

Global Certification Pty Ltd Operating Manual **Jimboomba Testing Site**

35 Matt Court Jimboomba Qld.



The site is fully fenced with locked gates each day. It also has CCTV coverage

Site Area Global Certification.



Global Certification Pty Ltd has agreed to utilise the Logan City Council Jimboomba Sewage Treatment Plant for testing against the AS1546.3:2017 standard. We are able to test 15 units will at one time.

Apart from the requirements required by the AS 1546.3:2017 standard and SA MP 101:2017 there are a number of onsite requirements to cover Global Certification's and Council's OHS and Operational Requirements and testing conditions.

Site Key features:

- Individual power supplies with cut out switches and electricity meters.
- Influent quality checked that it meets the requirements of the standard
- Individual influent feed lines via individual PLC controlled Mono pumps and Flowmeters
- 24 hour composite sampling into a refrigerated trailer for temperature control and full security
- All mono pumps, flow meters and PLC's are identical allowing rapid changeover if any faults occur eliminating testing interruption for extended periods
- Ability to complete R&D and also Compliance testing at the site under supervised conditions.
- The site will continue to operate for both R&D and compliance testing as part of our commitment to the waste water treatment industry.
- Influent meets the requirements of the Standard
- There are a number of tanks and systems installed with a bund preventing spills from leaving the site. The system is fully contained within the Sewage plant with security Fencing, CCTV cameras, PLC control and a receival from the inflow of the plant and back to their plant so that all treated effluent from our operations still goes via their plant to ensure no untreated influent leaves the site.
- In addition, we have set up a number of failsafe devices so that any high levels are monitored and infeed stopped, overflows back to recirculating tanks and spillages also to a drain back to the recirculating tank which also has high level alarms and a second pump should one fail.
- We have limited access to the site so that all visitors are required to be in the presence of Global Certification Staff. The Council have also introduced a new induction process so all contractors will be placed through a new induction process to continue to have access to the site under B Smith & Co Pty Ltd supervision
- The plant is under 24 hour security surveillance to prevent any vandalism.
- Safety is also a major consideration. Safety Hand rails have been installed to prevent falls from heights.
- Two safety moveable walk through platforms have been installed at the site to allow access to the area set aside for in ground tanks and above ground tanks of two heights 1.8 meters and 2.4 meters high.
- We have installed a portable Bathroom to have access to a shower and toilets on a 24 Hour basis
- The Council have upgraded their security system with a gate installed prior to the Emergency Services Building with Special password access.
- We have installed mechanical water meters on the outlets from each system to check the flow results obtained from the electronic flow meters.
- To ensure effluent is <6hours old since entry into the treatment system we have installed a return line with PLC control to change the flow through the test site when a variable number of systems are in place.

Influent Reveal System:

Jimboomba Sewage plant receives approximately 200,000 litres of Influent per day from a number of pump stations. These deliver influent when the pump stations reach a set level. Hence, influent can be received at any time. This required that we have a system capable of receiving influent when it is available and storing it until required by the testing system. The influent is as that of Fresh raw wastewater at a house meant locating an STP that was connected to a watertight pressure sewer system (not a leaky Gravity Sewer System) that services a primarily residential area. No water is allowed to infiltrate into pressure sewer pipes. The Jimboomba STP was identified as one of the sites that fulfilled all of the requirements for a test site due to its pressure sewer network and mainly residential catchment.



A manual shut off valve and an automatic valve have been placed in the delivery line to the tank to ensure that when the level in the in-ground reveal tank is low the automatic valve opens using an adjustable float switch and shuts off when the desired level is reached. This maintains the influent to <6 hours old. This has been demonstrated as effective by the lack of Nitrates and nitrites in the influent when tested.



The collection tank has an emergency overflow which delivers the influent into the front of the sewage plant if necessary so no environmental damaging overflows occur.



Outlet from the tank and emergency overflow pipe and safety hand rails installed where above ground on lower slope. The grassed area was re-established by topsoil and green winter couch.

Influent receival tank

A further complication is that the screening process at the plant is 6mm in diameter which is less than the standard requirement. Thus, the take off point is prior to any screening. To ensure that the transfer pump is not fouled by rags etc. a 20mm screen in the form of a basket has been placed into the inlet of the receival tank to catch any large items. To date this has worked very well until the decision by the courts to not prosecute the disposable wipe manufacturers which has resulted in a greater need for checking the infeed system each day. Consideration is being given to install a 10mm rotating screen to replace the basket and a ball valve to replace the butterfly valve to overcome this problem.



The tank has a conical base with a variable speed agitator to ensure that all solids are maintained in an homogenous mixture within the collection tank.



The conical base ensures that the one pump picks up any solids when transferring the influent. The pump is controlled by the float switch in the feed tank with the delivery operating at 120 litres per minute or 7,200 litres per hour which is the effective capacity of the feed tank..



Davey sump pumps installed rated at 120 litres per minute



Specially designed conical base of the in-ground tank showing the area where the pump has been placed.



Note:- Concrete was poured around the tank with reinforcing bars to ensure the tank is secured in the ground and then back filled with crusher dust.

