



RISK & HAZARD MANAGEMENT

010 - Emissions Monitoring

Unifrax, Line 4 Permit Variation



Safety Risk



Business Risk



Environment Risk

Document History

Version	Issue	Date	Notes	Author	Reviewer
1	-	23/03/22	Working draft with client.	J. Carroll R. Nibbs	C. Nicholls
2	1	01/07/22	Issue as part of permit application.	J. Carroll R. Nibbs	C. Nicholls R. Ritchie R. Nibbs

Contents

	Document History	1
1	Introduction	2
2	Emissions to air	3
3	Wastewater emissions monitoring	5
4	Waste Emissions	8
4.1	Monitoring procedures, controls and quality check.....	8
4.2	Environmental monitoring offsite (beyond the installation)	8

1 Introduction

This document provides the information required on Form C3 Section 4.

Please note that this document refers to the site as Unifrax Widnes and to the owning company as Unifrax. Unifrax was the name of the American company that owns Widnes site. A further complexity is added because due to a recent merger, Unifrax has changed its name to Alkegen. So, it is possible in correspondence or discussions that the site may be referred to as Alkegen.

The legal entity that owns the site at Widnes is however called Saffil Ltd and remains so despite the name changes to Unifrax and now Alkegen – and it is in this name that the EPR application is made on the accompanying forms.

2 Emissions to air

The following table describes the measures used for monitoring emissions from each of the emission points listed in Table 2 of Form C3. Sampling locations are carried out in accordance with BS 15259. Recent monitoring reports carried out by MCERTS qualified contractors for each of the current emission points to air on site are available on request and contain the details of the sampling processes that are used. The same contractors/approach will be utilised for the new emission points.

It should be noted in summary that a number of monitoring frequencies and the current continuous monitoring philosophy for some pollutants are not strictly in line with BREF requirements. However, the following justifications are provided for this:

- Monitoring of speciated VOC components and hydrogen chloride was carried out monthly for many years under previous IPC/IPPC permits, notably BT1614IW (August 2005) and earlier IPC permits. The Line 3 EPR permit variation process XP3533CB (May 2012) recognised that a large database of results demonstrated good compliance with emission limit values (ELVs) and monitoring frequency was changed in agreement with the EA to quarterly within the EPR permit.
- Similar reasoning was used to agree with the EA the retention of dioxin monitoring frequency as annual and particulates monitoring at quarterly within the Line 3 EPR permit. (May 2012).
- The use of continuous monitoring for hydrogen chloride emissions has also been reviewed with the EA in the past. It was concluded that the additional costs of continuous hydrogen chloride monitoring were not justified given that water scrubbing was considered BAT and there was a large amount of historical data demonstrating compliance with benchmark ELVs. While continuous monitoring of VOCs has not been formally considered, it is likely that the same conclusion would be reached on cost vs benefit.

Table 1 Air emissions monitoring

Parameter	Emission point	Monitoring frequency	Monitoring standard/method	Sampling and analysis carried out by	Sampling and equipment standard
Hydrogen Chloride	A3, A5 and A11	Quarterly	BS EN 1911	Socotec	MCERTS
Vinyl Chloride	A3, A5 and A11	Quarterly	PD CEN-TS 13649	Socotec	MCERTS
Ethylene Oxide	A3, A5 and A11	Quarterly	PD CEN-TS 13649	Socotec	MCERTS
Class A and Class B VOCs	A3, A5 and A11	Quarterly	PD CEN-TS 13649	Socotec	MCERTS
Dioxins	A3, A5 and A11	Annual	BS EN 1948	Socotec	MCERTS
Particulates	A2, A4, A6 and A12a/A12b	Quarterly	BS EN 13284-1	Socotec	MCERTS
Nitrogen Dioxide	A7, A9, A13 and A14	Annual	BS EN 14792	Socotec	MCERTS

All the sampling points for Line 4 will be constructed to meet the requirements set out in TGN M1 and BS EN 15259:2007, including consideration of:

- Location of sample points
- Orientation of sample points
- Access to sample points
- Fall prevention

This in order to ensure that MCERTS standards are achieved.

3 Wastewater emissions monitoring

Table 2 describes the measures used for monitoring emissions to water and sewer from each of the emission points listed in Table 2 of Form C3.

