May 2023

Self-monitoring guidelines

A guide on how to carry out self-monitoring as required under the Auckland Council Trade Waste Bylaw 2013 and trade waste agreements

What's it all about?

To manage and operate a safe and successful wastewater collection, treatment and disposal system, there must be effective control over the entry of substances which could jeopardise the health and safety of wastewater workers, the network, treatment plant processes and the environment.

We are responsible for controlling the quantity and quality of industrial waste discharged into the wastewater network, and for enforcing the Auckland Council Trade Waste Bylaw 2013. Sampling is carried out to ensure the limits of the bylaw and your trade waste agreement are adhered to.

There are two types of sampling: self-monitoring and audit sampling. Agreement holders are responsible for organising self-monitoring samples. Our trade waste team also carry out audit sampling.

The type and frequency of self-monitoring will vary depending on the nature of the discharge. The self-monitoring requirements specific to your site can be found in clause 14.2 of your trade waste agreement.

The following guidelines will help you set up a self-monitoring programme.

Prior to sampling

The following activities should be completed before any samples are taken:

- Engage an accredited laboratory to analyse the samples. You may use any accredited laboratory.
- Arrange transportation of the samples from site to laboratory
- Ensure that sampling equipment is clean. It should be cleaned with detergent and water – or as directed by the equipment manufacturer – then rinsed with water. It can also be rinsed in the trade waste prior to collection, in order to minimise the risk of contamination
- Identify the sample point/s. Sample points need to be representative of the discharge going into the public wastewater network, and health and safety should be considered. We recommend you create a map identifying the location for future reference
- Make sure the people who are taking the samples have been thoroughly trained.

Sample containers

Sample containers are often supplied by the laboratory you have engaged. If not, check with them about what type of container should be used.

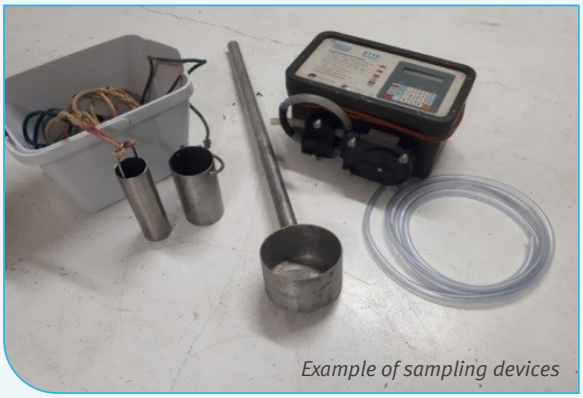
Containers must be clean and made of an appropriate, inert substance. Plastic containers are commonly used; however, glass **must** be used if oils and grease, hydrocarbons, solvents and pesticides are being analysed.

Example of sampling bottles

Sampling devices

An automatic sampler or manual sampling device can be used. Automatic samplers can make it easier to collect composite samples. A typical manual sampling device consists simply of a stainless steel or plastic container of 500mL to 1L capacity, attached to a length of string or pole. Manual sampling equipment should be made of an inert material that does not influence analysis process.

Watercare



Example of sampling devices

Sampling methods

There are two sampling methods used for trade waste samples: grab samples and composite samples. Grab samples measure the instantaneous characteristics of the wastewater at that particular time and place. They are a discrete sample collected randomly. Composite samples set out to measure the average concentration or load discharged and are prepared by mixing several grab samples together or by collecting a continuous fraction of the waste stream. You can find more detail on composite samples below. Check clause 14.2 of your trade waste agreement to find out which method you should use.

Sampling procedures

The following is a guide for collecting most trade waste samples. If you require further assistance on how to collect samples from your specific site, our trade waste team can help:

- Extreme care should be taken to avoid contamination and keep you safe
- Safety glasses and disposable gloves should be worn when collecting samples
- Be careful to avoid splashes and wash hands after sampling
- Label containers before taking samples. This avoids possible mix-ups and pens often don't work well on wet labels
- Remove caps from sample containers only at the time of sampling
- Don't touch the inside of the containers or caps, and put caps back on immediately after collecting samples to avoid contamination or spilt samples
- Don't rinse sample containers with wastewater. Some containers contain preservatives.
- Care should be taken not to scrape the walls of tanks and pipes when collecting samples as this can dislodge solids into the sample. Ensure the sample collected is representative of the flowing stream.
- Use only clean sampling equipment and rinse between samples.

Where possible pH and temperature should be measured onsite at the time the sample is collected. This is because they can deteriorate quickly and if they were analysed several hours after sampling the results can be very different.

Samples should be transported to the laboratory as soon as possible and kept out of direct sunlight. The characteristics of samples may start to alter after collection, making the sample unrepresentative of the wastewater being tested. If there is a delay between sampling and analysis, the sample should be immediately refrigerated. Do not freeze.

Composite sampling

Composite samples are smaller sub-samples collected over a period of time and mixed together to obtain average concentrations or loads. The sub-samples are usually based on time or flow measurements.

Time proportional samples are collected at regular time intervals. If your site operates 24 hours a day, sub-samples will need to be collected over the full 24 hours.

Flow proportional samples are collected by collecting a sample each time a set volume is discharged.

The same amount of trade waste should be collected for each sub sample. Ensure that the volume of each sub-sample is going to be enough to fill all the containers.

The sub-samples should be placed in a large, clean, bucket or container. Make sure this is mixed thoroughly before filling the individual sample bottles.

Composite samples can be collected manually or by using an automatic sampling machine.

Many of the trade waste agreements that require composite samples also require loads to be calculated. To calculate loads, you will need to know the discharge volume during the sampling period. If your site has a wastewater meter, read this at the start and finish of the sampling period. If you do not have a wastewater meter you will need to read the water meter at the start and finish. This can be used to calculate the wastewater discharge.

This equation is used to calculate loads:

$$\text{Load (Kg/day)} = \frac{\text{Concentration (mg/L)} \times \text{Daily Discharge Volume (m3)}}{1000}$$

Remember to forward your results through to the trade waste team

Our trade waste team is dedicated to helping industry dispose of its wastewater in an environmentally responsible manner. We are happy to answer any queries that you may have about self-monitoring or trade waste discharge.

Contact us

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