

# Environmental Management System 5

## Foul Lane Closed Landfill Site: Maintenance Manual

Authorised by: Chief Executive

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**Document Revision History**

**Issue: 04**

**Date of Issue: 25<sup>th</sup> September 2014**

Issue	Author	Date	Amendments
04	ASB	25/09/2014	Document redrafted to accommodate major alterations to Leachate Treatment apparatus

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## **1.0 Site Location and Access**

### **1.1 Site Location**

- 1.1.1 The landfill site is located adjacent to the northern boundary of the Foul Lane Waste Transfer Station (WTS). The Station is situated close to the junction of A570 (Scarisbrook New Road) the B5276 (Meols Cop Road), Southport. See Appendix I

### **1.2 Access route**

#### **To Landfill Site**

- 1.2.1 Access onto the landfill site is gained via a gateway in the northern boundary palisade fence which separates the landfill site from the WTS. Access onto the WTS site must therefore be obtained first. This is obtained via the northern entrance gate into the WTS site. The gateway onto the landfill site is on the left hand side approximately 30 metres into the WTS site.

#### **To Leachate Compound**

- 1.2.2 The Leachate Treatment Compound is located immediately left upon entry onto the landfill site, and contains the air stripping and monitoring apparatus required to enable the leachate to be discharged to public sewer.

#### **To Pump Chamber Area**

- 1.2.2 The discharge pump chamber area is located in the WTS site immediately on the right hand side once access into the WTS site, as described in 1.2.1 above, has been obtained. The pump chamber discharges the combined flows of landfill leachate and waste water arising from the WTS via a rising main to public sewer.
- 1.2.3 The outfall to public sewer is considered to be at the intersection of Foul Lane with the A570 Scarisbrick Road; nominally 150m due south of the site. United Utilities are not able to confirm this, and are reluctant to lift any manholes due to the high traffic flows at the said intersection.

#### **To Valve Chamber**

- 1.2.4 The valve chamber controlling the flow to the rising main is located in very close proximity to the pumping chamber but situated outside the WTS site in Foul Lane footpath immediately adjacent to the western boundary fence.

*Note. Sometimes the valve chamber is covered with vegetation and can be difficult to locate.*

### **To Sub-Station**

- 1.2.5 The sub-station, providing electrical power to the waste transfer station, also provides power to the Leachate Compound, which is taken as a feed via a sub-meter.
- 1.2.6 The Sub-Station is a brick enclosure immediately the Pump Chamber as described in 1.2.2 above.

### **1.3 Access into the Leachate Compound**

- 1.3.1 Access to the Leachate Compound is gained through the landfill site as detailed in 1.2 above.

Note that unlike other sites, there is no CCTV coverage.

- 1.3.2 Keys to the landfill site gate and Leachate Compound are kept in the offices of the Facilities Section on the 7th floor of 1 No Mann Island, Liverpool L3 1BP. In addition, Veolia have a key for access onto the landfill site which they require for litter picking etc.
- 1.3.3 Prior to entering the landfill site, all visitors must 'sign in' at the weighbridge office. Similarly when leaving the site, visitors must 'sign out'.

### **1.4 Access to the Sub-Station**

- 1.4.1 Access to the Sub-Station is made as detailed in 1.2 above.
- 1.4.2 Access into the Sub-Station is required to record the electrical sub-meter; Veolia hold the key to the door on site.

## **2.0 Purpose of Pumping Station and Aeration System**

### **2.1 Background**

#### **Historical**

- 2.1.1 Foul Lane operated as a landfill site from the early 1980s until it was replaced by the Waste Transfer Station in 1990. It is approximately 9 hectares in area.
- 2.1.2 The site was installed as a 'Dilute and Disperse', whereby any leachate arisings are allowed to disperse to groundwater.
- 2.1.3 In the early 1990s leachate outbreaks were discovered on the surface of the site. The leachate started to run off the site in the direction of Fine Jane's Brook and Boundary Brook.
- 2.1.4 Leachate outbreaks had occurred on the site some years earlier whilst the site was still operational. A trammel drainage system was constructed at this time around the perimeter of the site to contain the leachate and protect the adjacent water courses.
- 2.1.5 The Environment Agency (EA) was of the opinion that the trammel system had failed and requested MWDA to provide further remedial works to contain the leachate and prevent the brooks from becoming contaminated.

#### **Site Drainage and Aeration**

- 2.1.6 At the request of the EA, a leachate cut off drain was constructed around the site immediately within the original trammel drain.
- 2.1.7 Although the trammel system was effectively abandoned, the new cut-off drain's final connection was into the final manhole (MH1A) of the trammel system. This became the pump chamber upon which the Leachate Treatment System is constructed.
- 2.1.8 Leachate which collects in the cut off drain and flows into MH1A; from where it is subjected to an air stripping process to remove the dissolved methane before being discharged via a gravity drain into the pump chamber (Pump Chamber No2) is located on the WTS site. The effluent in the Pump Chamber No 2 is discharged to public sewer via a rising main.
- 2.1.9 See Appendix III for site infrastructure

### **2.2 Environment Agency**

The site is not subject to either an Environmental Permit or Waste Management Licence. Consequently there are no EA compliance limits/targets to attain.