Influent Transfer System:

As stated above transfer to the infeed tank at the test site occurs from a pump placed in the base of the conical tank. This delivers influent to a conical above ground poly tank located near the control room via a 50mm poly pipeline. The transfer pump can be run either manually or automatically using power supplied from the switch board in the control room. Control of the pump is achieved using a float valve which shuts off the pump when the desired level is achieved and starts the pump when the level is low. The tank has a recirculating pump which ensures continual movement to a dedicated mono pump feeding each treatment system and maintains the influent in a homogenous state.



The feed tank has an emergency overflow fitted which sends any overflow to the drain which feeds to the return tank where it is pumped back to the sewage plant system so that it can be processed.

Influent Delivery System:

The above ground conical tank ensures that influent will always be above the mono pump and flow height to ensure that air is eliminated from the system. The delivery is via the base of the tank and is recirculated past each mono pump take off point and then returned to the tank via a dedicated mono pump which delivers the influent back to the storage delivery tank in a circular motion to ensure mixing is complete.



The flow can also be diverted to a 300 litre tank for delivery of the 200 litres in <3minutes when required. This is achieved by a cam lock fitting and bypasses the normal flow meter to ensure that the full volumes are always delivered.

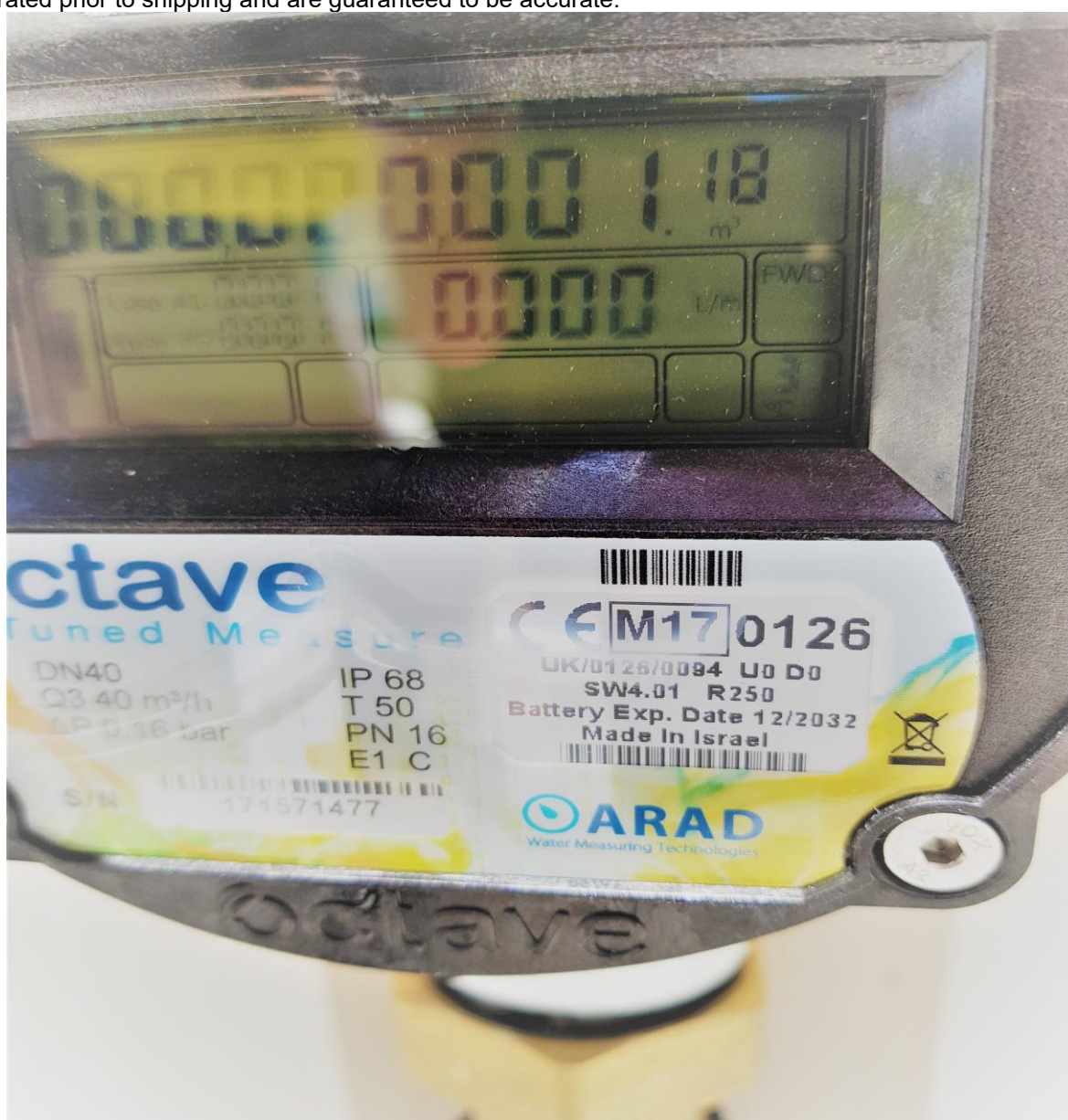


Mono pumps

There is the capability for 15 mono pumps delivering influent to 15 different systems. The pumps deliver approximately 30 litres per minute which allows for all systems to be tested. The lower flow rates per minute of 10 litres and 20 litres are achieved by pulsing the pump using the PLC turning it on for 20 seconds and off for 40 seconds per minute for 10 litres and turning on for 40 seconds and off for 20 seconds per minute for 20 litres. The mono pumps and delivery system can be isolated by turning off the manual valve and turning the power off to the mono pump. This allows for no flow situations which is part of the standards requirement. As stated earlier each mono pump is identical allowing rapid replacement if breakdowns occur.

