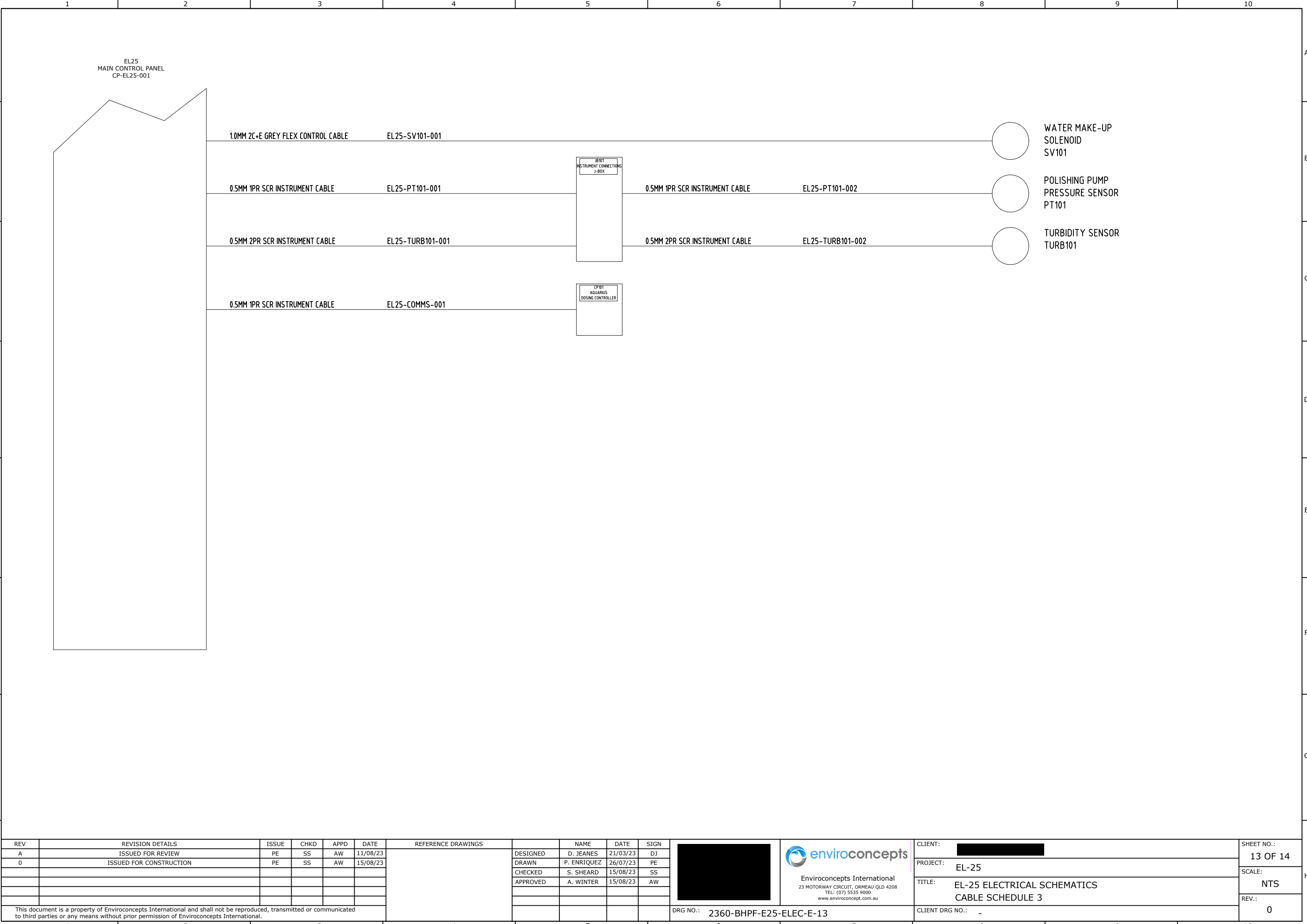
REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	REFERENCE DRAWINGS					 Enviroconcepts International 23 MOTORWAY CIRCUIT, ORMEAU QLD 4208 TEL: (07) 5535 9000 www.enviroconcept.com.au	CLIENT:	SHEET NO.: 10 OF 14
A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23	DESIGNED	D. JEANES	21/03/23	DJ			PROJECT:	
