# TRADE WASTE PRE-TREATMENT GUIDELINES

Cook Shire Council

**Pre-treatment Guidelines for Trade Waste Discharges**

## Contents

## 1. Introduction

Trade Waste is the liquid waste generated from any industry, business, trade or manufacturing process. It does not include human waste, or prohibited substances as detailed in Schedule 1 of the *Water Supply (Safety & Reliability) Act 2008*.

As part of the Trade Waste Policy, Cook Shire Council is required by legislation to regulate the discharge of trade waste to Council's sewers. All discharges must comply with the Sewer Admission Limits as set out in the Trade Waste Policy.

The following information is provided as a **GUIDE ONLY** to assist waste generators. As waste quality may vary both within a given industry and between individual industries of the same type, the adequacy of these guides will need to be verified for each discharge.

## 2. Waste from Commercial and Service Industries

Owners of all premises where industrial, commercial or service enterprises are undertaken, or likely to be undertaken, must apply to Council for a Trade Waste Permit to discharge waste to the sewer. Discharge without approvals is an offence under the *Water Supply (Safety & Reliability) Act 2008* and subject penalties as defined in the Act. Commercial and service enterprises include, but are not limited to, the following:

- Restaurants, coffee shops, cafes
- Fast food outlets/take aways
- Butchers
- Bakers/hot bread shops
- Seafood shops
- Delicatessens
- Pie/pastry outlets
- Ice-cream parlors
- Hotels
- Motels
- Hospitals
- Clubs
- Laundromats
- Hairdressers
- Nursing homes
- Medical surgeries (includes dental, veterinary, chiropractic – where have X-rays)
- Garbage collection areas in commercial buildings
- Service stations/other automotive related business (small scale)
- Small engineering works
- Photographic/x-ray/graphic arts/mini labs
- Air-conditioning waste-condensates, cooling tower wastes
- Commercial refrigeration condensates

- Commercial swimming pool backwash water
- Supermarkets/shopping centres

In most cases wastes from these businesses would be termed as minor generators and should be suitable for discharge to the sewer after appropriate pre-treatment as indicated in Table 1. However, the Plumbing Inspector will assess all trade waste generators and determine their category.

## 3. Grease arrestor requirements

- Table 2 outlines different methods for estimating the size of grease arrestors. The final determination of adequate capacity will be done by the Plumbing Inspector.
- The maximum allowable capacity of an individual grease arrestor is 2,000L. Where the capacity requirement for premises is greater than 2,000L, additional arrestors shall be used, with each arrestor to be a discrete installation separately treating a defined waste stream.
- In certain circumstances Water and Wastewater may approve the installation of an arrestor in excess of a 2,000L capacity.
- Applications must include all details relating to loadings and detailed plans and specifications of the proposed device.
- The use of solvents, enzymes, mutant bacteria, odour control agents or pesticides in grease arrestors is prohibited unless specifically approved by the Plumbing Inspector.
- Cleaning and maintenance of grease arrestors will be carried out by Water and Wastewater approved liquid waste disposal contractors at minimum three (3) monthly intervals or more frequently as specified in the Permit Conditions and determined by Council's Plumbing Inspector.
- A permit to undertake plumbing work must be obtained from Council prior to installation.
- All work to be performed by a licenced Plumber/Drainer.

### 3.1 Installation within buildings

Grease arrestors installed inside buildings will not normally be allowed, except in exceptional circumstances, and only with the approval of Council's Plumbing Inspector and Environmental Health Officer. When installed and requiring remote pump out, the arrestor must be of the "Boat Bottom" design and fitted with gas tight lids.

### 3.2 Cover and frame installation

The cast iron grease arrestor frame shall be jointed to the thickening rib and/or wall extension of the grease arrestor by industrial Araldite Epoxy or similar Council approved material. The in situ concrete surround and the frame shall be at least 200mm wide and extend below the angle of the thickening rib of the grease arrestor.

### 3.3 Grease arrestor covers

Installation of covers and the cast iron frame shall comply with Council requirements, and the *Water Supply (Safety & Reliability) Act 2008* to ensure

that a gas tight seal is obtained between the cover and frame. Covers shall be machine edged.

The cast iron frame shall be full length and full width of the trap opening and placed on the thickening rib of the grease arrestor or the vertical concrete extension thereto of the grease arrestor wall and flush with the inside of the vertical concrete wall extension and/or thickening rib of the grease arrestor.