## **2.3 United Utilities**

- 2.3.1 The leachate arising from the site is classified as trade waste, and as such a Trade Effluent Discharge Consent (Water Industry Act 1991) is required from United Utilities. This sets out the parameters with which the leachate must comply, in order for it to be discharged to foul sewer.
- 2.3.2 Limits are set upon the composition, volume and rate of discharge.  
See Appendix II
- 2.3.3 Monitoring of the leachate composition and compliance with the TEDC is undertaken as part of the [Environmental Monitoring Procedure EMS 5](#)

### **3.0 Leachate Treatment System**

#### **3.1 Leachate treatment compound**

##### **3.1.1 Emergency electrical override**

An emergency electrical override switch is located in the Sub-Station as described in 1.2 above. In the event of an out of hours emergency, Veolia ES would need to be contacted to gain access into both the Waste Transfer Station site and the Sub-Station. See [EMS 6 Contingency & Emergency Plan](#) for contact details

##### **3.1.2 The leachate treatment compound comprises of:**

- A submersible pump chamber
- The leachate aeration apparatus
- A Methane Analyser
- A drainage outfall to the discharge pump chamber

All of which are enclosed within a paladin fenced compound.

#### **3.2 Equipment inventory**

3.2.1 A full inventory of the system apparatus can be found on MWDA's Asset Register for the closed landfill sites. This is a live document that details the individual components and their locations, along with a source for their replacement.

3.2.2 A Store of standby components is kept at the Authority's storage unit at its South Sefton facility. An individual member of the Waste Facilities department is tasked with maintaining the stock in Stores as part of general duties. A list of Stores can be found in [Asset Register](#).

##### **3.2.3 Apparatus in the Leachate Treatment compound:**

- 1 No Pump chamber Nom 4m deep
- 1 No Submersible (Supply) pump
- Nom 5 metre length of armoured hose
- 2 No Level control sensors
- 1 No 2000ltr Stainless Steel Sparge tank (mounted above the Pump Chamber), incorporating sparge pipework and jetting nozzles, and ancillary pipework.
- 1 No 1000ltr Jetting Tank (Mounted above the outfall manhole chamber) incorporating jetting nozzles and ancillary pipework.
- 1 No Methane Analyser
- 2 No Centrifugal (Transfer) pumps
- 1 No Air Blower and associated hoses
- 2 No Secondary aeration submersible pumps
- 2 No Centrifugal (Transfer) pump control panels
- 1 No Electrical control panel



- Flow meter

### **3.3 Trace Heating and Insulation**

All external process pipework which might hold static leachate has been fitted with trace heating, and is fully insulated against frost to prevent the Leachate Treatment System freezing up.

### **3.4 Telemetry System**

A telemetry system is in place to enable the leachate level inside the submersible pump chamber to be monitored from MWDA's head office

### **3.5 Leachate Aeration process**

- 3.5.1 The following drawing details the apparatus assembly and process of the Leachate treatment system.

MWDA.530-350-005. General arrangement, elevation and flow diagram

3.5.2 **Stage 1. Leachate Collection (Pump Chamber No1):**

- 1 Leachate is collected via the landfill site cut off drain, and flows into the Pump Chamber.
- 2 Once the leachate level in the Pump Chamber rises to a pre-set point (picked up by high level sensor) the Supply Pump, located in the bottom of the chamber, is automatically switched on. The Supply Pump then discharges the leachate into the above ground Sparge Tank, until the leachate level in the Pump Chamber is lowered to another pre-set level (picked up by the low level sensor) and the Supply pump stops running.

3.5.3 **Stage 2. Air Stripping (Sparge Tank)**

- 1 The leachate from the Pump Chamber is discharged by the Supply pump into the Sparge Tank mounted above the Pump Chamber, where it is injected through the jetting nozzles, allowing the dissolved methane contained within the leachate to be released to air. The leachate then falls into the body of the Sparge tank.
- 2 As the leachate collects in the body of the Sparge Tank, it will rise to a pre-set level where the level probes activates one of the Transfer pumps; discharging the leachate from the Sparge Tank to the Jetting Tank. As the leachate level in the Sparge Tank is lowered to a pre-set point, the Transfer pump stops running.

- 3 The Transfer Pumps operate on a 'duty' and 'stand-by' rotation, with the pumps alternating in each operational cycle.