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						CHECKED	S. SHEARD	15/08/23	SS			EL-25 ELECTRICAL SCHEMATICS SERIAL CONNECTIONS	REV.:
						APPROVED	A. WINTER	15/08/23	AW				0
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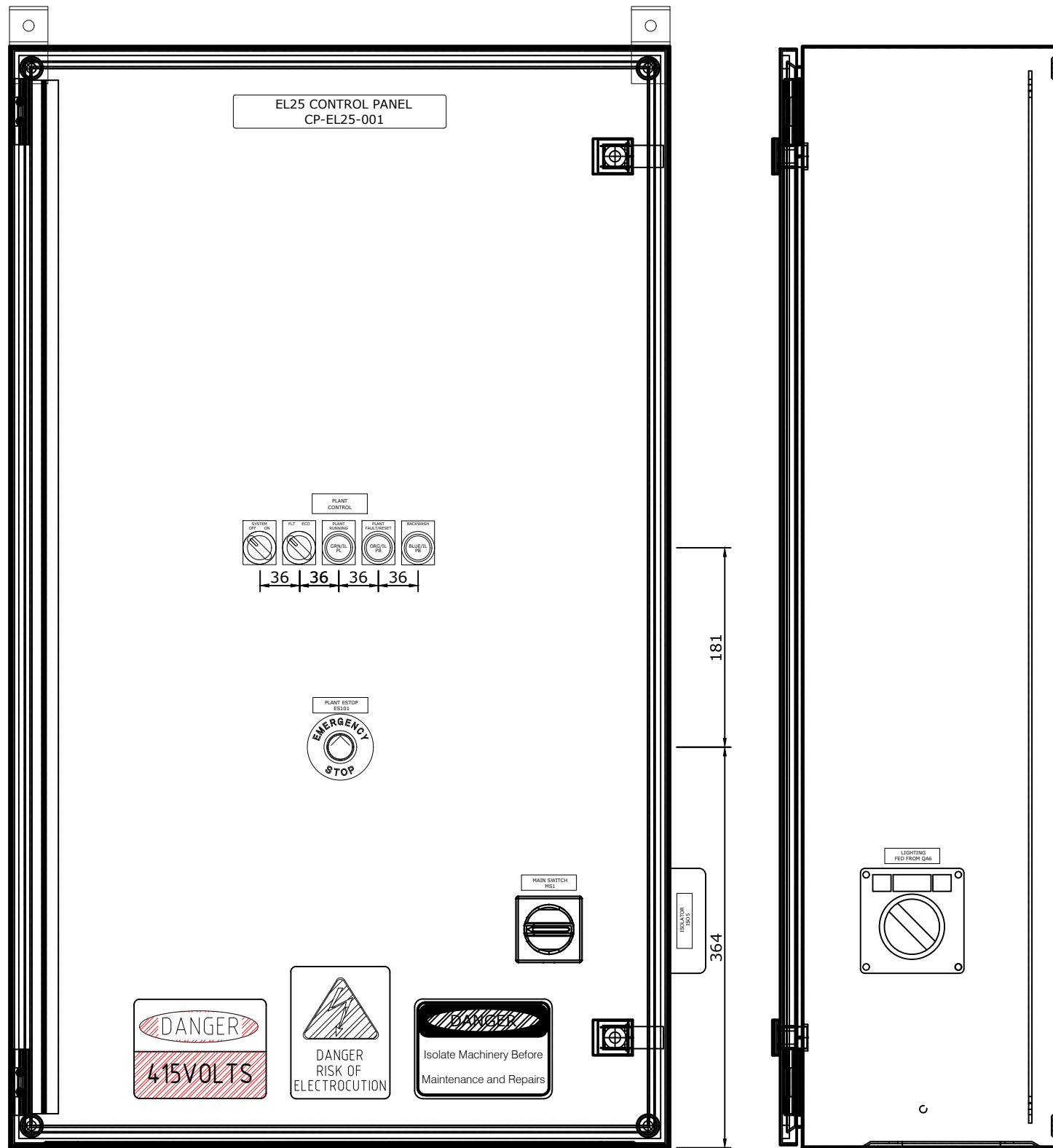
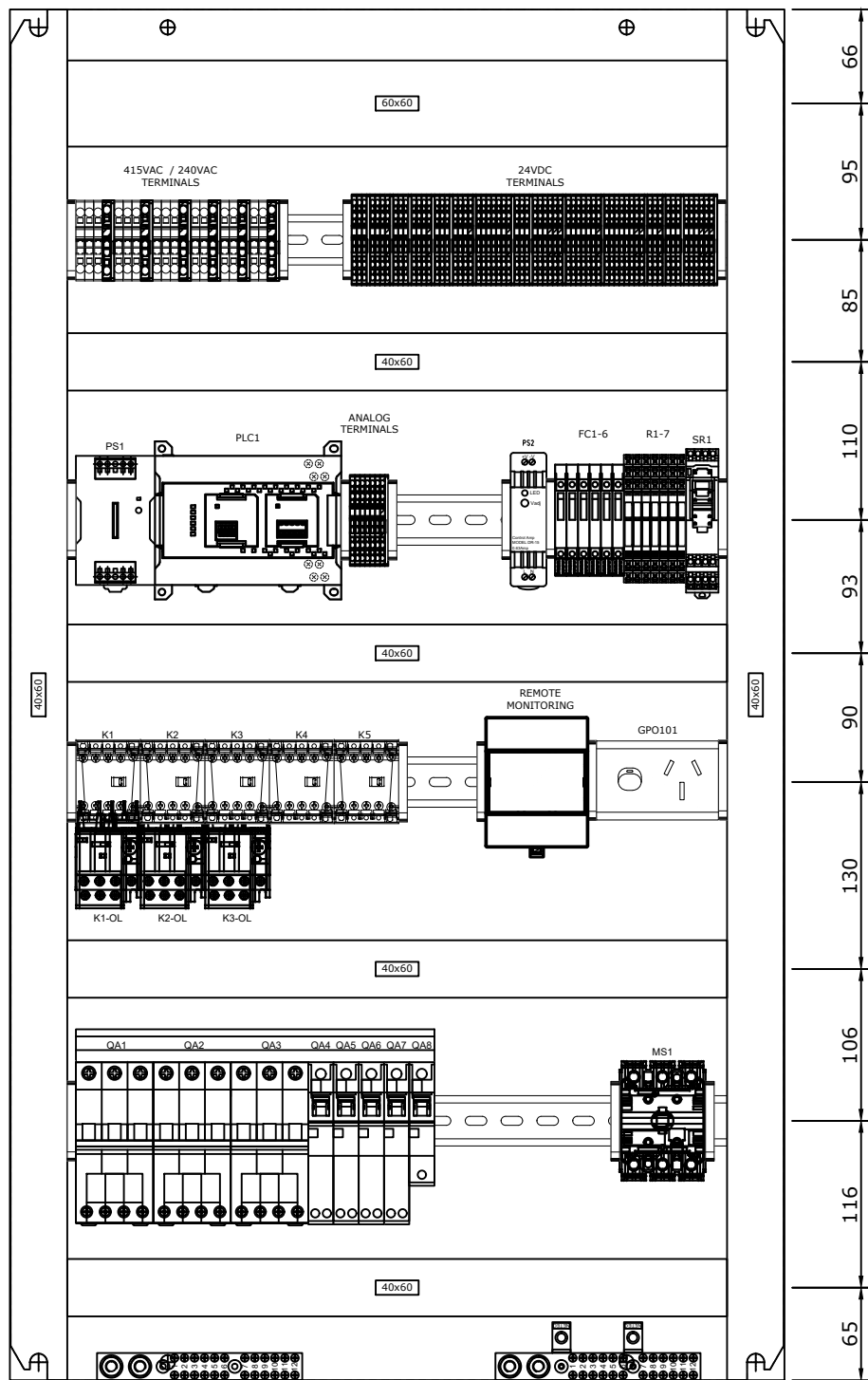


REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	REFERENCE DRAWINGS		NAME	DATE	SIGN		CLIENT:	SHEET NO.:
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							APPROVED	A. WINTER	15/08/23	AW		CLIENT DRG NO.: -	
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A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23		DRAWN	P. ENRIQUEZ	26/07/23	PE			PROJECT:	EL-25	SCALE:
0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23		CHECKED	S. SHEARD	15/08/23	SS			TITLE:	EL-25 ELECTRICAL SCHEMATICS CABLE SCHEDULE 2	NTS
							APPROVED	A. WINTER	15/08/23	AW			CLIENT DRG NO.:	-	REV.: 0
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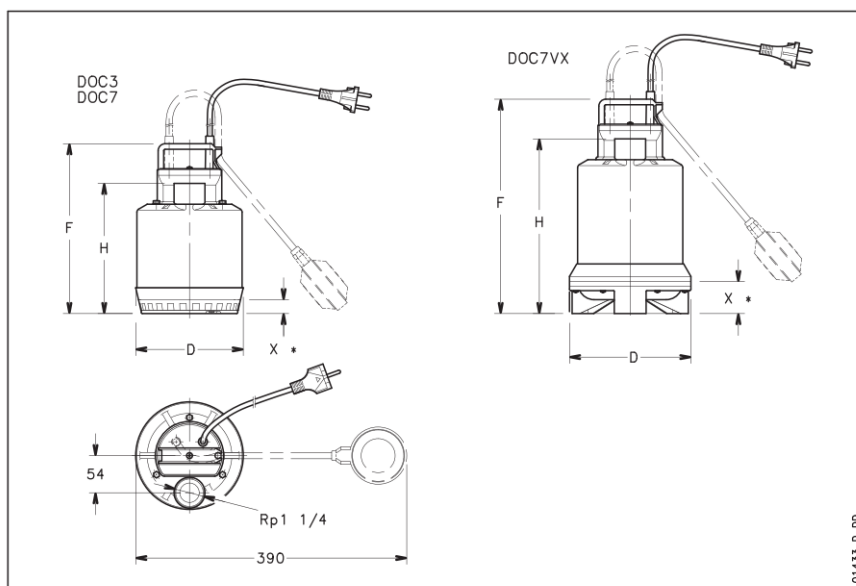
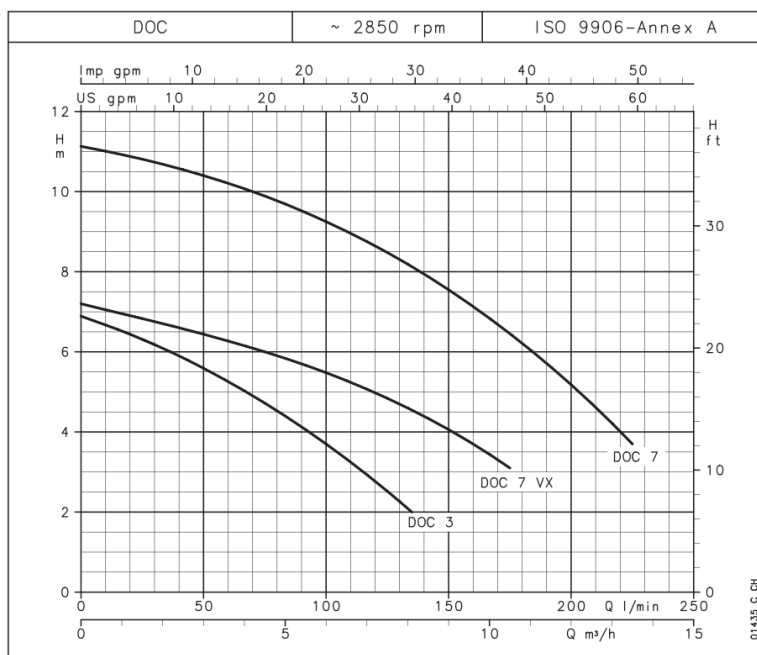


