Thorntons recycling

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→ MM03EM

Mr Eamon Merriman,
EPA,
Regional Inspectorate,
McCumiskey House,
Richview,
Clonskeagh,
Dublin 14.

11th August 06

Ref. W0195-01/06/RMC/01

Re Technical Amendment Condition 3.11.1

The licensee shall install and maintain silt traps and oil interceptors at the facility to ensure that all surface water discharges from the facility (installations for the separation of light liquids). Pass through a silt trap and oil interceptor prior to discharge. The interceptors shall be a Class I full retention interceptor and the silt traps and interceptors shall be in accordance with European Standard prEN 858

Dear Mr Merriman,

Padraic Thornton Waste Disposal Ltd. would like to apply for a Technical Amendment on our licence no. W0195-01 to revise Condition 3.11.1 from a full retention interceptor to a by bypass interceptor.
The reason we are requesting the change is because after consultation with our consultants (Burke Jenkins and Carlow Pre-cast) they feel a bypass interceptor is more than adequate as this area is classified as low risk. The interceptor is servicing a hard standing around our facility and is for vehicular traffic only. No parking or operations will be taking place on this hard standing.
The attached information was used in specifying the current interceptor installed on site and conforms to European Standard prEN858 as per above condition 3.11.1.

Rory McCullagh

EPA
OEE DUBLIN

Main File ✓
Public File ✓
Evaluation File EM
Date 16/8/06
For Assessment by Inspector Eamon Merriman

[redacted] CARLOW PRECAST TANKS LTD.

Manufacturers and Suppliers of Septic and Effluent Tanks for Sewage, Treatment Systems, Water Reservoirs, Pumping Chambers, Culverts and Special Products.

BYPASS SEPARATORS

Introduction

The use of an oil/water separator is required wherever there is the risk of hydrocarbon pollutants causing contamination at the point of discharge, i.e. an open ditch, river, stream or groundwater.

Normally the interceptors are made of GRP or PVC, which need to be installed on a reinforced concrete slab, filled with water and then encased in concrete. This is a slow and expensive method of installation.

Our interceptors are manufactured from Precast Concrete, and are normally installed on a bed of cl804 stone and backfilled with the excavated material. This will result in considerable savings on time and materials. Our service also includes delivery to site and off-loading into position.

Description of basic type - Class I & II

Class I Separator

This type of unit is required where the hydrocarbon pollutant concentration in the liquid discharging from the tank must be 5 mg/L or less, or where discharge is to sensitive waters. Class I units contain a coalescing filter which prevents passage through the system, of oil droplets found in suspension in the liquid. Class I units also contain a float controlled closure device. In the event of a major spillage, as pollutants enter the separator, the closure device will sink and shut off the outlet flow. The pollutants are contained within the separator, thus preventing contamination of the outfall.

Class II Separator

This type of unit is required where the hydrocarbon pollutant concentration allowable is 100 mg/L or less. They are used where the effluent quality requirements are less stringent, but there is still a need to protect the environment by shutting the system down in the even of a spillage. Class II separators are provided with a closure device only.

Product Selection

Bypass Separators

Bypass separators are used in areas where there is a low risk of spillage. These areas include large industrial units, carparks and motorways

The Bypass Separator is designed to treat a certain percentage of the maximum flow rate while allowing the excess to bypass the retention chamber of the unit. This means that pollutants washed off the drainage area at the beginning of a rainstorm are retained within the retention chamber of the separator. When the storm intensity increases, the pollutants are left undisturbed wihtin this chamber and the excess flow, which will now be relatively pollutant free, is allowed to bypass the retention chamber.

Maintenance

The Hydrocarbon pollutants and silt that build up within the separator should be removed periodically to ensure that maximum effectiveness of the unit is maintained.

In the event of a major spillage, the separator should be emptied immediately.

Materials

Carlow Precast Bypass Separators are manufactured from Grade A C50 N15 concrete, with steel fibre reinforcement at 40kg per cubic metre. Larger units contain conventional steel reinforcement as well as steel fibre.