**3.5.4 Stage 3. Secondary Air Stripping (Jetting Tank)**

- 1 The discharged of the leachate from the Sparge tank via the Transfer pumps provides an opportunity to introduce a secondary air stripping stage; utilising the pressure from the Transfer Pumps as the leachate is discharged to sewer.
- 2 The Jetting tank is mounted above the outfall manhole, and contains a short length of sparge pipe with jetting nozzles; and an inner holding reservoir which is used for sampling the leachate. As the leachate is discharged from the Sparge Tank into the Jetting tank, it is injected through the jetting nozzles, releasing any residual dissolved methane, and falls into holding reservoir below.
- 3 The holding reservoir is contained within the Jetting tank, and collects the leachate discharged from the jetting nozzles to enable a sample of the leachate to be taken. The holding reservoir is open at the top, and leachate is released by overflowing into the outfall manhole below. A short length of pipe feeds from the sparge pipe into the bottom of the holding reservoir to ensure that leachate is properly displaced to prevent any stagnation.
- 4 Leachate overflowing from the holding reservoir falls into the outfall manhole, which discharges via gravity to the pump chamber (Pumping Chamber No2) located on the WTS site. From here leachate is discharged along with the effluent from the WTS to public sewer via a rising main.

**3.5.6 Stage 5. Tertiary Air Stripping (Air Blower and Recirculation pump)**

- 1 The Methane Analyser serves to sample the dissolved methane content of the leachate, and controls the activation of an Air Blower and Recirculation pump.
- 2 The Recirculation pump is sited within the Sparge tank, and once activated, recirculates the volume of leachate held within the Sparge tank. The Air Blower, sited beneath the Sparge tank, injects air into both the Sparge tank and the Jetting tank holding reservoir
- 2 Samples are taken by the Methane Analyser at predetermined intervals (typically every 30minutes). Should the Analyser record a dissolved methane content  $>0.086\text{mg/l}$ , it automatically switches on the Recirculation pump. If the dissolved methane should increase, and the Analyser records a dissolved methane content of  $>0.11\text{mg/l}$ , it automatically switches on the Air Blower.
- 3 Both the Recirculation pump and Air Blower serve to agitate the body of leachate in order to release any dissolved methane.
- 4 The Recirculation pump and Air Blower will continue to operate until the Methane Analyser records a dissolved methane content of  $<0.086\text{mg/l}$  and  $<0.11\text{mg/l}$  respectively, when it will automatically switch them off in turn.

### **3.6 Emergency Isolation Switch**

- 3.6.1 Otherwise known as a Kill Switch, and emergency isolation switch has been installed in the Sub-Station, and enables the electrical supply to the Leachate Treatment Compound to be terminated in the event of an emergency.
- 3.6.2 The switch is located at an appropriate safe distance from the Compound that enables it to be observed without getting too close to any emergency event.
- 3.6.3 In throwing the Kill Switch, all electrical power to the Treatment Compound will be isolated, shutting down all operational systems.
- 3.6.4 Access to the Kill Switch, located in the Sub-Station, is made as detailed in 1.2 above.

## **4.0 Checking, Monitoring and Maintenance**

### **4.1 Meter Readings**

- 4.1.1 Readings are taken of all the electrical and operation meters in order to monitor the performance and efficiency of the plant and apparatus; along with the electrical consumption of the facility.
- 4.1.2 The readings are generally undertaken by the Waste Facilities' Environmental Officers during the course of the Environmental Monitoring activities. When necessary, this shall be undertaken by other members of the Waste Facilities Department with a sufficient familiarity of the Leachate Treatment System.
- 4.1.3 Details, and the locations, of the meters to be read can be found in Meter Details and Locations – EMS 5. This is a pictorial guide to each meter and its location.
- 4.1.4 The meter readings are recorded by hand on the 'crib sheet' Meter Record Sheet – EMS 5. A store of blank hard copies are kept on site.
- 4.1.5 The readings are then archived on the spreadsheet Meter Reading – EMS 5. This automatically analyses successive readings for anomalies.
- 4.1.6 Anomalies could reflect blockages in the pipework, or pumps running inefficiently, and are investigated accordingly

### **4.2 Condition Monitoring and Maintenance**

- 4.2.1 The Leachate Aeration system is an automatic system, requiring no manual operation.
- 4.2.2 The installation is visited by Waste Facilities' Environmental Officers during the course of the environmental monitoring activities, and by Waste Facilities' Mechanical Engineer as part of general duties.
- 4.2.3 Condition Monitoring and Maintenance work is generally undertaken by members of the Waste Facilities Department with a sufficient familiarity of the Leachate Treatment System; assisted by Contractors as and when required.
- 4.2.4 Contractors are selected from the Authority's list of authorised Contractors and Suppliers EMS 4
- 4.2.5 The frequency of the Condition Monitoring and Maintenance shall be in accordance with the Monitoring and Maintenance Schedule – EMS 5.

#### 4.2.6 Sparge Tank Filter

- 1 The Filter is located on the incoming pipework mounted on the external face of the Sparge tank, and serves to filter out any small deposits in the leachate that might block the jetting nozzles.
- 2 The procedure for opening and inspecting the Filter can be found in [Flow Meter Pipework Cleaning Protocol EMS 5](#).

#### 4.2.7 Pressure Gauge

- 1 A pressure gauge is mounted on the incoming pipe to the Sparge tank Filter to provide an indication of the condition of the sparge tank pipework.
- 2 The gauge contains a red tell-tale needle and black operating needle. If either needle is beyond the operating pressure, indicated by the blue mark on the gauge face, it indicates a blockage in either the Filter or the pipework.
- 3 If the operational pressure, as indicated by the black needle, is in excess of the blue mark, the Filter shall be opened and inspected for blockages in accordance with [Flow Meter Pipework Cleaning Protocol EMS 5](#).
- 4 If after inspecting the Filter the black operating needle is still beyond the blue mark, it indicates a blockage in the pipework. This shall be reported to the Facilities Mechanical Engineer for further investigation.
- 5 The Supply pump should be switched off at the control panel until the source of the blockage has been found and cleared.