No steel checker plate steel lids only air tight lids, light duty lids may be used for non-walk ways, medium to heavy duty for trafficable areas (determined by Trade Waste Officer). The top of the grease arrestor is to be a minimum of 50mm above the surrounding surface area/or flood level with a tapered concrete apron.

### 3.4 Concrete wall extension and concrete surround

Precast and in situ concrete wall extensions and/or surrounds shall be vertical, smooth and free of air holes and jointed flush with the inside of the grease arrestor wall. Material used for the jointing of the precast concrete products to the grease arrestor shall be industrial Araldite Epoxy or similar Council approved material.

### 3.5 Grease arrestor outlet inspection opening

The outlet of all arrestor installation must discharge to a disconnector gully to allow for inspection and sampling.

### 3.6 Venting of grease arrestors

Grease arrestors shall be vented, size of vent to be a minimum of 100mm in diameter.

## 4. Guidelines for drains and discharge pipes conveying trade waste

### 4.1 List of dischargers wherein HDPE pipe or other approved materials would be required:

1. Laundries – commercial and hospital
2. Hospitals – sterilisers, autoclaves, laboratories
3. Tanneries
4. Anodising plants
5. Smallgoods manufacture
6. Boning rooms
7. Paint manufacture
8. Boiler blow down from industrial premises
9. Poultry abattoir
10. Margarine and butter manufacture
11. Mechanical parts washing – solvents
12. Printing works
13. Food processing
14. Bakery
15. Restaurant
16. Fish and chip shop
17. Take away food shop

18. Car wash
19. Retail butchery

### 4.2 List of dischargers wherein HDPE pipe or other approved material would be optional:

1. Coffee shop
2. Milk bar
3. Garbage compaction areas

*NB: Fixture wastes connected to trade waste drains are not to be installed in copper/brass piping and fittings.*

## 5. Waste disposal units

### 5.1 Food waste disposal units

Food waste disposal units (garbage grinders/in-sink waste disposal units) are not normally allowed in commercial applications. Where installation is approved an annual charge based on motor power shall apply. Garbage grinders must discharge directly to the sewer and cannot discharge through a grease arrestor.

### 5.2 Potato peelers

Potato peelers also come within this category and are subject to the same charges and conditions.

### 5.3 Macerators

Bed pan macerators are prohibited.

### 6.0 Oil arrestors

In-ground triple chamber type oil arrestors are no longer permitted for oil and grease separation. Oil arrestors are to be of the Coalescing Plate type, Vertical Gravity Separators, hydrocyclones, or other Water and Waste approved devices.

Council's Plumbing Inspector is available on telephone (07) 4082 0500 to answer any queries regarding Trade Waste matters.

## Table 1 – General pre-treatment guidelines

### 1.1 Mechanical repairs workshop

| Process | Pre-treatment | Hints |
|---|---|---|
| Parts washing with water | ➢ Wash area to be bunded to contain wash water. If outside the workshop, the wash area is to be bunded and roofed.<br>➢ A collection well and non-emulsifying pump. | ➢ Screens may be useful to exclude nuts and washers from the pump intake.<br>➢ Cleaning compounds to be compatible with the pre-treatment system. The cleaning |

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|---|---|---|
| | ➢ An approved oil Separator with an oil collection container and sludge removal system, all within a roofed and bunded area.<br>➢ Wash designated, bunded area (segregated from rest of workshop). | and maintenance program specified by the following supplier should be followed.<br>➢ Oil to be drained or wiped from parts prior to washing.<br>➢ Store used oil for recycling. |
| Parts washing with solvents (preferred method) | ➢ Spent solvents to be removed off-site for regeneration or disposal.<br>➢ Area containing the parts wash to be bunded to contain any spillage or leakage.<br>*NB: There is no discharge to sewer.* | ➢ Read the material safety data sheets for each of the materials being used. |
| Floor washdown (periodic) | ➢ Area to be under roof and bunded to exclude rainwater, but include washwater.<br>➢ A collection well and non-emulsifying pump.<br>➢ An approved oil separator with an oil collection container and sludge withdrawal system, all within roofed and bunded area.<br>*NB: The wastewater from washdown can drain to the same pre-treatment system as that used for parts washing.* | ➢ Screen may be used to exclude nuts and washers from the pump intake.<br>➢ Cleaning compounds to be compatible with the pre-treatment system.<br>➢ The cleaning and maintenance program specified by the supplier should be followed.<br>➢ Oil spills should be soaked up or wiped up prior to washing.<br>➢ Grease blobs should be scraped up before washing. |
| Vehicle body repair shops | ➢ Wet rubbing area to be roofed and bunded.<br>➢ Area to drain to a minimum 550L silt trap. | ➢ Settling pit to be serviced at regular intervals by a licensed contractor. |

