Trade Waste Information

Effluent Emission Limits

You may have recently received notification by Council that a sample of the trade waste effluent taken downstream of your pre-treatment device located on your property came back as non-compliant.
Note: All effluent samples are analysed by a NATA registered laboratory to check that emission levels are within Council's set limits.

Council would like to provide you with a brief overview of why a policy on effluent emission limits exists. The following is a brief description of the consequences excess strength effluent may have on the networks system and preventative measures to take that may improve the quality of effluent.

Why is trade waste monitored?

Whitsunday Regional Council is responsible for maintaining millions of dollars' worth of sewerage infrastructure, protection and extension of life of this infrastructure and ensuring the safety of its workers are key parts of managing operations

Typically, the design of sewerage systems assumes wastewater characteristics that are similar to that of residential wastewater. Wastewater from commercial businesses will generally have higher concentrations of pollutants that may significantly affect sewerage infrastructure.

Commercial waste may have an organic strength many times that of domestic sewage and could overload the network system and treatment facilities. Commercial waste may also contain other substances such as high levels of fats and grease, heavy metals and certain organic compounds that may have detriment on Council's infrastructure.

These substances may:

- pose a risk to the safety and health of sewerage workers;
- cause physical damage to sewerage infrastructure;
- inhibit biological processes at treatment plants;
- accumulate in biosolids, making their reuse difficult or impracticable; or
- pass through the plant untreated resulting in environmental contamination or an inability to reuse water.

Pre-treatment of wastewater is required if preventative cannot provide sufficient risk reduction. Typical pre-treatment options include passive or active grease interceptors or advanced treatment technologies.

Pollutants typically analysed by WRC

- Chemical Oxygen Demand ≤2000mg/L
- Total Suspended Solids ≤ 600mg/L
- Total Oil & Grease ≤100mg/L
- pH values ≥6≤10
- Kjeldahl Nitrogen ≤150mg/L
- Total Phosphorus ≤50mg/L

Trade Waste Information

Effluent Emission Limits

What could be the consequence of excess strength effluent?

Chemical Oxygen Demand (COD)

- COD values indicates the mass of oxygen consumed per litre of solution and expressed in milligrams per litre (mg/L). The higher the chemical oxygen demand, the higher the amount of pollution in the wastewater sample
- COD may accelerate the generation of sulphides in sewer mains, both gravity and pressure, and consequently produce odour and corrosion problems.
- May overload treatment units in the sewage treatment plants.
- May cause non-compliance with the sewage treatment plant licence conditions.

<u>High COD levels could be caused by the following-</u>

- Grease arrester or wastewater holding tank not being maintained adequately and not within frequency set by Council.
- High levels of organic waste left inside the grease trap (trap not maintained properly). Residual organic waste left inside a trap over long periods of time will turn anaerobic (deoxygenate) and create sulphide.
- substandard air circulation in the drainage system
- Chemical reaction

Total Suspended Solid (TSS)

- May cause blockages and sewage overflows in the drains of commercial and industrial properties.
- May form deposits in the sewer reducing its capacity that can lead to overflow conditions.
- May accumulate in wet wells and pump stations resulting in increased maintenance.
- can deteriorate mechanical equipment (pumps and valves) by abrasion.
- overload treatment units at the sewage treatment plant.

<u>High total suspended solid reading could be a result of the following-</u>

- trap not functioning correctly, could be undersized
- plates, dishes, being washed up without craping off excess food scraps
- insufficient solid separation at the source i.e. pot sink

Total oil & grease (TOG)

- cause overflows in the drains of commercial and industrial properties.
- cause the formation of deposits of greasy solids in the sewage transport system thereby reducing its capacity. These deposits can lead to the breakaway of accumulated grease at times of high or very low flow.
- accumulate in wet wells of pumping stations and cause blockages and failure of the pumps and exacerbate cleaning problems.
- deposit in bends of the sewer and cause restrictions and blockages.

- reduce the efficiency of sewage treatment processes.
- may cause non-compliance of the sewage treatment plant effluent with licence conditions Form an oily film in receiving waters.