REV	REVISION DETAILS	ISSUE	CHKD	APPD	DATE	REFERENCE DRAWINGS	DESIGNED	NAME	DATE	SIGN	CLIENT	SHEET NO.:
A	ISSUED FOR REVIEW	PE	SS	AW	11/08/23		DRAWN	P. ENRIQUEZ	26/07/23	PE	PROJECT: EL-25	14 OF 14
0	ISSUED FOR CONSTRUCTION	PE	SS	AW	15/08/23		CHECKED	S. SHEARD	15/08/23	SS	TITLE: EL-25 ELECTRICAL SCHEMATICS CONTROL PANEL GENERAL ARRANGEMENT	SCALE: NTS
							APPROVED	A. WINTER	15/08/23	AW	CLIENT DRG NO.: -	REV.: 0
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PUMP DATA SHEET

Transfer Pit Pump - DOC 3 & DOC 7

Description	Value
General Information:	
Product Name:	DOC 3, DOC 7
Net Weight:	4kg / 6kg
Hydraulic Performance:	
Rated Power – DOC 3	0,25 kW / 0.33 HP
Rated Power – DOC 7	0.55 kW / 0.75 HP
Electrical Data – Single Phase	
Input Power – DOC 3	0,31 kW
Input Power – DOC 7	0,78 kW
Input Current – DOC 3	1,43 A
Input Current – DOC 7	3,47 A
Capacitor – DOC 3	6,3
Capacitor – DOC 7	16
Electrical Data – Three Phase (DOC 7 only)	
Input Power	0,79 kW
Input Current 220-240V	2,82 A
Input Current 380-415V	1,63 A
Dimensions:	
F – DOC 3	245
H – DOC 3	188
D – DOC 3	155
X – DOC 3	20
F – DOC 7	285
H – DOC 7	228
D – DOC 7	115
X – DOC 7	20