#### 4.2.8 Air Blower

- 1 The Blower is surface mounted, and located beneath the Sparge tank.
- 2 There are no serviceable components within the Blower, but it is inspected by the Waste Facilities' Mechanical Engineer as part of general duties.

#### 4.2.9 Submersible Pump

- 1 The submersible (Supply) pump is located at the bottom of the Pump Chamber No1 (Nom 5.0m deep) beneath the Sparge tank.
- 2 The lifting out and servicing of the submersible pump is undertaken by a Contractor on the Authority's behalf.



#### 4.2.10 Centrifugal Pumps (2No Transfer)

- 1 The Centrifugal pumps are not subject servicing due to their low monetary value. (The servicing of these low value pumps is as costly as their replacement with new.)
- 2 The pumps operate until a fault develops. The pump is then replaced, with an identical pump kept in Stores, by Waste Facilities' Mechanical Engineer. The Stores pump is then replaced with a new identical pump.
- 3 Any fault occurring with the pump shall be investigated to determine if it is worth repairing.

#### 4.2.12 System Cleansing

- 1 Given the organic nature of the leachate; the aeration system can be subjected to the development of a biofilm on various elements of the system. This is particularly problematic to the jetting nozzles, where the biofilm can reduce their efficiency.
- 2 The Sparge tank and Jetting tank pipework shall be cleansed in accordance with Sparge Tank Cleansing procedure EMS 5.

#### 4.2.13 Electrical Safety Testing

- 1 The entire Leachate Treatment facility is tested for safety and compliance by a specialist electrical contractor selected from the Authority's list of authorised [Contractors and Suppliers EMS 4](#)

#### 4.2.14 Telemetry System

- 1 The telemetry system is serviced by the specialist company providing the online access to the telemetry records.

### 4.3 Flowmeter Calibration

- 4.3.1 The flowmeter shall be calibrated on an annual basis, or in the event of any changes in the operation, installation or pipework configuration which may influence the rate of flow through the discharge pipeline; or cause turbulence in or at the flow meter and its associated installation pipework.
- 4.3.2 The flowmeter shall be calibrated for accuracy of flow rate/ readout by an independent accredited body.
- 4.3.3 If the flowmeter is taken off site for repair or service, the leachate system will be shut down until the flowmeter is returned; whilst maintaining the use of the telemetry system to monitor the site levels

4.3.4 Once re-installed or replaced, the flowmeter shall be subject re-calibration.

4.3.5 A Calibration Certificate shall be supplied, and filed for reference.

#### **4.4 Procedures in event of System Failure**

4.4.1 Typical events which have caused a system failure:-

- Power failure from electricity supplier.
- Power failure from control panels to pumps, or pump failure.
- Blocked discharge pipe work.
- Acts of extreme vandalism.
- Severe weather events.

4.4.2 In the event of a system breakdown, carry out a visual inspection for evidence of the above. In the event of:

1 Power failure from electricity supplier

The site takes its supply as a feed from the Waste Transfer Station, and as such does not have an account with an electrical supplier. Therefore, any remediation to the failure of an electrical supply will be subject to the action of the Waste Transfer Station account holder.

If a long delay is expected before power supply is re-established, the following options for controlling the leachate level are available:-

- i) Request a maintenance service contractor to attend site with a portable generator. This can be coupled straight into the control panel. The aeration system should run on auto, as normal, provided the generator is periodically fuelled up.
- ii) Arrange for tankering of leachate off site. Leachate can be extracted from the Pump Chamber.

2 Power failure from control panel to submersible pump, or submersible pump failure.

- i) Commission an electrical contractor to investigate/rectify problem.
- ii) If the fault is due to a pump failure, and a long delay is expected before fault can be rectified, organise a contractor to replace the unserviceable with the standby pump from Stores.

3 Blocked discharge pipe work

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Ensuring that the system is offline:

- i) Open all pipework at the various joints to locate the blockage, and arrange to have the pipeline jet cleaned to remove the blockage.
- ii) If the pipework has suffered a build-up that cannot be jet cleared, arrange to have the relevant pipework replaced. Details of the pipework can be found on the Asset Register.

4 Acts of extreme vandalism

Acts of extreme vandalism are varied in their nature and the damage to the treatment system is unpredictable. In such instances remediation works will need to be relevant to the nature of the damage.

When the vandalism entails a loss of power, it shall be rectified in accordance with procedures set out above for loss of power.

5 Severe weather events (*Freezing temperatures*)

Severe weather events in the form of very low temperatures have in the past resulted in the freezing of the pipework in and around the treatment compound.