Installation

The unit should be installed on a level bed of sand, gravel or broken stone. The base of the excavation should be level and free from projecting hard points such as rocks or boulders. The separator is lifted into position by our truck-mounted crane, assuming there is suitable access for our delivery vehicle. Backfilling is commenced as soon as possible after placement of the separators.

In most installations, it is not necessary to backfill around the separator with concrete.

Design

In principle, we design to four basic classifications; Full Retention, Bypass, Class I and Class II. Classes I and II pertain to the Draft Eurocode prEN858 (Separator Systems for Light Liquids Part I)

Our designs comply with the requirements of the EPA Wastewater Treatment Manuals:-

- Preliminary Treatment: Part 5: Oils, Grease and Fats
- Primary Secondary and Tertiary Treatment: Part II

All of our products are engineered to the customers' requirements, using established design parameters. The designs are based on flow speeds, retention times, temperature and the settlement characteristics of the target materials. The tank structures are designed to BS8110, BS8007 and the Dramix Design Guidelines for Steel Fibre Reinforced Concrete Structures.

SEPA scottish environment protection agency — ENVIRONMENT AGENCY — ENVIRONMENT AND HERITAGE SERVICE

ENVIRONMENTAL ALLIANCE - WORKING TOGETHER

POLLUTION PREVENTION GUIDELINES

USE AND DESIGN OF OIL SEPARATORS IN SURFACE WATER DRAINAGE SYSTEMS: PPG3

These guidelines are intended to assist in deciding on the need for an oil separator at a site and the size and type of separator which is appropriate. Certain major sites, such as oil refineries and bulk storage depots, will require specialised facilities and are outside the scope of this document. The guidelines are produced by the Environment Agency for England and Wales, the Scottish Environment Protection Agency and the Environment and Heritage Service in Northern Ireland, referred to as the Agency or Agencies. Sites are considered according to the individual circumstances and early consultation with your local Agency office is therefore advisable. Contact details will be found at the end of these guidelines.

Note that throughout these guidelines the term 'separator' is used instead of the term 'interceptor'. The terms have the same meaning.

1. INTRODUCTION

Surface water drains normally discharge to a watercourse or indirectly into underground waters (groundwater) via a soakaway. Contamination of surface water by oil, chemicals or suspended solids can cause these discharges to have a serious impact on the receiving water.

The Agencies have published guidance on surface water disposal (Reference 1), which offers a range of means of dealing with pollution both at source and at the point of discharge from site (so called "end of pipe" treatment). These techniques are known as "Sustainable Drainage Systems" (SuDS). Where run-off is draining from relatively low risk areas such as roofs, car-parks and non-operational areas, a source control approach, such as permeable surfaces or infiltration trenches, may offer a suitable means of treatment, removing the need for a separator. Where there are higher risk areas, which can not be connected to the foul sewer, end of pipe treatment, such as constructed wetlands or swales, may be required. However, each site needs careful consideration to assess the risks of pollution and there are many situations where a separator will be required, especially where the risk of spillage is high.

Oil separators are installed on surface water drainage systems to protect receiving waters from pollution by oil, which may be present due to minor leaks from vehicles and plant, from accidental spillage or due to deliberate and illegal tipping into drains.

Effluent from industrial processes and vehicle washing should normally be discharged to the foul sewer (subject to the approval of the sewerage undertaker) for treatment at a sewage treatment works. Although the use of separators for such effluents is not covered by these guidelines, much of the guidance will be relevant.

2. SEPARATOR STANDARDS AND TYPES

A European standard (BSEN 858-1) for the design and use of prefabricated oil separators has been adopted (Reference 2). New prefabricated separators should comply with the standard.

a. Separator classes

The European standard refers to two "classes" of separator, based on performance under standard test conditions. See the Appendix for information on the test procedure.

Class 1 separators, which are designed to achieve a concentration of less than 5mg/l of oil under standard test conditions, should be used when the separator is required to remove very small oil droplets, such as those arising from car park run-off.

Class 2 separators are designed to achieve a concentration of less than 100mg/l oil under standard test conditions and are suitable for dealing with discharges where a lower quality requirement applies (for example where the effluent passes to foul sewer) and for trapping spillages.