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|---|---|---|
| Washing of vehicle body only (no de-greasing) | ➢ Wash area to be bunded to contain wash water. If outside the workshop, the wash area is to be bunded and roofed.<br>➢ Area drain to a minimum 550L silt trap. | ➢ Silt trap is to be serviced at regular intervals by a licenced industrial liquid removal contractor. |
| Vehicle detailing (de-greasing) | ➢ Area to be under roof and bunded to exclude rainwater, but include washwater.<br>➢ A collection well and non-emulsifying pump.<br>➢ An approved oil separator with an oil collection container and sludge withdrawal system, all within roofed and bunded area. | ➢ Collection well/separator to be serviced at regular intervals by a licenced industrial liquid removal contractor. |
| Service station covered forecourt | ➢ Area to be under roof and bunded to exclude rainwater, but include wash water.<br>➢ A collection well and non-emulsifying pump.<br>➢ An approved oil separator with an oil collection container and sludge withdrawal system, all within roofed and bunded area. | ➢ Collection well/separator to be serviced at regular intervals by a licensed industrial liquid removal contractor. |
| Fuel installation and refuelling depot | ➢ | ➢ Not permitted to sewer or stormwater drain.<br>➢ Dry cleaning technique should be adopted. |

## Pumps

- Only non-emulsifying pumps, such as an electrically driven diaphragm pump (at less than 40 cycles per minute) may be used to pump the wastewater to a separator.

- Pump discharge must not be greater than the capacity of the separator.
- Any persons wishing to sell an oil separator system which includes the pump for treatment of wastewater going to the sewer must conform to these guidelines.

### Bunding

- The area around all treatment installations must be bunded. There must be no spillage or overflow of trade waste influent or effluent, sludge, or treatment chemicals to the stormwater or sewerage systems (by gravity or by automated mechanical means).
- The storage of oils or chemicals within this bunded area is not permitted.

### Oil Separators

Installation requirements for oil separators are as follows:

- Only Council approved equipment to be installed.
- Installation must comply with relevant Council Building and Plumbing By-Laws.
- Minimum capacity 1,000L per hour.
- Where required, umps to be sized so as not to exceed the capacity of the separator.
- Only approved non-emulsifying pumps to be used.
- Sludge outlet to be fitted with a full flow valve.
- Manufacturers recommended services/clean out schedules must be adhered to.
- Servicing records to be kept and made available to Council Officers.
- Cleaners and detergents must be of Quick Break formulation.

*NB: In-ground oil arrestor grease-silt traps are no longer acceptable.*

### Housekeeping

Housekeeping refers to all work practices and activities which minimise waste. There are a number of housekeeping practices which can be adopted to reduce wastewater levels, and lessen the load placed on pre-treatment facilities. Good housekeeping procedures should be adopted wherever possible and in some circumstances can even classify the generator as a non-discharger. Some of the practices are:

- Use less water by adopting dry cleaning methods. The less water used, the less trade wastewater to be treated.
- Dry cleaning methods include wiping up spills and sweeping, rather than hosing. There are absorbent packs available to soak up oil spills.
- Ensure all equipment is properly cleaned and maintained.
- Discharging oil down the drain is prohibited. Ensure that adequate storage is provided for used oil and that a collection program is arranged with an oil recycler.
- Use Quick Break detergents. These help remove oil in the pre-treatment stage.
- Use cleaning products that have a pH of 7-10 at working concentrations.

## 1.2 Food Industry

| Process | Pre-treatment | Hints |
|---|---|---|
| All premises involved in cooking food | ➢ Grease arrestor (for sizing see Table 2).<br>➢ Dry basket arrestors in floor wastes and sinks.<br>➢ Used oil and fat storage.<br>➢ Garbage bin wash cleaning area to be roofed and bunded – wastewater to pass through a dry basket arrestor and discharged through a grease arrestor. | ➢ Grease arrestors to be serviced at regular intervals by a licenced liquid waste disposal contractor. |
| Food preparation only | ➢ Dry basket arrestors in floor wastes and sink.<br>➢ Grease arrestor in some circumstances (determined by Trade Waste Officer). | ➢ Grease arrestors to be services at regular intervals by a licenced liquid waste disposal contractor. |