Flow Meters:

The flow metres are placed directly after the mono pumps and are set to deliver the precise volumes each period by counting the litres of flow in 1 litres increments. The volumes to be delivered in each hour is controlled by the PLC based on the flow volumes e.g for a 2000 litres flow system at 6am to 7am 200 litres are delivered. Note: The PLC stops the mono pump when the volume is achieved. i.e. If the volume to be delivered in a certain hour is 150 litres and the count has achieved 149 litres with one cycle of 10 litres left to deliver, The pump will be stopped after only 1 litre delivered 150 in total. The flow meters have all be calibrated prior to shipping and are guaranteed to be accurate.

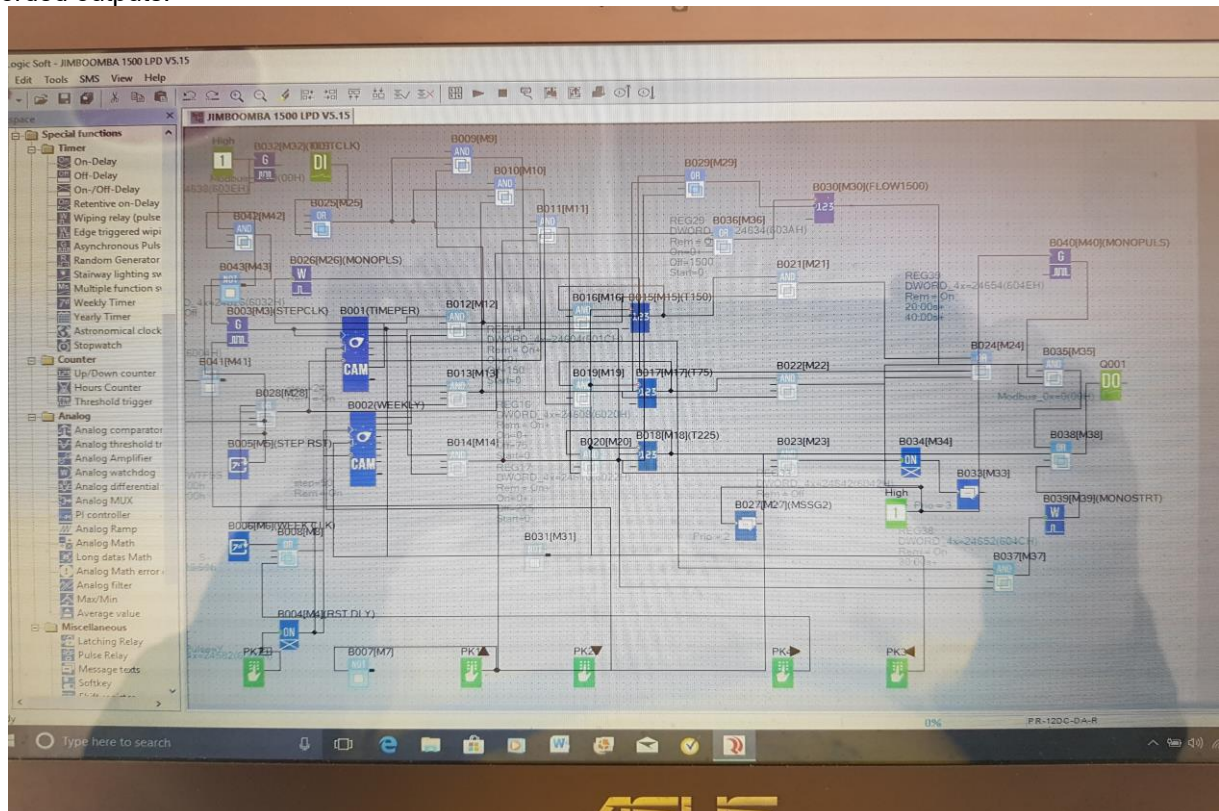


PLC Control:

PLC control is achieved through an individual PLC for each testing unit. There are 15 active PLC's which have been programmed to deliver the correct volumes of influent to the 1546.3:2017 schedule as found in Tables A2 to A4 of the standard.



The PLC controls the entire influent delivery process to the STS. It is programmed via Riev/Tech xLogic Soft software. This software allows specific programming to control the functioning of the devices used based on recorded outputs.



The software allows programming in the following special functions:-

Timer-

On-delay, off-delay, on-/off-delay, retentive-on-delay, wiping relay (pulse output), edge triggered wiping relay, Asynchronous pulse generator, Random generator, stairway lighting switch, Multiple function switch, weekly timer, yearly timer, Astronomical Clock, stopwatch

Counter-

Up/down counter, Hours counter, Threshold trigger.