Both classes can be produced as 'full retention' or 'by-pass' separators.

The oil concentration limits of 5 mg/l and 100 mg/l are only applicable under standard test conditions. It should not be expected that separators will comply with these limits when operating under field conditions.

b. Full retention separators

'Full retention' separators treat the full flow that can be delivered by the drainage system, which is normally equivalent to the flow generated by a rainfall intensity of 50mm/hr. On large sites, some short term flooding may be an acceptable means of limiting the flow rate and hence the size of full retention systems.

4. SEPARATOR SIZE

a. Nominal Size

Separators should be tested in accordance with the standard test procedure, which is based on the European standard. Each separator will be allocated a nominal size (NS) on the basis of the test results. See the Appendix for details. Full retention and by-pass separators are referred to as NS and NSB respectively.

The nominal size (NS) of a full retention separator that is required for a catchment area (A) is obtained from the following formula:

$NS = 0.018\ A(m^2)$

For a By-pass separator the formula is

$NSB = 0.0018\ A(m^2)$

In addition, capacity for silt storage (C) must be provided, either as an integral part of the separator or as a separate upstream unit, according to the following formula:

C(litres) = NS x 100

Silt capacity for a By-pass separator must be provided either upstream of the separator or in the By-pass weir chamber and not in the main separating chamber.

b. Minimum size

The minimum working capacity (which excludes any provision for silt deposition) of a separator should be 1,000 litres, except in the case of 'forecourt' separators, which should normally have a minimum capacity of 7,600 litres. For by-pass separators the minimum capacity is defined as the working capacity of the separating chamber only.

5. AUTOMATIC CLOSURE DEVICES AND ALARMS

a. Oil storage and closure devices

The oil storage capacity is defined as the volume of separated oil that can be stored in the separator without any of the stored oil entering the inlet or outlet of the separator. The minimum oil storage volume (V) shall be:

V(litres) = NS x 10 or NSB x 15

Full retention separators should be fitted with a device that will prevent flow passing through the separator when the quantity of oil in the separator exceeds the oil storage volume (V). Closure devices are not suitable for by-pass separators.

b. Oil level alarm

It is recommended that separators be fitted with a robust device to provide visual and audible warning (if necessary to a remotely located supervisory point) when the level of oil reaches 90% of the oil storage volume (V) under static liquid level conditions. The device should be fitted within the separator to provide protection against damage. It should be installed and calibrated by a technician who is familiar with the system. Regular maintenance and testing are essential. Any electrical device used in the separator shall be intrinsically safe and certified to an explosion protection standard suitable for Zone 0 and conform to the requirements of BS5345 part 1 and BS EN60079-10 1996.

c. Silt level alarm

In order to prevent the build-up of excessive levels of silt, a silt level alarm may be used.

6. LABELLING AND INSTALLATION

a. Labelling

Separators should be provided with a durable label, providing the following information, which can be read after installation:

Manufacturer's reference number and year of manufacture

By-pass/full retention	Class of separator	Nominal size
Oil storage capacity	Volume of separator	Silt storage capacity
Oil level warning device details	Depth of oil storage	Closure device details

b. Installation

Clean, uncontaminated water such as roof drainage should, if possible, be discharged downstream of the separator. Adequate facilities should always be provided for the inspection and maintenance of the separator, and tanker access should be available for cleaning purposes. Flow cut-off valves to isolate the separator should be considered for use in an emergency or during site cleaning operations.

7. MAINTENANCE AND USE

It is important to recognise that oil separators require regular maintenance. Routine inspections should be undertaken at least every six months and a log maintained of inspection date, depth of oil and any cleaning that is undertaken. If coalescing filters are fitted they should be maintained and renewed in accordance with the manufacturer's instructions. Separators should be provided with sufficient access points to allow for inspection and cleaning of all internal chambers. Access to the separator should be kept clear and should not be used for storage.

A separator will not work properly for dissolved (soluble or emulsified) oils or if detergents or degreasers are present, as in vehicle wash water. Such discharges should be drained to the foul sewer.