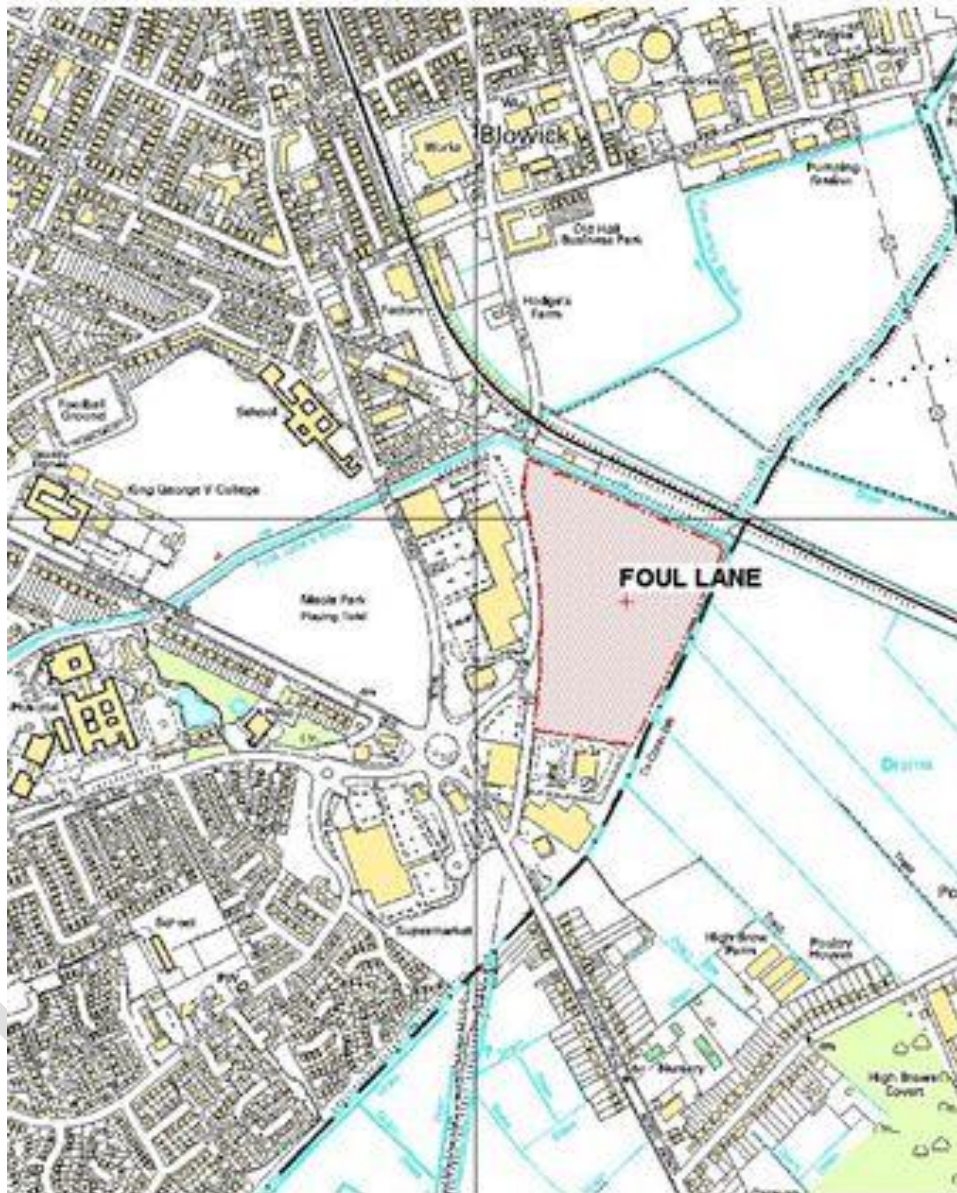
To combat this, protective measures in the form of thermostatic heaters and pipework insulation have been put in place.

Despite these protective measures being in place, there have been occurrences when extremely low temperatures have still resulted in freezing pipework.

In such low temperatures, it is unlikely that any remediation works would be practicable due to the physical difficulties presented by freezing weather conditions in getting plant and equipment to site, and the temporary cessation of the leachate treatment and discharge systems is the only option.



## APPENDIX I Location Plan



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MERSEYSIDE WASTE DISPOSAL AUTHORITY

## APPENDIX II

### Trade Effluent Discharge Consent

10/02 2005 10:48 FAX 008/013

 **United Utilities**

Merseyside Waste Disposal Authority  
6th Floor North House  
17 North John Street  
Liverpool  
Merseyside  
L2 5QY

Service Delivery  
Thirlmere House  
Lingley Mere Business Park  
Lingley Green Avenue  
Great Sankey  
Warrington WA5 3LP  
Telephone 01925 234000  
www.unitedutilities.com

NOTE: Victoria Searchfield  
Direct Line: 0151 906 5232

Date: 08 April 2004  
FAO The Company Secretary

Dear Sir

**TRADE EFFLUENT - WATER INDUSTRY ACT 1991 - Foul Lane Southport Merseyside  
PR8 5LA**

I enclose your NOTICE OF DIRECTION CONCERNING THE DISCHARGE OF TRADE EFFLUENT.