Analog-

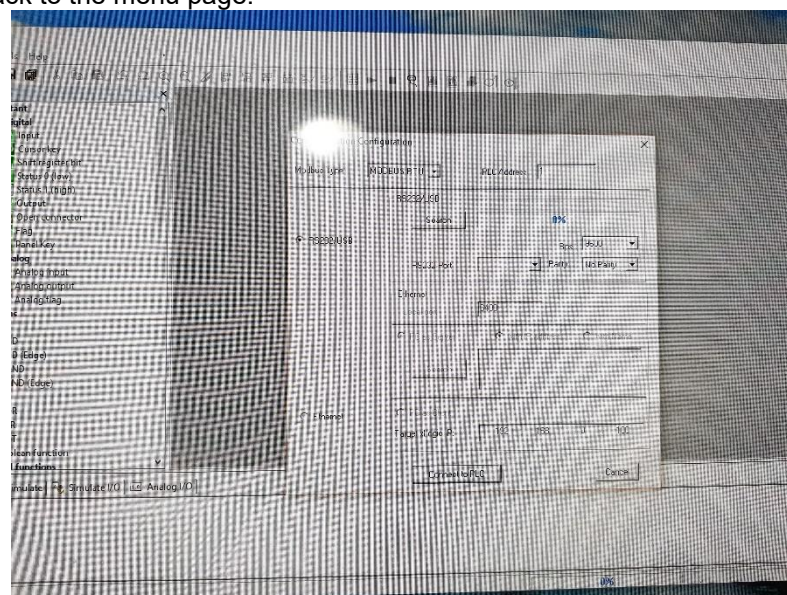
Analog comparator, Analog threshold trigger, Analog Amplifier, Analog watchdog, Analog differential trigger, Analog MUX, PL controller, Analog Ramp, Analog Math, Long datas Math, Analog Math error detection, Analog filter, Max/Min, Average value.

Miscellaneous-

Latching relay, Pulse Relay, Message texts, softkey, Shift register, Pwm, Modbus Read, Modbus Write, Modbus Read Write, Data Latching Relay, Long DATA Latching Relay, Memory write, Memory Read, Word to Bit, Bit to word, Device Reset, Comport Status and RH MATH.

To transfer the program to a PLC.

Connect the PC to the PLC via the USB cable supplied by Riev/Tech. When the specific program desired is open Go to Tools, open configuration and the Communication configuration will open press connect to PLC, the page will diver back to the menu page.



Then open tools again and open Transfer and PC to PLC. The program will give a warning that the PLC will be stopped to accept the program accept this. The program will then load the program to the PLC showing the percentage loaded.

If the PLC is more remote from the PC, a special device shown below can be used for the transfer.



When inserted. It will flash both lights for a short period. Once these lights stop flashing, you push the desired function on the device such as upload until the light turns on. Release the button and the program will either upload or down load. The light will turn off when complete. When downloading, the PLC will indicate it is

downloading and once complete it will restart with the title page.

PLC control-

To adjust the PLC there is a series of keys on the PLC as shown below. The top key moves through the program in a forward direction I.E. step 1 to step 2. The bottom key moves the program in the opposite direction. i.e. step 2 to step 1. The right key moves the week forward i.e. week 1 to week 2 and the left key moves the weeks backward.

The red esc key opens the menu where the PLC functions will appear. The arrows operate to move the to the particular function and the green OK key selects that function and opens it where adjustments can be made. To return to the function menu use the red esc key.



This also shows the 1000 litre emergency testing recorded on the PLC for Krystel Kloor STS.

Additional Infeed through Cam lock Coupling:

Table A6 and clauses A.5.9 of the standard calls for a number of special flows to be placed into the STS during various weeks. Two 300 litre conical tanks have been provided for these tests which supply the STS via a cam lock fitting using a pump capable of delivering 100 litres per minute. One tank has been dedicated to supply a measured volume of influent taken from the storage tank and the other tank is used for fresh water injection and chlorinated water injection on the designated days.



300 litre conical feed tanks, centrifugal pump capable of 100 litres per minute and flexible pipe line with a cam lock fitting.



In line cam lock fitting and valve for injection of the additional influent as desired into the line feeding the STS.

Electrical Circuits and Meters:

Each system has its own circuit and power meter so that the average power consumption per 1000 litres can be calculated and so that any other system failure will not affect the operation of the STS. The infeed system is also on different circuits. All power for the entire operation of the testing site including the initial infeed tank is supplied from the site control room. This power is supplied from the adjacent area where sludge is dewatered. The overall power supply is also recorded and reported to the Council each week.



STS Pump out System:

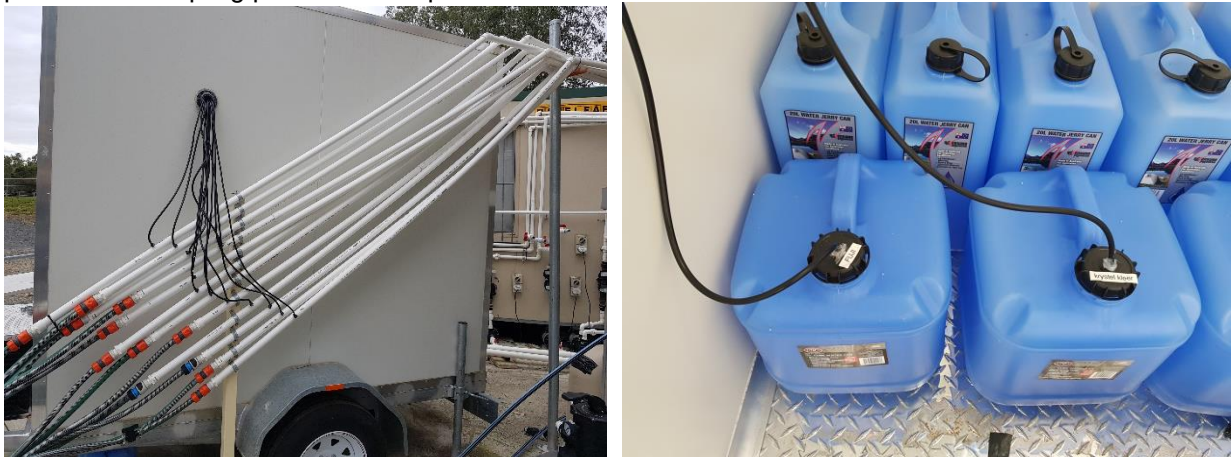
The STS pump out chamber is connected to a 25mm pipeline. This is fed back to the return tank for transfer to the Sewage Plant.

