Pollution Prevention and New Industrial Estates

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POLLUTION PREVENTION AND NEW INDUSTRIAL ESTATES

Pollution within Industrial Estates

Legal Framework and Guidance

Surface Water Management

Project Examples
POLLUTION WITHIN INDUSTRIAL ESTATES

Sources
- Poor Housekeeping
- Failure in operational activities
- Accidental/catastrophic failure

Impact on the Water Environment
- Typically as Point Source Discharge

Pollution sources: 1. Vehicle fleets

Where there is a truck or van fleet there will be leaks & spills - e.g. associated with ad hoc maintenance, sometimes fuelling, & often steam cleaning – oil/detergent mix contaminates drainage. Intermittent – sources not always obvious.
Pollution sources: 2. Industrial yards

Loading, unloading and handling of potential pollutants (solid, liquid, raw material, waste, final product), plus machinery & plant. Ad hoc cleaning, illicit disposals...

Some sites have it all...
Accidental/ Catastrophic Failure

Amcor Flexibles, Brucefield Industrial Estate
- Fire September 2010
- Breach leading to release of chromic acid, sulphuric acid, water based coating agents and adhesives
- Mostly the firewater discharged to the watercourse via surface water drains

...CHRONIC POLLUTION

Impact on the Water Environment

Traditional gravity surface water drainage system discharging to watercourse – point source
Impact on the Water Environment

- Pollution from food waste compactors
- Unmaintained oil separators
- Drainage cross connections

LEGAL FRAMEWORKS AND GUIDANCE

The Water Environment (Controlled Activities) (Scotland) Regulations 2011
General binding rules (GBR)
Registration
Licences

SEPA – Regulatory Method (WAT-RM-08)
Sustainable Urban Drainage Systems (SUDS)
Legislation: Tools for Actions – For Commercial Development

**GBRs**
No pollution from surface water drainage systems
No disposal into surface water drainage systems
Areas for storage, loading, unloading and handling areas of potentially polluting materials must not drain to a surface water system if built >2006.

**Notices**
SEPA has powers to serve notices to require clean up and prevention actions on premises.
SEPA can serve an enforcement notice in respect of a failure to comply with a GBR

Authorisation for Industrial Estates

**Licences – Simple licence for surface water discharge**
- Industrial Estates – but does not include business parks
- Includes marshalling yards, lorry parks and distribution depots including ports
- Does not include smaller developments of one or several small units
SURFACE WATER MANAGEMENT WITHIN AN INDUSTRIAL ESTATE

Challenges
- Space
- Constraints
- Phasing

Surface Water Management Train

Levels of Treatment Required
Housekeeping can only go so far in Pollution Prevention

- Drum storage within bunded compound with drainage sump, preferably covered

- Fuel stored in bunded areas

- Roof drainage not exposed to contamination

- Leakage

Atmospheric deposition
• Even poor construction and lack of repair can lead to pollution
Proprietary Systems

Oil Separators

Hydrodynamic Vortex Separators

Importance of Source Control

Source Controls are most important element of treatment train

Good Housekeeping

Site Control

Regional Control

Receiving Watercourse
Source Control Examples

Site Control

Treatment and Conveyance
Two different scenarios

New Industrial developments
SUDS
- ponds & basins
- swales, bioswales
- filter strips
- filter drains
- rain gardens
- permeable paving
- etc.

Retrofit situations
Surface water treatment technology: identify opportunities
SUDS (if space available)
Vortex separators
Source control measures for specific industries
LID techniques
Integral treatment units
J4M8 DISTRIBUTION PARK

SITE BACKGROUND

SITE BACKGROUND - Development

- 83 Ha site
- 208,000m² GFA
- 40% of overall site area
- Soft landscaped
Surface Water Management Train

Source Control:
Permeable paving
Filter drains
Swales
Wetlands

Site Control:
Linear wetlands/swales

Regional Control:
Retention ponds

Solutions Provided
Treatment of diffuse pollution provided at source
Meets requirements of CAR Treatment train
Provides amenity and habitat
Addresses both water quality and quantity
Brownsburn, Airdrie

BROWNSBURN FORMER LANDFILL CULVERT BENEATH LANDFILL TREATMENT AREA
Initial Design

The Solution

Impoundment

Reed bed

Ponds
QUESTIONS