This document is issued by virtue of Statutory Powers granted by the Water Industry Act 1991 and as such a "true copy" has now been placed on public record. The Notice of Direction relates solely to the trade effluent described in your Trade Effluent Notice and you must notify United Utilities Water PLC of:

- a) any proposed changes to the nature and composition of the effluent;
- b) any proposed changes to the rate of discharge and/or daily volume;
- c) any proposed change of name of your Company (or trading name);
- d) permanent termination of the discharge.

The conditions laid down in the Notice of Direction are the only conditions under which United Utilities Water PLC will undertake to receive your effluent into the foul sewer. Any failure to comply with such conditions is an offence under the Water Industry Act 1991.

In respect of clause 10(a) of the Notice of Direction, I understand that representative samples of the trade effluent may be obtained from the sample chamber after the 3-stage interceptor, in the car park of the waste reception chamber. You should note that officers designated in writing by United Utilities Water PLC shall have right of safe access at all reasonable hours without notice for the purpose of obtaining a sample of trade effluent.

United Utilities Water PLC  
Registered in England & Wales No. 2156678  
Registered Office: One-Stop House, Great Sankey  
Warrington WA5 3JW

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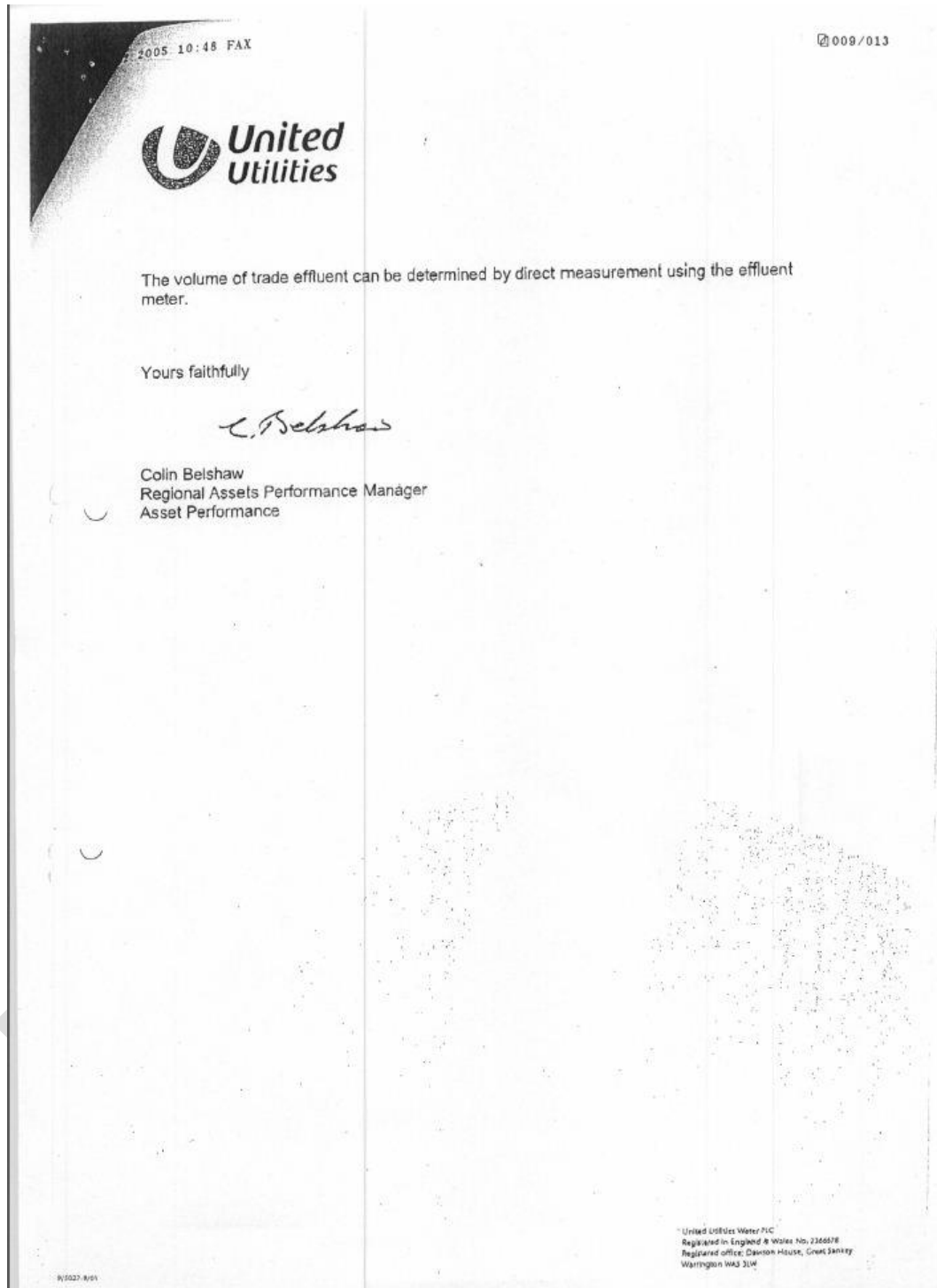
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MERSEYSIDE WASTE DISPOSAL AUTHORITY