Effluent return to Council Sewage Plant

The effluent from the STS is pumped via a sampling point and a slight back pressure valve to ensure a sample is collected when desired. It enters the return tank via the 100mm pipe as shown below and a pump operating on a float valve pumps the liquid collected back to the Sewage plant.

24hour Composite Sampling:

The 24 hour composite sample is achieved by taking a small flow from every pump out that occurs in the 24 hour period, To achieve this, a small valve has been inserted into the line and is in the upright position so any liquid drains out when there is no flow. A valve has been fitted after the sampling point to obtain a slight back pressure so that liquid is forced up the sampling tube. The sample is collected in either 15 or 20 litre bottles in the refrigerated trailer so that the sample is cooled immediately. Note the effluent return lines are insulated prior to the sampling point. All sample bottles are marked.



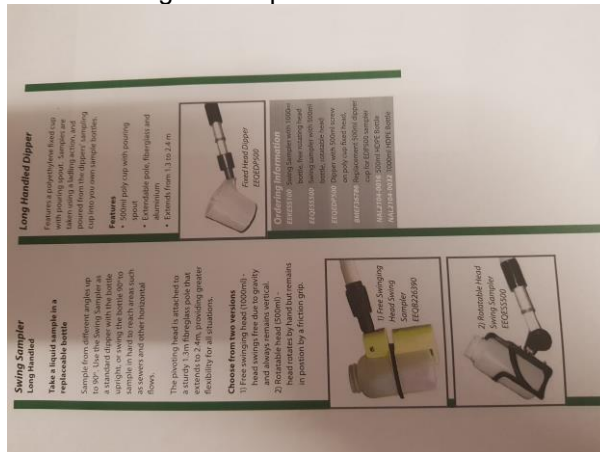
24 hour Composite sampler on influent system which is ice cooled



Grab Sampling including FAC Sampling and Testing:

Ensure that all equipment used for sampling is sterile prior to being used to sample the effluent. This can be achieved by placing an amount of methylated spirits into the sampling equipment and allowing it to fully evaporate or direct sampling into a clean unused bottle that has been pre-labelled and placing the lid on the bottle before removing it from the sampling holder. The second is the easiest method and swing sample bottle holders as well as a long handled dippers are available for use. Once collected it shall be placed into the refrigerated trailer for immediate cooling in the case of the e Coli test sample and the FAC sample taken into the testing area and tested immediately. There are a number of sampling methods required by the Standard. FAC is required to be taken directly after the chlorine is administered to the effluent. Most units have set up a small weir to allow this to occur.

It is important to note that the grab sample for the FAC cannot also be used for the E coli sample as the e coli sample must be taken from the pump out chamber as the chlorine must be given time to kill the bacteria etc present. This is not the case with the FAC grab sample as there is no time for the kill to take place.



Transport of Samples to NATA laboratory:

A chain of custody form must be completed for all deliveries to a NATA laboratory. The NATA laboratory must be accredited to test the various tests to be conducted. A list of pre-accepted NATA laboratories has been completed. Wherever possible The Logan City Council Testing Laboratory located at Loganholme should be used. If they have insufficient capacity to conduct the testing at the time required ALS environmental at Shand Street Stafford is the next choice. Bottles are to be obtained from ALS for the testing which is done by completing the bottle order for and giving at least 2 working days notice of picking up the bottles.

The account for ALS is in the name of B SMITH & CO PTY LTD so the paperwork and bottle labelling must reflect this. IE it is therefore important to know if the Loganholme laboratory has the capacity to complete the testing prior to labelling the sample bottles and completing the paper work.

The samples must be delivered to the laboratory at <5°C. This can be achieved by cooling the samples immediately in the refrigerated trailer on site and using ICE bricks in eskies. Ice can also be used but is not the recommended method. All samples must be delivered to the laboratory within 24 hours of collection.

SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES pH, Sur's Codes should be listed to attract better price			Additional information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES		
1	BSC1	28/06/2016	Water		1		low contaminants
2	BSC2	28/06/2016	Water		2	1 1 1	low contaminants
3	BSC3	28/06/2016	Water		2	1 1 1	low contaminants
4	BSC4	28/06/2016	Water		2	1 1 1	low contaminants

MICRO LAB

Emergency Storage Testing using Observation and Turbidity:

The first test to be completed following installation and measurement and component checking is the emergency storage capacity. Note at this stage the STS remains turned off turned **off**. This is tested to the standard requirement by checking that the transfers are initially plugged with removable plugs, if they are under the normal operating level. This allows the fresh water to be placed in all chambers except the first primary chamber which is filled with influent from the sewage treatment works. Once the unit is filled to the correct level wait one hour to allow any dust or other particles to settle out as we have found that the initial turbidity may be affected by concrete dust and fibreglass dust. A sample is now taken from the pump out chamber for turbidity and a visual check is taken with photos.