## 1.3 Other trade waste generators

| Generator/Source | Characteristics of Waste | General Pre-treatment Requirements |
|---|---|---|
| Dental/medical/veterinary surgeries | | |
| No plaster casts | ➢ Solids. | ➢ Dry basket arrestor. |
| Plaster casts | ➢ Solids. | ➢ Plaster arrestor. |
| X-rays | ➢ Rinse water and spent solutions. | ➢ To sewer via balancing tank and silver recovery (refer to the photographic industry code of practice). |
| Photographic waste | | |
| Fast photos | ➢ Rinse water and spent solutions. | ➢ To sewer via balancing tank and silver recovery (refer to the photographic |

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|---|---|---|
| | | industry code of practice). |
| X-rays | ➢ Rinse water and spent solutions. | ➢ To sewer via balancing tank and silver recovery (refer to the photographic industry code of practice). |
| Laundromats | ➢ Lint, temperature. | ➢ Lint screens 1mm mesh, cooling pit.<br>➢ If temperature exceeds 38° Celsius. |
| Hairdressing salons | ➢ Hair, soap, dyes etc. | ➢ No pre-treatment required.<br>➢ Not to discharge through a grease arrestor. |
| Hobby clubs | | |
| Discharge less than 200L/day | ➢ Suspended solids. | ➢ No pre-treatment required. |
| Discharge of 200-1000 L/Day | ➢ Suspended solids. | ➢ Plaster arrestors. |
| Discharge over 1000 L/Day | ➢ Suspended solids. | ➢ Solids settlement pit 1000L, minimum of 1 hour retention time. |
| Kennels | ➢ Solids. | ➢ Dry arrestor pit.<br>➢ Open area controls.<br>➢ Dry cleaning prior to washing down. |
| School laboratory | ➢ Acid/alkali.<br>➢ Chemicals. | ➢ Sediment and neutralising pit. |

*NB: Discharge from photographic processing and laboratories is not to come into contact with copper pipes.*

It is to be noted that dilution of the waste stream to meet sewer admission levels is not permitted.

## Table 2 – Guidelines for sizing grease arrestors

2.1 The capacity of a grease arrestor may be calculated from the following capacity allowances for various fixtures and fittings in commercial premises.

| Fixture/Fitting | Capacity (litres) |
|---|---|
| Commercial kitchen sink | 140 |
| Double bowls or pot sink | 280 |

| | |
|---|---|
| Basin | 30 |
| Water heated bain-marie | 40 |
| Dishwasher<br>➢ Small (under bench)<br>➢ Medium (upright)<br>➢ Large (more than one outlet) | <br>400<br>800<br>1200 |
| Steamer/Hydrotherm/Boiling Pots/Stock Pots | 100 |
| Work burner | 140 |
| Mixing bowl | 140 |
| Glass washers (not in liquor sales area) | 200 |

2.2 If a restaurant, coffee shop, hotel, motel, hostel, nursing home etc does not have fixtures or fittings in excess of 250L capacity, the following criteria shall apply.

| Serving Capacity | Minimum size grease arrestor |
|---|---|
| 0 – 40 persons | 500 Litre |
| 40 – 90 persons | 1,000 Litre |
| 90 – 180 persons | 2,000 Litre |

2.3 Minimum grease arrestor capabilities

| Business | Arrestor Size (litres) | Comment |
|---|---|---|
| Take away | 550 | No cooking chicken, no woks |
| Hostel | 65 | |
| Retail seafood outlet | | No processing/cooking |
| Ice cream parlour | 550 | |
| Hot bread shop | 550-1,000 | Depending on fixtures/fittings/seating capacity |
| Pizza shop | 550-1,000 | |
| Takeaway and delicatessen | 550-1,000 | |
| Coffee shop (0-40 persons) | 550-1,000 | |
| Restaurant (4-40 persons) | 550-1,000 | |
| Retail butcher | 550-1,000 | |
| Bakery | 1000-2,000 | |
| Coffee shop (40-90 persons) | 1000-2,000 | |
| Restaurants (40-90 persons) | 1000-2,000 | |
| Retail chicken | 1000-2,000 | |
| Seafood processing | 1000-2,000 | |
| Coffee shop (91-180 persons) | 2,000 | |
| Restaurants (91-180 persons) | 2,000 | |
| Nursing homes | 2,000 | |
| Hotel | 2,000 | |
| Hospital | 2,000 | |
| Shopping centre | 2,000 | Combination shops |