Oily Water Process

The Oily Water Process includes the following liquid waste classifications:

1. **Oily waters J120,**
2. **Waste oil / hydrocarbons,**
3. **Industrial wastewater, and**
4. **Groundwater (including M250, J100, N160, N250, F100).**

The above wastes received on the site largely originates from industrial wastewater and generally consists of non-putrescible materials.

Solids are suspended in water. Due to the nature of the waste and varying qualities to be received, the process required is a multi-level approach which requires complex planning and processing. The system has the ability to process in both batch and continuous process. This document should be read in conjunction with the flow diagram including technical and simplified flow with plant i.d. numbers. The flow diagram is presented in drawing No **BRSLS-001R6**.

The process works in the way outlined below.

Plant i.d. number 1050

In this part of the process the vacuum truck reverses into position suitable so that the connection point on the rear of vacuum truck and a flexible hose is able to be connected. The operator once connection point is confirmed then opens his valve and the valve on plant automatically will open accepting liquid and solid waste into 4” hose. The liquid and solid waste are screened through an in-line filter and pumped into a further part of the plant to holding tank JMT4 within plant i.d. 1052.

The liquid received in this part of the process is mostly liquid with minimum solids content, emulsions, etc.….

Plant i.d. number 1051

In this part of the plant is where the touch screen and operator interface are kept. Operators will key in their main docket number and cross references with flash point testing as well as flow meter for water used during the cleaning process. If liquids have not been tested, then pumps and process does not start as it is all interlocked to BRS processing quality system.

Once all waters have been decanted and pumped to plant i.d. No 1052, the system lights flash and sends signal to operator to check and remove hoses.

Plant i.d. number 1052

In this plant there is tank JMT4 which is the main holding and feeding tank. JMT4 is a buffer tank as well as a recirculation tank for the whole plant. Liquid waste is although processed through various parts of the plant, it comes back to this point again for many reasons but ultimately if it is not meeting discharge or re-use requirements.

This tank accepts main infeed liquids from vac truck receivable i.d. plant 1050, water by-products from receiving plants with i.d. 1055, 1056, 1057, 1058.

Plant i.d. number 1053

The tanks number JMT1 & JMT2 are tanks used for pre-conditioning of the liquids. These can be used in a batch process or continuous process alternating between filling and decanting and feeding to the DAF plant i.d. 1055. These tanks are the separation between bulk sludge, oils, and underflow.

These tanks have optional inputs to chemically treat product prior to progressing further in the process.

Plant i.d. number 1054

This is the chemical dosing component of the plant to separate contaminates from the liquids.

There are four chemical dosing systems for Ph adjustment, flocculation and coagulation as required. These systems are in a bunded area which feed to JMT1 and JMT2 with plant i.d. No 1053 as well as for continuous feed to the DAF plant i.d. 1055 and plant i.d. No 1056 which includes the sludge screw press.

Plant i.d. number 1055

This plant is a key component in processing all liquid waste going through the plant. The name of this plant is a DAF with stands for Dissolved Air Floatation. This process chemically treats the waste fed from JMT1 and JMT2 within plant i.d. No 1053. The DAF breaks the product down to three main components:
1.Underflow which is the clean treated water. This is then fed into plant i.d. No 1059 which is the polished clean water,
2. Sludge which drops to the bottom of the DAF and is fed to plant i.d. No 1056,
3. Floated effluent which is also fed back into plant i.d. No 1056.

Plant i.d. number 1056

This part of the process takes sludge from plant i.d. No 1053 and plant i.d. No 1055. This sludge is from the process and it is designed to take liquid waste and process it into a spadable product. This product is then tested and sent to a suitably licensed facility. All liquid coming from the process is resent back to plant i.d. No 1052 for re-processing.

Plant i.d. number 1057

This part of the plant is the oily water separator. This separator, as its name implies, separates water from oil in the last stage to refine to a higher quality oil. This separation process gets oil to a standard where there is beneficial re-use for the product. This is then tested and re-sold to oil recycling facilities for further refinement. The disposal of this liquid is to EPA approved and licensed facilities to accept such waste product.

All water is fed back into the closed loop system within the plant i.d. No 1052 for recirculation and processing.

Plant i.d. number 1058

This part of the process is the solids and sludge process. This process is designed to make liquid waste solids non spadable into a spadable product by adding additives to thicken and dry moisture content. It consists of a tip hopper, auger feeding, a cement hopper, mixing hopper and sludge storage hopper.

Plant i.d. number 1059

These are storage tanks which accept treated water from the process. These tanks hold the clean processed water, and they are the final holding point and last testing point. This liquid is then tested and graded to test if processes water meets either beneficial re-use on site, for export off site for other processes or suitable for disposal to Sydney Water sewer network.

Plant i.d. number 1060

This is a polishing process and triple checks after testing process there are no contaminates in the water, a police press is used as an option when either sending to sewer or for beneficial re-use on site. If it is for re-use, the system diverts the water to plant i.d. 1061. The flowmeter is trade certified and carries a Sydney Water consent to discharge under consent number 51065.

Plant i.d. number 1061

All water has been processed, tested and polished once coming to these tanks. These tanks are designed to link to tankers, water trucks and/or re-use on site. This is the highest quality water.