The amount of influent which was pumped into the primary chamber is now recorded which is a further check on the stated capacities of the primary chambers of the various STS which is recorded by the PLC via the flow meter. This can be read from the flow meter and the PLC and a photo taken.

Once the turbidity is checked 1000 litres in the case of units ≤ 2000 litres per day. For larger capacity units the storage capacity shall be 50% of the daily flow. i.e. 3000 litres per day = 1500 litres.

The correct amount of influent is now added to the STS via the flow meter with the amount counted in by the flow meter to 1 litre accuracy. A photo is then taken of the PLC which shows the number of litres transferred to the system. Once complete, the unit is checked for any overtopping and direct transfer of influent across the chambers. After a further 12 hours, a sample is taken from the pump out chamber and tested for turbidity and the result recorded. The turbidity must be either \leq the initial reading and the observations should show no overtopping of any chambers.

Once satisfied that the test has been satisfactorily completed, turn on the system and allow the unit to pump out the liquid until it reaches the normal operational level. During this phase, the sampling mechanism should be checked to ensure that the 24hour composite sampling will work correctly.

Noise Meter Testing:

The noise generated by the plant is measured at a quiet time at a distance of 1 metre from the nearest item producing noise. This is generally the blower. Which is housed in the control box.

There is a noise meter on site with a set noise level device for calibration. The unit must first be calibrated and then the noise level taken 1 metre away from the unit. In addition, the Companies supplying any moving equipment should have a certificate of compliance that the noise level is ≤ 40 dB(A) L_{eq} .



Dissolved Oxygen Testing and Aeration Chamber Temperature:

The dissolved oxygen level is measured each sampling day when grab samples are being taken. The particular meter being used also measures the temperature of the aeration chamber. In addition a temperature recording device has been installed in the aeration chamber for continual monitoring of the aeration chamber temperature. This is down loaded onto the computer at regular intervals to ensure recording continues. Please note that while downloading the data the device should not be turned off. The date of down load and time shall be recorded to take account of any temperature variations due to the removal of the device, cleaning and recording.



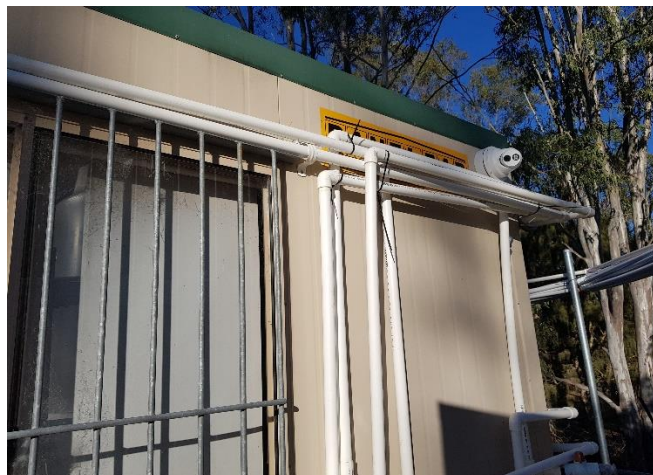
Weather Station Measurements and Recording:

A weather station has been installed on site which records temperatures, humidity, rainfall and barometric pressure and wind. The measurements are recorded on to a monitoring station which is downloaded onto the computer. A graph is generated to capture the information necessary.



CCTV Recording:

Currently, 9 cameras are fitted. The photo below shows the camera fitted to the Control room. These cameras record for a minute when the sensors pick up movement. The vision is recorded. If movement is found, a message sent to the mobile phone The vision can be viewed remotely at any time by using the App.



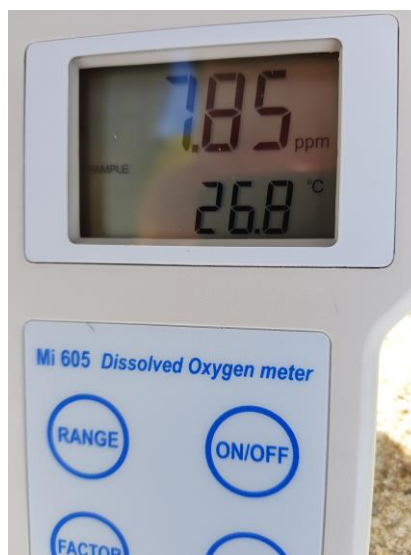
Placing STS In-ground using Sand inside Concrete Blocks:



Where tanks are installed in ground on all occasions, the standard requires that they be installed in ground at the testing facility. This is achieved by constructing an area which is 2.4 metres high above ground with concrete retaining walls to allow the STS to be installed to the lids using sand. There are 8 potential positions available within this area. It is however, possible to install above ground tanks in this area if insufficient numbers of STS 's wish to be installed in ground. To ensure that the area is well drained 10mm drainage rock has been placed on the ground where the final blocks will also be laid this will ensure that any water from rainfall will escape from the sand around the system. You need to calculate the total area, the area taken up by the STS and subtract them to obtain the volume of sand needed to complete the task.

Recording of DATA:

Data is recorded on xl spreadsheets for all activities relating to the test units. Data relating to temperature measurements are recorded in the software and reported as graphs. Where testing equipment is used on site with a read out on the equipment a photograph is taken of the readout to demonstrate the reading. This is filed in the STS file.



