# Slipway Operation

## Trade Waste Guideline No. 10

### INTRODUCTION

Trade waste discharges from slipway facilities or companies conducting marine vessel repairs have the potential to adversely affect the sewerage system. Waste waters may contain suspended solids, grease/oils, anti-fouling chemicals (e.g.: heavy metals such as copper and tin) and contaminated stormwater. Appropriate management practices at each site are therefore necessary.

### DEFINITIONS

Tributyltin (TBT) is an organo-tin compound used in some anti-fouling paints to minimise the marine growth on shipping hulls. It is extremely toxic to marine animals and has a bio-accumulative affect.

### KEY TRADE WASTE QUALITY REQUIREMENTS

| PARAMETER | GENERALLY ACCEPTED LEVEL | |
|---|---|---|
| | **METRO WWTPs** | **COUNTRY WWTPs*** |
| Suspended Solids | <500 mg/L average | <50 mg/L average |
| pH | Between 6-10 units | Between 6-10 units |
| Total Dissolved Solids | <1500mg/L | <1500mg/L |
| Tributyltin (TBT) | 100 **nano** gram/L | Dependant on capacity of receiving WWTP |
| Flow rate to sewer | Dependant on capacity of receiving sewer | Dependant on capacity of receiving sewer |

**Country waste water treatment plants (WWTPs) are generally only able to cope with much smaller pollutant or hydraulic loads than metropolitan WWTP's.*

*Note: Discharge limits may be varied under certain circumstances for individual dischargers.*

### DESIGN / INSTALLATION

- Ballast, bilge and seawaters are prohibited from discharge to the sewer.
- The slipway, cleaning and wash down area is designed to minimise the area that is unroofed and is solely used for the purpose of cleaning marine growth from the hull.
- The area is bunded to contain all wash down water and exclude clean stormwater runoff from entering the slipway, in accordance with Trade Waste Bunding Guideline No. 4.
- Wash water and initial, 'first flush' stormwater falling on the 'dirty' area will be accepted to sewer after appropriate pre-treatment. The 'first flush' volume is specified by the Environment Protection Authority (EPA). A rain gauge coupled to the control panel monitors rainfall events.
- When a rainfall event exceeds the 'first flush' amount, further stormwater flow is automatically directed away from sewer to the stormwater drain. **Activities likely to introduce new contamination during rainfall events are not permitted.**
- Discharge of collected wash water and 'first flush' rainfall to sewer is delayed until after a rainfall event has passed so as to avoid flooding of the sewer.
- Solids from work areas of slipway are removed by dry cleaning/sweeping prior to wash down.

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- All tanks containing the waste water and treatment chemicals are bunded in accordance with Trade Waste Bunding Guideline No. 4.

**TYPICAL PRETREATMENT**

All wash water and contaminated "first flush" stormwater is directed to sewer via;

- A suitably sized screening device (silt trap and/or screen with maximum 5mm size mesh) discharging via a stormwater bypass chamber to a pump chamber.
- A float operated pump transfers waste water to the settling tank.
- Chemical additions (e.g. coagulants and flocculants) into the solids settling tank, to aid separation, if the suspended solids, heavy metals, or other contaminant concentrations exceed the Standards of Acceptance of Liquid Waste to Sewer.
- Waste water from the settling pit overflows to a holding tank of sufficient capacity to hold the 'first flush'. A solenoid valve on the outlet, coupled to a control panel, opens once the stormwater 'peak flow' has passed the site, discharging waste water to the sewer.
- All clean stormwater (i.e. that falling after the 'first flush') is diverted away from sewer and discharged to the stormwater system.
- See Figure 1 for a typical layout of a contaminated stormwater treatment system.

**ADDITIONAL PRETREATMENT**

- Balance tanks for waste water storage may be required depending on the hydraulic capacity of the local sewer network or WWTP.
- An oil and grease separator will be required if any oily waste waters (e.g.: engine maintenance) discharge into the system.
- Where antifouling paint containing Tributyltin (TBT) may be applied or removed, all supernatant is discharged to sewer via a Granulated Activated Carbon (GAC) bed. The GAC will require replacement as the concentration of TBT nears the 100 nano-gram per litre discharge limit.

**MAINTENANCE**

It is the responsibility of site management to ensure the effective operation of all pre-treatment equipment (e.g. ongoing removal of accumulated solids, sludge removal, chemical replacement.)

**FEES AND CHARGES**

An annual fee for discharge of stormwater to sewer will apply. A current fee schedule can be obtained from the Trade Waste Branch.

**ADDITIONAL INFORMATION**

Mains Water Protection (AS/NZS3500-2003 Part 1), Trade Waste Batch Treatment Guideline No.17, Trade Waste Blind Tank Guideline No.3, Trade Waste General Policy, Trade Waste Contaminated Stormwater Guideline No.19,



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***Figure 1: CONTAMINATED STORMWATER TREATMENT SYSTEM***