High total oil & grease reading could be a result of the following-

- trap not functioning correctly, could be undersized
- Excessive use and release of oils, or processing of foods that contain high levels of oils & fats

pH levels

High pH (basic conditions) can be caused by some types of laundry detergents, cleaning agents, chemicals, and high alkalinity source water. Photo developing labs, detergents, and soap-based products are often alkaline.

Low pH (acidic conditions) can be influenced by low alkalinity in the water supply or acid-based cleaners. If there is an above-normal use of dairy products, soda, coffee or excessive baking, lower pH levels in the wastewater stream are likely.

high or low pH values

- may injure people working in and around the sewerage system.
- may cause corrosion of the sewer system.
- may upset biological treatment processes at the sewage treatment plant.
- may cause the release of toxic gas; hydrogen sulphide in case of low pH and ammonia in case of high pH.

Total Petroleum Hydrocarbon (THc)

- Can cause significant damage to the membranes in the receiving sewerage treatment plant.
- Can create an explosive situation within the sewerage network system.

High Hydrocarbon levels could be a result of the following-

- Pre-treatment system not performing adequately
- Excessive use and release of oils and greases into the system
- Pre-treatment system not maintained properly
- Pre-treatment system undersized

Kjeldahl Nitrogen

- May significantly contribute to the nutrient load discharged to the receiving environment.

Total Phosphorus

- May significantly contribute to the nutrient load discharged to the receiving environment.

High Phosphorus levels could be a result of the following-

- High levels of detergents and/or cleaning agents used
- Excessive use and release of oils and greases into the system
- Pre-treatment system not maintained properly.

What can be done to possibly improve the quality of effluent?

Grease arresters

Generally

- Ensure the grease trap is refilled with clean water immediately after the trap is maintained by your waste transport contractor.
- Ensure your waste transport contractor is maintaining your trap properly
- Have the trap maintained in accordance with the frequency set by Council (see your Trade Waste Permit document)
- If the pre-treatment system incorporates a pump well upstream or downstream of the grease arrester, the well must also be maintained (pumped out and cleaned)
- Upgrade your pre-treatment device that is either clearly undersized or is in disrepair.
- Use Council's trade sizing calculator to check if your grease arrester is considered undersized. The calculator can be found on Whitsunday Regional Council's Website through the following link https://www.whitsundayrc.qld.gov.au/economic-development-business-and-planning/business-and-regulations/trade-waste

Conserve Water

- Use dry or waterless cleaning methods such as wiping or sweeping spills rather than hosing.
- Avoid running the tap continuously during rinsing, plug the waste and fill the sink with wash water.
- Where sinks are used for rinsing, look at installing spring loaded foot operated taps or electronic sensor operated taps.
- Ensure the dishwasher is full each time you use it.

Reduce solid waste from entering your grease trap

- Scrape and wipe leftover food from plates and cooking utensils into the garbage before rinsing or washing.
- Never put solid waste such as coffee grounds or tea leaves down the sink.
- Provide appropriate scrapers for staff to use.
- In-sink garbage disposal units are not permitted by Council.
- Install basket/bucket strainers to all prep, pot and cleaners sinks.

Use less cleaning products

- High levels of detergents will dissolve grease, allowing it to pass through the grease trap, which may cause blockages downstream when the waste cools down.
- Avoid using strong cleaning products such as bleach and caustic soda.
- Do not use solvents, bacteria, enzymes or other substances in your grease trap.

Educate Staff

- Train kitchen staff about what they can and cannot put down the sink.
- Place signs or stickers around the kitchen to remind staff of proper practices.

Oil separators

Generally

- Ensure the pre-treatment device (oil separator) is maintained in accordance with manufacturer's instructions
- Use a good quality "Quick Break' cleaning product
- Have the holding tank pumped out as required (min. annually)

If you require additional information, please refer to the trade waste section on Whitsunday Regional Council's Website through the following link https://www.whitsundayrc.qld.gov.au/economic-development-business-and planning/business-and-regulations/trade-waste