Reporting results:

Results are recorded as per AS1546.3:2017 A5.13 and on our report. The results will also be available on our dedicated web site to enable Clients to see the progress of the testing. The test records shall be retained for 30 years.

On site requirements

All visitors must sign in at least on the visitor's book in the onsite office. All visitors must be briefed on where and what they can do on site. No visitors are allowed near the Councils treatment equipment. The toilet block is only available while Council staff are on site. This is usually between the hours of 7am to 1.30pm Monday to Friday. Contractors who will be onsite for any length of time must sign in at the Council treatment site office and must be inducted on to the site. Note:- Steel capped boots must be worn High vis clothing and long trousers. Sunscreen must be worn and either a hard hat or other hat depending upon the area. I.E under the tank a hard hat must be worn.

All tanks must have guard rails fitted if they are over 1.5metres high above the ground. This can be done at the plant by Global Staff if necessary.

Tanks to be placed in ground must be placed in the concrete block area and concrete blocks placed to enclose the tanks which are first filled with water prior to placing sand around the tanks to the lid height.

Hand rails are then to be installed around the area and the area opened up from existing in ground tanks so that only one access point is required.

Ensure plenty of water is kept on site and that the air conditioning unit is kept on full time to protect the PLC's.

Each day check for correct operation of the testing system and units being tested. Ensure the schedule of events and testing is completed for each STS to schedule and the results recorded in a work diary or on the spreadsheet.

Each week report the electricity reading to William Smith Manager of the site by email and ensure that the Plant staff and William are aware of all activities to be conducted each week by both email and verbally.

Test site operational issues

Infeed system to the feed tank.

Each day check for correct operation of the influent feed system.

If the automation fails, check whether the delivery pump is functioning, the level controllers are working and the automatic feed valve is working correctly

On occasions the valve can become blocked which necessitates using the hook kept at the infeed tank near our office which is used to remove any rope etc from the valve.

When necessary the influent may be transferred by manual means. This is achieved by turning off the power supply to the automatic valve and turning it to the open position prior to turning the power back on. The plastic valve at the effluent plant tank can then be opened and closed as is necessary. Remove the cover over the large solids capture basket to monitor the height in the collection tank until the desired influent quantity is achieved then close the valve. Open the switch board at the receival tank and operate the valve manually if the system is not functioning correctly. Then check the level in the feed tank to ensure sufficient levels are maintained. A level sensor helps monitor this process. However, it is behind by up to an hour in its remote notifications.

Gross solids Removal.

Removal of solids from the basket can be achieved by using the lifting device and removing the basket from the tank after the liquid has be drained from the basket. The solids are then removed by shovel into a garbage bag in a wheely bin for transfer to the on site bio solids disposal bin of the council.

Influent flow volumes maintaining the age under 6 hours

The system of influent holds approximately 18,000litres in total. It is essential that we calculate the volumes of influent to be used each day to ensure that influent is maintained as fresh as possible. At our maximum we have processed 45,000 litres per day with a feed rate of 2,000 litres for each pump into the Camel tank. This meant that influent was having many infeeds per day and influent well within 6 hours time frame. However, as lower numbers of units are currently running, to avoid modifications to the infeed systems, we have installed a PLC controlled monopump through and electronic flow meter. This is programmed in the same way as the testing systems and allows us to recirculate the infeed back to the Council Treatment works.

The top receival tank is also emptied at least once per week by turning off the infeed valve and pumping it down via the Camel tank allowing it to overflow to the recirculation tank back to the Council Treatment works.

Monopump monitoring, replacement and refurbishment

Nearly all mono pumps used for testing are CP25 pumps and are identical. Two are CP80 which are used for larger flow rates. All have spare parts available. This allows rapid replacement if a mono pump either fails to operate or pumps slowly. We have found that rope etc ids caught up by the seal springs and some sharp objects can cut the rubber stator. Turn the feed off, turn the power supply off drain the influent from the line using the cam lock valve. Then disconnect the mono pump and replace it with a refurbished or new mono pump. Leave the pump for either the CEO or Pump technician to refurbish it. In the last few months we have encountered some sand entering the influent system. This has caused a number of pump and flow meter issues. It appears that the sand is interfering with the sensors in the flow meters and has needed to be cleaned out on many occasions.

Rural setting with resident Kangaroos:

A number of kangaroos call the Jimboomba Waste water treatment site their home. They are pictured below. The area also has substantial other wild life which helps us consider the environment in everything we do at the testing site.



Site Security to blocked area

A security gate has been attached to the blocked entry area to prevent persons entering the testing area. This has been very effective in utilizing the previous gate to the test site that was widened.



Covid -19 restrictions

The Jimboomba test site continues to remain successfully operational through the COVID-19 pandemic, with clients achieving conformity to AS 1546.3:2017 in the 2020 year. So it is business as usual with additional entry restrictions as stated below.

In conjunction with the requirements of the Logan City Council, the site is operating as usual but with increased restrictions for visitors applying.

No one is permitted on site who have recently travelled overseas unless they have been isolating for 14 days this also now applies to anyone travelling interstate into QLD requiring a permit and the isolation period.

Site visits are now restricted to one visitor to the site at a time. So, if there is someone from a different company looking to attend the site while another is currently on site, no entry will be permitted until that person leaves the site. Hence visits on site are by appointment ONLY.