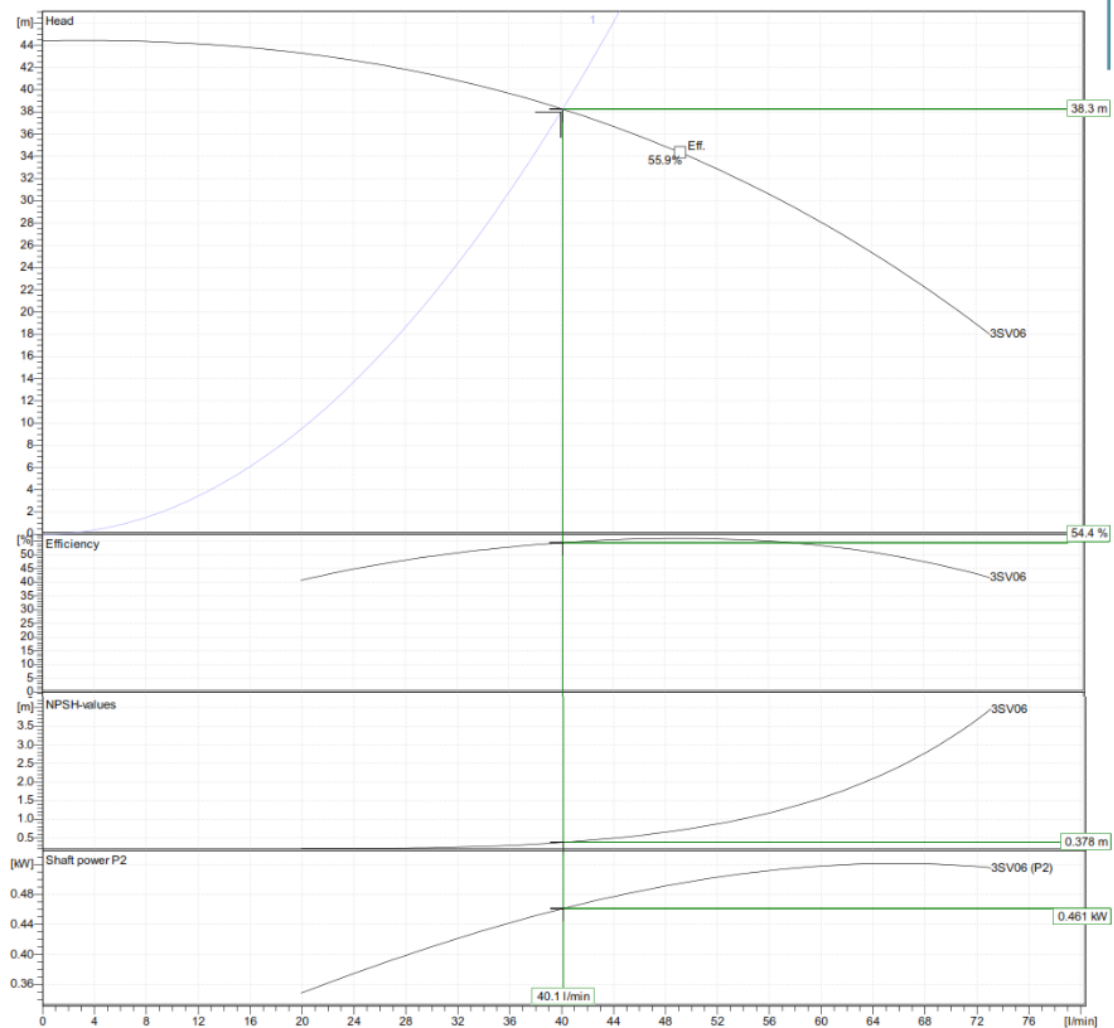


PUMP DATA SHEET

Polishing Filter Pump -3SV6

Description	Value
General Information:	
Product Name:	3SV06F005M
Operating Data Specs:	
Flow:	40 LPM
Head:	38 m
Static Head:	0 m
Hydraulic Data (duty point):	
Flow:	40.1 LPM
Head:	38.3 m
MEI $\geq$ 0.7	
Impeller Design:	
Impeller R:	79mm
Frequency:	50 Hz
Speed:	2900 1/min