It should be noted in summary that a number of monitoring frequencies are not strictly in line with BREF requirements. However, the following justifications are provided for this:

- W2 is a very small flow from a cooling tower purge and other than low levels of water treatment chemicals can be considered a 'clean' stream. This combined with levels of suspended solids and COD below benchmark means that more frequent monitoring is not required.
- W1/W3 are relatively very small flows, discharging (after mixing with other run off and drainage from other sites in the area) into a very large estuarine receiving water. Benchmark levels are achieved for all components except suspended solids. Control of suspended solids is difficult due to the nature of these flows being primarily storm water run off. Environmental impact has been modelled and is insignificant. Increased monitoring frequency of suspended solids is therefore not required.
- Addition of Line 4 will make minimal difference to flow or composition of W1 and W3 because they are primarily used for storm water drainage from the site. Monitoring frequency has proved appropriate over more than twenty years so increase in frequency not required.
- A project was completed in 2001 to connect Line 1 to sewer. Previously process effluent discharge had been direct to controlled waters. At this time other action was also taken, by reconfiguring and removing or stopping drains and the installation of containment areas, in order to eliminate fugitive process emissions to controlled waters. Lines 2 and 3 were also connected to sewer when they were built in 2004 and 2013 respectively.
- Emissions to sewer have been effectively regulated since that time under consents with the sewerage provider (United Utilities). Compliance with consent limits has been good with sampling and analysis of effluent undertaken by United Utilities. Frequency of monitoring is considered appropriate given the level of compliance, relatively small flows and low impact of the effluent on the receiving treatment works.
- Deviation of recommended monitoring frequency vs guidance is principally on COD and suspended solids. These are areas of minor concern, given the relatively very low effluent flows and impact. United Utilities have suggested removing the COD limit from the consent because it is of minor concern and difficult to measure.

Table 2 Water emissions monitoring

Parameter	Emission point	Monitoring frequency	Monitoring method/ standard	Sampling carried out by	Analysis carried out by:
Dry Weather flow	W1, W2, W3	Monthly	Calculation	N/A	Not measured
pH	W1	Monthly	Grab sample BS ISO 10523	Unifrax	United Utilities
Temperature	W1	Monthly	Grab sample	Unifrax	Unifrax
Suspended solids	W1	Monthly	Grab sample BS EN 872	Unifrax	United Utilities
COD	W1	Monthly	Grab sample BS 6068	Unifrax	United Utilities
Mercury	W1	Monthly	Grab sample BS EN 1483	Unifrax	United Utilities
Cadmium	W1	Monthly	Grab sample BS EN 5961	Unifrax	United Utilities
pH	W2	Monthly	Grab sample BS ISO 10523	Aquaserv (contract cooling tower management service company)	Severn Trent Services
Temperature	W2	Monthly	Grab sample	Aquaserv	Severn Trent Services
Suspended solids	W2	Monthly	Grab sample BS EN 872	Aquaserv	Severn Trent Services
COD	W2	Monthly	Grab sample BS 6068	Aquaserv	Severn Trent Services
Mercury	W2	Monthly	Grab sample BS EN 1483	Unifrax	United Utilities
Cadmium	W2	Monthly	Grab sample BS EN 5961	Unifrax	United Utilities
pH	W3	Monthly	Grab sample BS ISO 10523	Unifrax	United Utilities
Temperature	W3	Monthly	Grab sample	Unifrax	Unifrax

Parameter	Emission point	Monitoring frequency	Monitoring method/standard	Sampling carried out by	Analysis carried out by:
Suspended solids	W3	Monthly	Grab sample BS EN 872	Unifrax	United Utilities
COD	W3	Monthly	Grab sample BS 6068	Unifrax	United Utilities
Mercury	W3	Monthly	Grab sample BS EN 1483	Unifrax	United Utilities
Cadmium	W3	Monthly	Grab sample BS EN 5961	Unifrax	United Utilities

Table 3 Sewer emissions monitoring

Parameter	Emission point	Monitoring frequency	Monitoring method/standard	Sampling carried out by	Analysis carried out by:
pH	S2, S3, S4 and S5	Continuous by instrument and quarterly by analysis	Grab sample BS ISO 10523	United Utilities	United Utilities
Mercury	S2, S3 and S5	Quarterly	Grab sample BS EN 1483	United Utilities	United Utilities
1,2 dichloro ethane	S2, S3 and S5	Quarterly	Grab sample BS EN ISO 10301	United Utilities	United Utilities

4 Waste Emissions

4.1 Monitoring procedures, controls and quality check

Wastes are managed and recorded in line with site SHE procedures. This ensures that waste disposal routes and carriers are selected in line with current legislation.

Significant recycling of packaging, pallets and drums is undertaken. Returnable packaging is used for our major internal customer. Unifrax is a member of VALPAK in order to ensure obligations under the Packaging Waste Regulations are met. An annual report is submitted to VALPAK as part of these obligations.

Details of waste quantities and disposal/recycling routes are given in document 009 section 4.

4.2 Environmental monitoring offsite (beyond the installation)

No offsite monitoring is carried out.