## MAINTENANCE MANUAL

Foul Lane



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MERSEYSIDE WASTE DISPOSAL AUTHORITY

2005 10:48 FAX 010/013

 **United Utilities**

Document: Direction  
WwTW: Southport  
Reference: 703T41092SPT1

**WATER INDUSTRY ACT 1991**

**NOTICE OF DIRECTION CONCERNING THE DISCHARGE OF TRADE EFFLUENT**

To Merseyside Waste Disposal Authority

of 6th Floor North House  
17 North John Street  
Liverpool  
Merseyside  
L2 5QY

United Utilities Water PLC (hereinafter called "the Company") hereby give you Notice as owner/occupier of the trade premises situate at **Foul Lane Southport Merseyside PR8 5LA**

that the Company in exercise of the powers conferred upon them by Section 124 of the above Act DIRECT that as from **01 August 2004** all conditions attaching the CONSENT dated the **17 November 1998** to the discharge of trade effluent into the public sewer from the said trade premises as requested by a Trade Effluent Notice dated the **23 October 1998** shall be annulled and the following conditions be substituted, namely:

Nature of discharge	1a) Subject to the provisions of conditions 6,7,8 and 9 below the nature or composition of the trade effluent to be discharged under this Consent shall be solely as specified in the said Trade Effluent Notice and shall consist solely of waste water derived from <b>closed landfill site</b>
	1b) The trader shall give to the Company prior written notice of any change in the process or the process materials or any other circumstances likely to alter the constituents of the trade effluent as set out in condition 1(a). In such circumstances, no substance of which the Company has not had previous notice, may be discharged unless and until the Company has agreed to accept the substance at a limit imposed by the Company which shall then be deemed to be incorporated in this Consent by agreement and shall not prejudice the right of the Company to serve a Direction earlier than two years from the date of such incorporation.
	The Trader shall also give not less than seven days written notice to the Company of any change in the name of the occupier or owner.
Sewer affected	2. The sewer into which the trade effluent may be discharged and the point of discharge is the foul sewer situate at <b>Foul Lane</b>
Connections	3. No connections shall be made to the said sewer without the prior approval of the Company and all such connections shall be constructed and maintained to the satisfaction of the Company at the expense of the Trader
Maximum volume of discharge	4. The maximum amount of the trade effluent discharged in any one day of twenty four hours shall not exceed <b>150 m<sup>3</sup></b> without prior written consent of the Company.
Maximum rate of discharge	5. The highest rate at which the trade effluent may be discharged shall not exceed <b>21 litre/sec.</b>

SDF129

United Utilities Water PLC  
Registered in England & Wales No. 2266678  
Registered office: Dawson House, Great Sankey  
Warrington WA5 3JH

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MERSEYSIDE WASTE DISPOSAL AUTHORITY

2005 10:48 FAX

011/013

Document: Direction  
WwTW: Southport  
Reference: 703T41092SPT1

 **United Utilities**

**Matters to be eliminated prior to discharge to sewers**

6. The following matters shall be eliminated from the trade effluent before it is discharged into the sewers of the Company:

- a) petroleum spirit;
- b) calcium carbide;
- c) carbon disulphide;
- d) except as provided in paragraph 7 hereof, the prescribed substances listed in Schedule 1 to The Trade Effluents (Prescribed Processes and Substances) Regulations 1989, as amended from time to time, insofar as they are in concentration greater than the background concentration (as defined in the said Regulations);
- e) where the trade effluent derives from a prescribed process mentioned in Schedule 2 to the said Regulations, and except as provided in paragraph 7 hereof, asbestos (as defined in the said Regulations) and chloroform in a concentration greater than the background concentration (as defined in the said Regulations);
- f) organo-halogen compounds including pesticide residues and degreasing agents;
- g) any substances which either alone or in combination with each other or with any other matter lawfully present in the said sewers would be likely to;
  - i cause a nuisance or produce flammable, harmful or toxic vapours either in the sewers or at the sewage works of the Company;
  - ii injure the sewers or interfere with the free flow of their contents or affect prejudicially the treatment and disposal of their contents or have injurious effects on the sewage treatment works to which it is conveyed or upon any treatment plant there;
  - iii be dangerous to or cause injury to any person working in the sewers or at the sewage treatment works;
  - iv affect prejudicially any watercourse, estuary or coastal water into which the treated effluent will eventually be discharged.