The gate remains shut, and visitors must ring to gain entry. The visitors' book has been sited adjacent to the Councils visitors book for the purposes of signing in and out, and the site office should not be used by the visitors.

There have been no instances of live COVID-19 being found in wastewater, so normal good hygiene practices continue to apply. For the safety of both Council and our staff, masks and gloves must be worn on site and surfaces are sterilised following any visitor with the exception of the STS if serviced by the technician.

General Information provided to Clients

Global Certification Pty Ltd has agreed to utilise the Logan City Council Jimboomba Sewage Treatment Plant for testing against the AS1546.3:2017 standard. The plant is located at 35 Matt Court Jimboomba Qld. We anticipate that between 10 and 15 units will be able to be tested at one time.

Apart from the requirements required by the AS 1546.3:2017 standard and SA MP 101:2017 there are a number of onsite requirements to cover Global Certification's and Council's OHS and Operational Requirements and testing conditions.

A number of these are provided below:-

- A. Safety platform and rails around the tanks to be delivered with the system to the testing site at the Clients cost if the height of the unit is 2 metres or above, a platform allowing access to lids of the unit with a handrail on the side away from the unit. This is a WHS provision for the test site. There are 10 potential testing locations for systems to be tested above ground. Note:- This is not required if the tanks are installed below ground. We have set up an area with 2.4 metre high blocks so that we can install the tanks in this area which will then be filled with sand around the tanks so that they are effectively below ground. There are 8 potential testing locations within this area.
- B. The unit will be plugged into standard single phase power supplies. The units shall be supplied with power cords (tested and tagged) able to be plugged into the power supply provided on site that has a safety switch for each system.
- C. We are using 25mm pipelines both to and from the units so a suitable connection needs to be provided to enable this connection. In addition, we need to ensure that spills are avoided. We also require an emergency overflow that we can deliver to our effluent return tank for pumping back to the Jimboomba treatment plant.
- D. The standard requires that Free Chlorine (FAC) is sampled immediately after the chlorination apparatus but before the pump out tank. Hence, the Client needs to supply access to the outlet of the chlorinator, to enable the sample to be taken and analysed if Chlorine is used as the sterilising agent.
- E. Access to the test site is restricted to the delivery personnel and persons involved with the installing and removal of the system from the site. Clients will also be permitted to visit the site at arranged times to see the progress of the testing and evaluate results with Global Certification Personnel when they are in attendance only. The site is locked and subject to CCTV monitoring. Some clients have requested that their units not be identified by other visitors In these cases we will erect temporary screening prior to the visit.
- F. The servicing of the unit can be conducted by the Company's service personnel under supervision of Global Certification staff during the test period. If required the servicing will be conducted by selected Global Certification Pty Ltd Contractors that have no interests in the outcome of any testing being conducted on site. The client is responsible for providing the operating, installation and service methods to Global Certification Pty Ltd.
- G. Laboratory testing as required shall be conducted by a ILAC MRA registered laboratory which in Australia is a NATA accredited laboratory with the relevant scope for the tests conducted.
- H. The standard requires that the entire 3 month period of winter is included in the testing period of 34 weeks. This means that the system needs to be installed and operational between 18th November and 7th April each year. The 7th April being the latest date to allow the run up time of 8 weeks to be completed prior to 1st June each year when the 34 week test cycle commences.
- I. There is an option to install the system at the test site prior to the official testing period to iron out any issues that may be found. The plant will be run using the normal influent so that you will have the opportunity to make adjustments if needed prior to testing commencing. In these instances, you will be allowed on site under supervision of Global Certification Pty Ltd personnel.
- J. Global Certification are required to advise the main regulator that the unit is onsite and being tested and to provide them of the outcome of the testing. i.e. If the unit fails during the test period, the Regulator and Client will be advised of the failure. The Client will then be permitted to make

modifications to the system if necessary onsite under the supervision of Global Certification Staff, or the system is to be removed from the site at the Clients cost. Obviously, the Regulator and Client will be advised of the passing of the systems together with a report, certificates to the standard to the level that the system attains.

- K. The Certificate issued will be a five year certificate which will only continue to be valid if and annual audit is conducted as stipulated in GC009.
- L. The data associated with the testing will be provided to the Company in electronic format which must be held and available for 30 years. Global Certification Pty Ltd will also retain the information as required under the standard.
- M. We have been advised that there may be variations to the standard required by some Governments. In these instances Global Certification shall seek accreditation to these Codes or Regulations from JAS-ANZ and test to those requirements. However, the testing will not be certified to AS1546.3:2017 unless all criteria of that standard are satisfied. For example testing at a greater rate than 5000 litres per day say 6000 would still allow a certificate to be issued against 5000litres to the AS 1546.3:2017 standard as it is in excess of the requirements. It would only be rated at 5000litres other than the state where the code or regulation is applied.
- N. The standard also permits a limited test regime for alternative disinfection methods. These are in addition to the usual standard testing and would occur after the initial test period.

All costs associated with the delivery, installation and removal of the system from the test site is at the Clients expense.

Should the testing fail and the Client wishes to continue testing a monthly payment will be required at the same amount for the entire period that the system is on site. If you wish to place the unit on test for a period to modify it and complete R&D initially, the Booking of the test site fee will apply and a monthly charge for the testing during the R&D phase will also apply.