PUMP SPECIFICATIONS

MODEL:	DT25
PORT SIZE:	1" (25NB) BSPF
MAX FLOW:	23 L/M
MAX SUCTION LIFT:	6 M
MAX DISCH. HEAD:	6 M
MAX SOLID SIZE:	15mm SPHERE

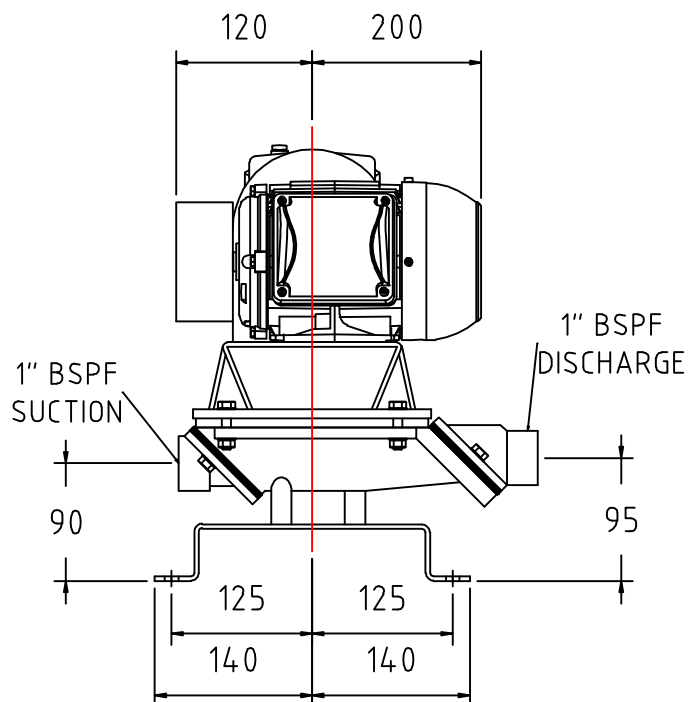
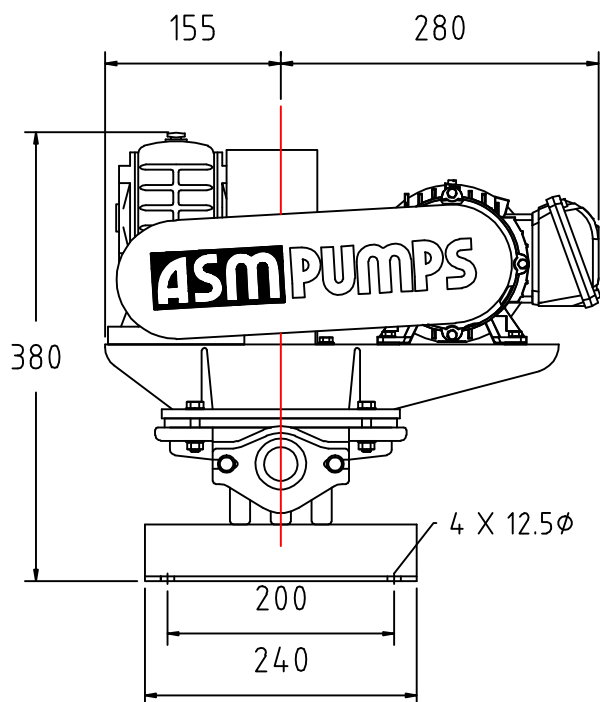
MOTOR SPECIFICATIONS

KW:	.37
RPM:	1480
VOLTAGE:	415
FULL LOAD CURRENT:	1 A
IP RATING:	IP66



MATERIALS OF CONSTRUCTION

DIAPHRAGM:	NITRILE	OPTIONS:	EPDM, VITON & TEFLON INTERFACE
VALVES:	NITRILE	OPTIONS:	EPDM, VITON & POLYURETHANE
CASTINGS:	SG IRON	OPTIONS:	BRONZE, STAINLESS STEELS



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