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Warrington WA2 9UR

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MERSEYSIDE WASTE DISPOSAL AUTHORITY

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012/013

Document: Direction  
WwTW: Southport  
Reference: 703T41092SPT1

 **United Utilities**

**Matters to be limited prior to discharge to the sewer**

7. The trade effluent shall not contain

- a) sulphides, hydrosulphides, polysulphides and substances producing hydrogen sulphide on acidification in excess of 1 mg/l
- b) cyanides and cyanogen compounds which produce hydrogen cyanide on acidification in excess of 1 mg/l
- c) sulphates as  $\text{SO}_4$  in excess of 1000 mg/l
- d) chemical oxygen demand (COD) load in excess of 100 kg in any one period of 24 hours, such load being determined by multiplying the COD concentration of the supernatant liquor of a composite sample of the trade effluent (after 1 hour's quiescent settlement at pH 7.0) taken during that 24 hour period and the volume of the trade effluent discharged during that 24 hour period.
- e) toxic metals in excess of 10000  $\mu\text{g/l}$  either individually or in total ie Antimony, Beryllium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Tin, Vanadium, Zinc;
- f) separable grease and oil in excess of 100 mg/l
- g) ammonia and its compounds in excess of 250 mg/l
- h) methane in solution in excess of 0.14 mg/l

**Temperature** 8. No trade effluent shall be discharged which has a temperature higher than  $43.3^\circ\text{C}$  ( $110^\circ\text{F}$ )

**pH value** 9. No trade effluent shall be discharged having a pH of less than 6 or greater than 10

**Inspection chamber** 10. a) An inspection chamber or manhole shall be provided and maintained by the Trader in a suitable position in connection with each pipe through which the trade effluent is discharged and shall be so constructed and maintained as to enable a person readily to obtain at any time samples of the trade effluent so discharged, to the approval of the Company

b) There shall be provided, operated and maintained in working order by the Trader a meter in such a position and of such specification as shall be approved by UUWPLC such as will measure and provide a continuous record of the quantity and rate of discharge of any trade effluent being discharged from the premises into the said sewer and following the written request of UUWPLC to have the accuracy of the meter independently tested by an agreed body.

c) If the measuring and recording apparatus as aforesaid ceases to function satisfactorily, then the Company shall have the right to make estimates of the volume and composition of the trade effluent until such time as the said apparatus is again operating to the satisfaction of the Company.

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MERSEYSIDE WASTE DISPOSAL AUTHORITY

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013/013

**United Utilities**

Document: Direction  
WwTW: Southport  
Reference: 703T41092SPT1

d) Records shall be kept by the Trader of the volume, rate of discharge, nature and composition of the trade effluent discharged to the sewer, together with any records required to be kept by the Trader under the provisions of any Notice of Determination issued by the Secretary of State under Sections 120 and 132 of the Water Industry Act 1991. Such records shall be kept available for inspection at all reasonable times by an authorised officer of the Company and copies shall be sent to the Company on demand.

e) The foregoing provision of this condition shall be deemed to be complied with if other methods of sampling the trade effluent, determining its nature and composition, and measuring and recording the discharge are agreed and confirmed in writing by the Company.

**Payment**

11. Payment shall be made to the Company on demand of charges in respect of the reception, conveyance, treatment and disposal of the trade effluent in accordance with the Company's Charges Scheme in force from time to time.

**Dated** 08 April 2004

**Issuing Office** Asset Management  
Asset Performance  
Lingley Mere  
Lingley Green Avenue  
Great Sankey  
Warrington  
WA5 3LP

**Signed** *C. Beckett*  
REGIONAL ASSETS PERFORMANCE MANAGER  
for and on behalf of United Utilities Water PLC

1. Your attention is drawn to the following provisions of Section 126 (1) of the Water Industry Act 1991 relating to Appeals to the Director General of Water Services. The owner or occupier of any trade premises may within two months of the giving to him under Subsection (5) of the Notice of a Direction under that Section, or with the written permission of the Director at any later time, appeal to the Director against the Direction.

2. The Notice of Direction must state the date, being a date not less than two months after the giving of the Notice on which the Direction is to take effect. If an appeal is brought under Section 126 (1) before that date the Direction shall not take effect until the appeal is withdrawn or finally disposed of. Provided that so far as a Direction which is the subject of an appeal relates to the making of Charges payable by the occupier of the trade premises, it may take effect on any date after the giving of the Notice.

On appeal under Section 126 (3) and (4) the Director General of Water Services shall have power to annul the Direction given by the Sewerage Undertaker and to substitute for it any other Direction, whether more or less favourable to the appellant and any Direction given by the Director of Water Services may include provision as to the charges to be made for any period between the giving of the Notice by the Sewerage Undertaker and the determination of the appeal.

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## APPENDIX III

### Site Infrastructure



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## APPENDIX IV

### Photographs

#### Photographs

The following photographs are included in this section:-

Photograph no.	Description
No.1	Discharge Pumping Chamber - Control panel
No. 2	Discharge Pumping Chamber - Flowmeter
No. 3	Discharge Pumping Chamber - Control panel housing
No. 4	Aeration System - Pump control panel
No. 5	Aeration System - Flow meter
No. 6	Aeration System - Methane analyser
No. 7	Emergency isolation switch



Discharge pumping Chamber No 2 Control Panel Housing

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Discharge Pumping Chamber No 2 Control Panel





Discharge Pumping Chamber No 2 Flowmeter



Aeration System pump control panel

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Aeration System Flow Meter

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Aeration System Methane Analyser

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**METER HOUSING**



**KILL SWITCH**

Emergency isolation switch located in Electrical Meter housing